IRET Congressional Advisory

INSTITUTE FOR RESEARCH ON THE ECONOMICS OF TAXATION

IRET is a non-profit 501(c)(3) economic policy research and educational organization devoted to informing the public about policies that will promote growth and efficient operation of the market economy.

July 6, 2011 **Advisory No. 276**

PAST RECESSIONS OFFER PERSPECTIVE ON THE FEDERAL GOVERNMENT'S DEFICIT AND DEBT PROBLEMS

The federal government's deficit usually rises during recessions, and the depth of the last recession contributed to the red ink. However, the rise in the deficit this time was extraordinary. Why did the federal deficit increase so much more during and after this recession than during and after previous recessions?

This paper examines the 10 U.S. recessions since 1950. It concludes that an upsurge in federal spending is the primary reason for federal deficits of a magnitude not seen since World War II.

Table 1 Federal Government Receipts, Outlays, Deficits, And Debt Held By The Public As Percentages Of GDP, Fiscal Years 2005-2011

Fiscal Year	Receipts	Outlays	Surplus or Deficit (−)	Federal Debt Held By The Public
2005	17.3	19.9	-2.6	36.9
2006	18.2	20.1	-1.9	36.5
2007	18.5	19.6	-1.2	36.2
2008	17.5	20.7	-3.2	40.3
2009	14.9	25.0	-10.0	53.5
2010	14.9	23.8	-8.9	62.2
2011 estimate	14.4	25.3	-10.9	72.0

Data Source: U.S. Office of Management and Budget

The federal government was running a budget deficit prior to the recession that officially began in December 2007, but the red ink appeared tolerable relative to the size of the economy. The Office of Management and Budget reports that, as a share of gross domestic product (GDP), the deficit was 1.9% in fiscal year 2006 and 1.2% in fiscal year 2007.[1] (See Table 1.) Because real output was growing faster than the debt, federal debt held by the public was actually declining slightly compared to GDP, from 39.6% in 2005 to 36.5% in 2006 and 36.2% in 2007.

Since then, the federal government deficit has exploded. Measured as a share of GDP, the deficit was 10.0% in fiscal year 2009, 8.9% in 2010, and an estimated 10.9% in 2011. From 2007 to 2011, federal government debt held by the public will have doubled, from 36.2% of GDP to an estimated 72.0%.

The huge deficits of recent years, and the consequent mushrooming of debt, are not long sustainable. The debt crisis that has engulfed Greece illustrates the danger when a government incurs outsized deficits and debt without a credible plan for reducing them.

Federal government finances during and after post-1950 recessions

The National Bureau of Economic Research (NBER), a non-partisan, non-governmental economic research organization, is the traditional arbiter of when recessions begin and end.[2] It has recorded 10 recessions since 1950. The most recent began in December 2007 and officially ended in June 2009.

We are therefore two years into the recovery. (NBER's dating methodology calls a recession over when the economy reaches its low point and starts recovering. However, many people feel the United States is still in a recession, especially with unemployment roughly double what it was before the downturn and with the bubble in housing prices continuing to deflate.) Table 2 lists the 10 post-1950 recessions, based on NBER's dating methodology.

Federal Government Receipts

Chart 1 shows federal receipts, expressed as a share of GDP, before and after every post-1950 recession.[3] The GDP data are quarterly and come from the National Income and Product Accounts (NIPA) that are compiled by the U.S. Bureau of Economic Analysis (BEA). The federal revenue data similarly are quarterly and come from NIPA. (Because of differences related to timing, NIPA's numbers for federal government receipts, expenditures, and deficits differ somewhat from those reported in the federal budget.)

Table 2 U.S. Recessions Since 1950

Start	End	Length in Months
July 1953	May 1954	10
Aug 1957	Apr 1958	8
Apr 1960	Feb 1961	10
Dec 1969	Nov 1970	11
Nov 1973	Mar 1975	16
Jan 1980	Jul 1980	6
Jul 1981	Nov 1982	16
Jul 1990	Mar 1991	8
Mar 2001	Nov 2001	8
Dec 2007	Jun 2009	18

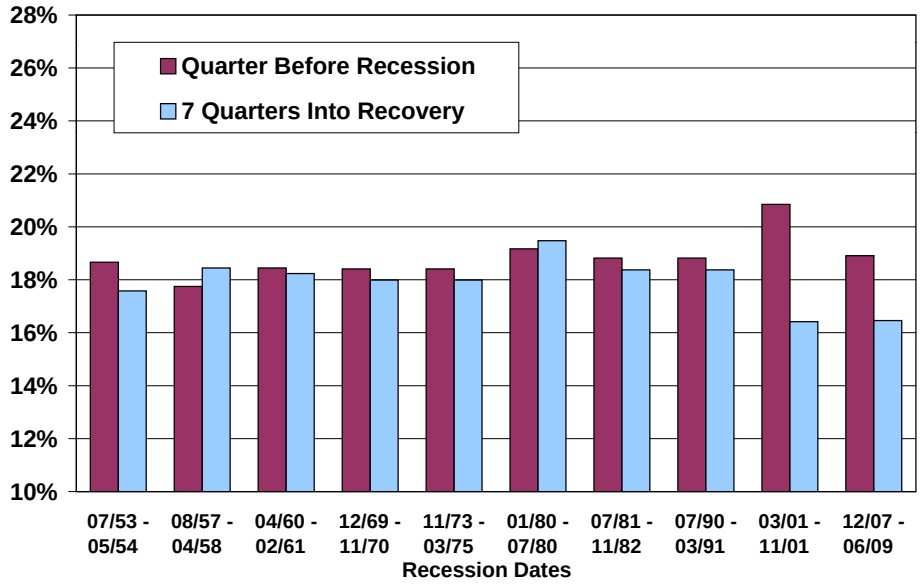
Source: National Bureau of Economic Research

For each post-1950 recession, one bar on the chart measures federal receipts as a share of GDP just before the recession and a second bar measures the ratio seven quarters after the recession has ended. (The 7th post-recovery quarter was chosen as the endpoint because that captures the latest available NIPA data following the 2007-2009 recession. For the same reason, the 7th post-recession quarter is the endpoint in discussions below of federal expenditures and federal deficits.)[4] For example, in the last recession, federal government receipts as a share of GDP were 18.9% immediately before the recession and 16.5% in the 7th quarter of the recovery.

Although each recession has its own story to tell, a general pattern emerges. Because the federal tax system is progressive, tax collections rise as a share of GDP in upturns as incomes rise and fall in downturns as incomes fall. Taxes also tend to decline as a share of GDP in downturns because the government, normally with some lag, often enacts tax relief legislation when the economy falters. In eight out of 10 post 1950-recessions, federal receipts were lower as a share of GDP seven quarters after the recession ended than they had been in the quarter before the recession began.

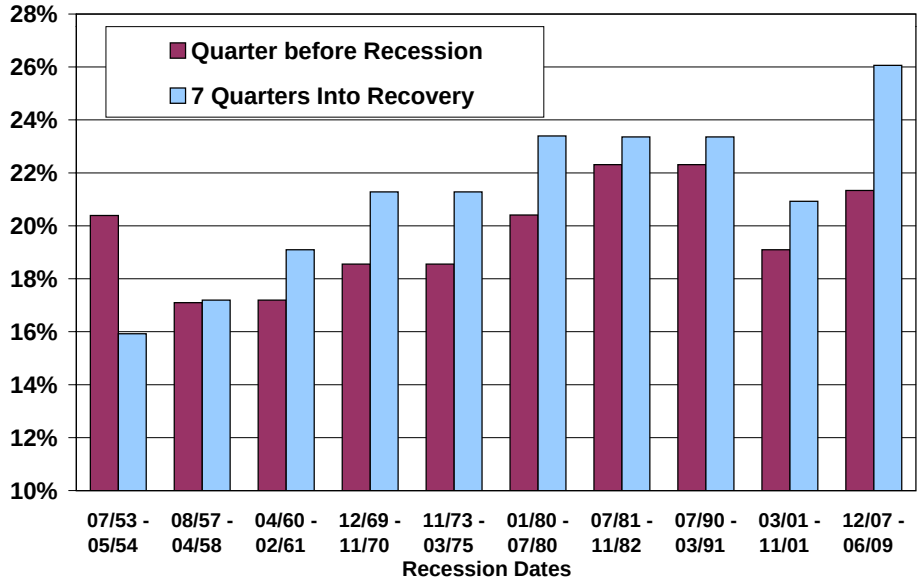
The last recession follows this pattern. However, it stands out because the fall in receipts was greater and the share of GDP in the 7th quarter of the recovery smaller than all but one other post-1950 recession. Encouragingly, though, revenue as a share of GDP has gained 0.7 percentage point since the recession hit bottom and the recovery began. Moreover, past experience suggests that if the recovery continues, government revenue will keep rising briskly for the next several years without any change in current tax rates and attain a more typical level. Upbeat revenue surprises are already appearing at the federal, state, and local levels. Note Treasury Secretary Geithner's recent announcement that unexpectedly strong tax receipts have delayed by three weeks the deadline for raising the federal debt ceiling,[5] and upward revisions in revenues in states from California to Virginia.

Chart 1 Federal Receipts During And After Recessions Since 1950, As Percentages of GDP



Calculations using data from BEA and NBER

Chart 2 Federal Expenditures During And After Recessions Since 1950, As Percentages of GDP



Calculations using data from BEA and NBER

The revenue drop during and after the last recession was so large for three main reasons. First, the recession was the most intense since the Great Depression. Second, in an effort to prop up demand, the government included several temporary tax cuts in the 2009 stimulus package and 2010 tax extenders legislation. Third, the income tax has gradually become more dependent on higher-income individuals as increasingly generous tax credits and other changes have removed a growing share of the population from the income tax rolls. By one estimate, nearly half of households paid no federal income tax in 2009 (and many received net government payments through the tax system).[6] Because the incomes and tax liabilities of higher-income individuals rise and fall sharply with business cycles, income tax collections have become more volatile than in the past. Note that the drop in revenues during the recession was not due to the Bush tax cuts. With one exception, these cuts, enacted in 2001-2003, were already fully implemented before the recession began. (The exception was the reduction in the estate tax, which was phased in between 2001 and 2010, but that tax accounts for a minute share of total tax receipts.) Part of the drop in revenue following the 2001 recession was due to the 2001-2003 tax relief legislation.

Federal Government Expenditures

Chart 2 displays federal government spending as a share of GDP before and seven quarters after all recessions since 1950. As before, the ratios are calculated using quarterly NIPA data.[7]

During recessions, federal spending almost always climbs. This is roughly the mirror image of what is observed with taxes. The higher spending is partly due to government assistance programs, such as unemployment compensation and food stamps, that automatically grow when the economy falters. It is also attributable to stimulus programs that Congress enacts in response to recessions. As the economy starts recovering, spending normally levels off at a higher level, sometimes rising or falling a bit. Spending typically does not quickly return to its pre-recession level for several reasons. One is the legislative lag: Congress often enacts stimulus programs belatedly, sometimes after recessions have ended. A second is the action lag: the outlays are usually not "shovel ready" but stretch out over several years. A third is that Congress tends to "ratchet up" spending as a share of GDP, never quite allowing "temporary" spending increases to end.

The last recession shows higher spending, as expected, but it is again an outlier because of the magnitude of the increase. Federal government spending was 21.3% of GDP just before the recession began, reached 27% of GDP at the bottom of the recession and in one quarter during the recovery (not shown on the chart), and was still 26.1% of GDP in the 7th quarter of the recovery. Except for a period during World War II, in which the entire country was mobilized in the war effort, federal outlays have never commanded so large a share of the U.S. economy. The previous post-1950 high had been during and after the long and deep 1981-1982 recession. (That recession's peak unemployment rate, 10.8%, still holds the post-1950 record.) According to NIPA figures, between 1950 and the start of the last recession, total federal expenditures' share of GDP averaged 20.3% and never exceeded 25%. However, in the nine quarters since the start of 2009, federal spending has never been below 25% of GDP.

Two significant contributors to the record-setting spending were the Troubled Asset Relief Program (TARP) enacted late in the Bush Administration and the stimulus program passed early in the Obama Administration. TARP was a one-time outlay reluctantly enacted in late 2008. It was motivated by a fear that financial markets might otherwise freeze totally and trigger a depression-like slump. Fortunately, the danger soon passed, TARP ended, and much of the TARP money was subsequently repaid to the government. The stimulus program that Congress approved in February 2009 represented an additional round of government spending and was larger than TARP. Moreover, the Administration and the Congressional Budget Office raised their baselines for future budgets based on some of the stimulus

spending, which has elevated federal outlays going forward and has made it harder to return federal spending to the share of GDP it was before the recession.

Federal Government Surpluses and Deficits

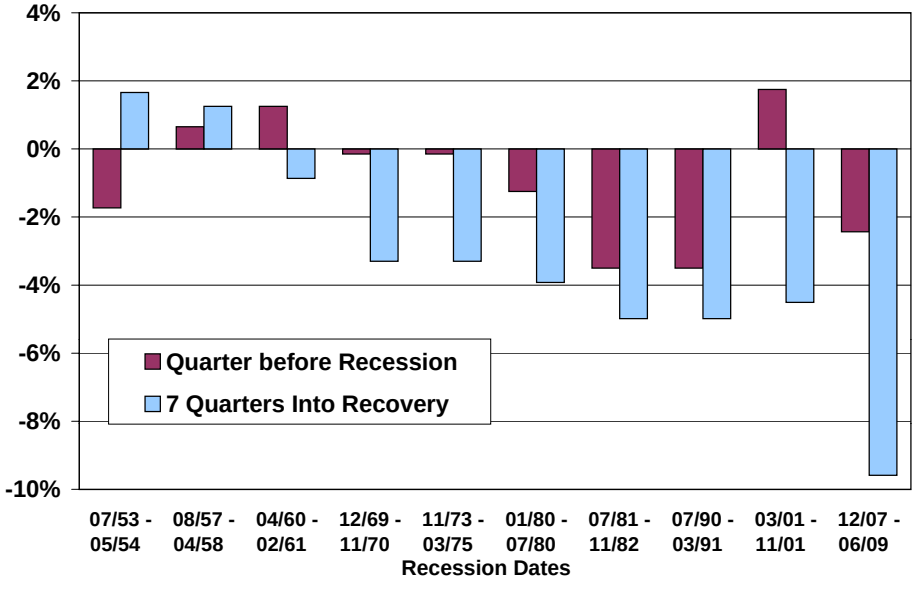
The federal government's surplus or deficit is simply its receipts minus its expenditures. Hence, the surplus or deficit is *not* independent of expenditures and receipts; it is the arithmetic result of them. From the first quarter of 1950 through the first quarter of 2011, government spending has usually exceeded government revenues, causing deficits to be frequent and surpluses rare. NIPA data show 204 quarters in which the federal government was in deficit and only 41 quarters in which it broke even or achieved a budget surplus.[8]

Federal deficits characteristically worsen during recessions due to both decreased government revenue and increased government outlays. This can be seen in Chart 3. In each of the last 8 recessions, the federal budget was larger in deficit in the 7th quarter of the recovery than it had been before the recession began. It is not shown on the chart, but NIPA data indicate that the deficit usually does narrow in the later years of recoveries.

The last recession has roughly followed this pattern. It is the magnitude of the change that is extraordinary. The deficit was 2.4% of GDP just before the recession, peaked at 11.2% of GDP when the recession hit bottom, and was still 9.6% after 7 quarters of recovery. The current, unusually deep federal budget deficit is the result of recession-depressed tax collections (see Chart 1) and stunningly high government expenditures (see Chart 2).

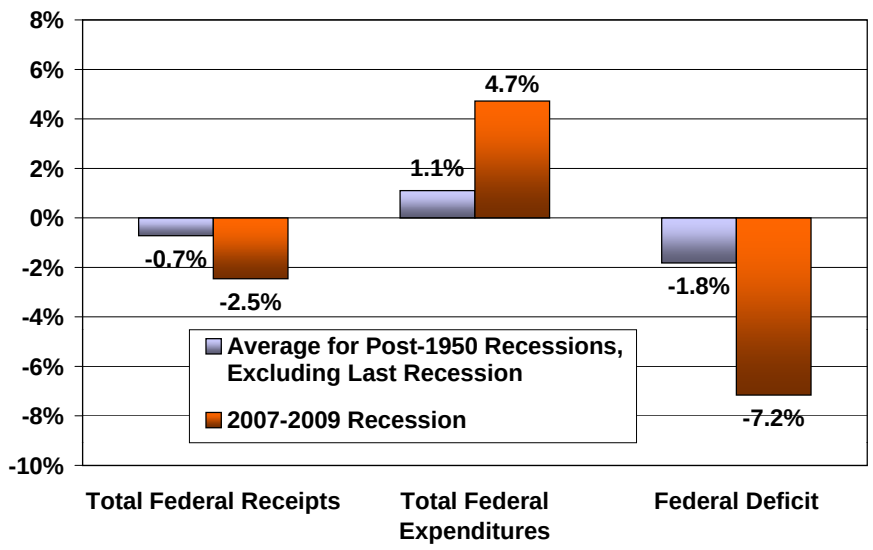
Chart 4 offers another way of viewing the contributors to the deficit and understanding the budget differences between the last recession and other post-1950 recessions. Consider the percentage point changes in receipts, expenditures, and deficits from immediately before the recessions to the 7th quarter of the recoveries. In other post-1950 recessions, on average, revenues fell 0.7 percentage point as a share of GDP, spending rose 1.1 percentage

Chart 3 Federal Surpluses Or Deficits During And After Recessions Since 1950, As Percentages of GDP



Calculations using data from BEA and NBER

Chart 4 Changes In Federal Receipts, Outlays, And Deficits As Shares Of GDP, Post-1950 Recessions (Quarter Before Recession Versus 7 Quarters Into Recovery)



Calculations by author using data from BEA and NBER

points, and, as a result, deficits increased 1.8 percentage points. In the last recession, receipts declined 2.5 percentage points as a share of GDP, expenditures jumped 4.7 percentage points, and, consequently, the deficit soared 7.2 percentage points (4 times the average). This comparison confirms the earlier message that while taxes declined more than usual in the last recession, a much bigger contributor to the current deficit is a record-setting surge of federal spending.

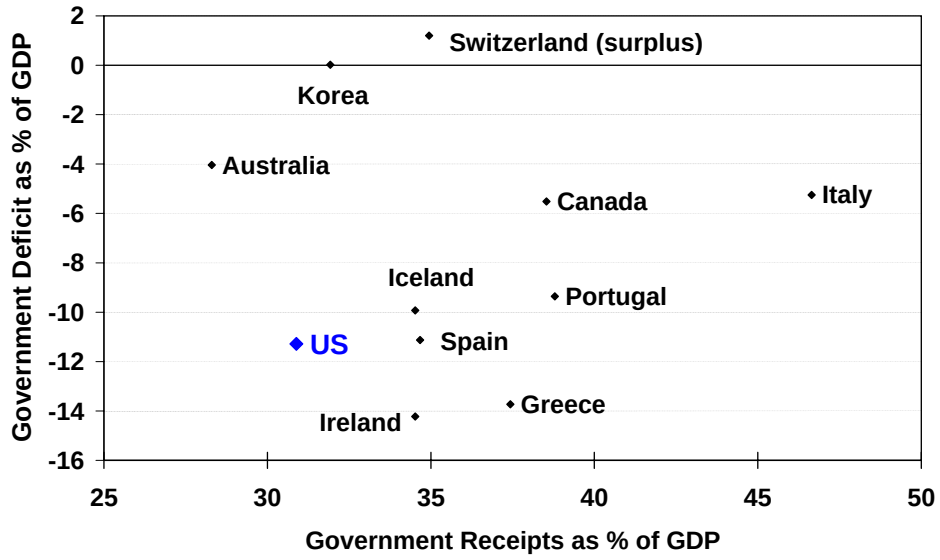
Should deficit reduction efforts focus on tax hikes or spending restraints?

According to Treasury Secretary Timothy Geithner, the deficit should be trimmed using a "balanced plan that has modest revenue increases through tax reform as well as some near-term spending savings and long-term entitlement reforms."[9] It is noteworthy that tax increases come first on Mr. Geithner's list and unsettling that he conflates tax increases and tax reform, hinting at an Administration strategy to use the promise of tax reform as a Trojan horse for enacting tax hikes. Further, it is unclear whether the Administration is willing to lock in meaningful entitlement reforms now or is merely saying they are something to look at it in the long term. Nor does the Administration acknowledge that higher federal outlays since late 2007 have contributed much more to the budget deficit than lower tax collections. The lack of balance in the causes of the recession suggests it might be reasonable to concentrate on the spending side to restore a sustainable federal budget. An examination of how tax and spending changes affect the economy reinforces the conclusion.

<u>Many proposed tax hikes would harm the economy and do little to cut the deficit</u>

Most of the tax increases that have been proposed in recent years would raise marginal tax rates. Two politically popular notions are increasing tax rate for upper-income individuals, whose marginal tax rates are already high, and pushing up business taxes under the guise of closing loopholes. For

Chart 5 High Government Revenues Do Not Guard Against Large Government Deficits, Selected OECD Countries In 2009



Source: OECD Economic Outlook 88 database. Data are for government at all levels.

example, the Obama Administration is vigorously seeking to end the last-in-first-out method of inventory accounting (LIFO), claiming it is an unjustified break that costs the government lots of money.[10] Far from being a shady loophole, however, LIFO is a widely accepted method of inventory accounting, especially useful in periods of inflation, that entered the tax code more than 70 years ago during the Franklin Roosevelt Administration.

The problem with higher marginal tax rates is that they would intensify tax biases against work, saving, and investment. Higher marginal rates on labor income would mean less work effort, with the effect strongest for productive upper-income individuals who have considerable flexibility in their hours and are already subject to steep marginal rates. Because capital investments are sensitive to the after-tax rate of return, the consequences of higher capital taxes would be less investment, lower productivity, and less output. Worker compensation ultimately depends on labor productivity, and one of the main determinants of productivity is the size and quality of the capital stock. Much of the pain from tax disincentives that reduce the capital stock would be shifted to labor in the form of lower pay and fewer good jobs.

The tax changes that would cause the smallest increases in marginal tax rates, and thus do the least damage to production, tend to be politically unpopular. For that reason they are unlikely to be enacted. Two examples of revenue raisers that would combine large revenue gains with modest damage to output would be reducing the earned income tax credit and scaling back the child credit.

Furthermore, because tax increases at the margin on capital and labor damage the economy, many proposed tax increases would collect much less money than government budgeteers claim. Tax collections depend on economic activity. If tax increases worsen biases against work, saving, and investment, the resulting declines in incomes and output will cut into tax collections. The economic losses associated with tax rate increases are often

several times the tax collected by the government. The total burden of the tax on the population is the sum of the tax plus the lost income. In a few cases, higher marginal tax rates would actually lose money (the Laffer effect), and in many cases, negative economic feedbacks would wipe out a third or two thirds of the predicted revenue gains. Government revenue estimators habitually exaggerate the revenue-raising power of tax increases because an official (unrealistic) assumption in their estimation models is that taxes never change aggregate economic activity.

One more reason to be wary of tax hikes as a deficit cure is that the extra tax money collected may be diverted into more government outlays, not less red ink. Higher government revenue may grow the government, not shrink the deficit, especially if strong spending curbs are absent. To investigate this possibility, Chart 5 compares government receipts and deficits in 2009 for several nations belonging to the Organisation for Economic Co-operation and Development (OECD).[11] (Unlike the earlier U.S. data, the OECD data are for all levels of government, not just the federal or national level.) Notice that high revenues do not, by themselves, protect against high deficits. For instance, Iceland, Spain, and Portugal have significantly higher receipts than the United States but only slightly lower deficits. Ireland combines higher receipts and a much larger deficit. The people of troubled Greece are much more heavily taxed than those of the United States – by 6.5 percentage points of GDP – but the government deficit is significantly larger. Meanwhile, Australia has somewhat lower government receipts than the United States and a much lower deficit, while Korea has somewhat higher receipts and no deficit. The chart suggests there is much truth to Milton Friedman's caution some years ago, "In the long run government will spend whatever the tax system will raise, plus as much more as it can get away with."[12]

<u>High government spending does not strengthen the economy</u>

Despite the downsides to trying to close the deficit through higher taxes, one might reject cuts in government expenditures if a large government sector is vital to having a dynamic, prosperous economy. But that is decidedly not the case.

There is little doubt that a limited set of government activities adds value to an economy. Two of the most important functions are national defense and the rule of law. National defense is a classic example of a public good that can only be financed by government because it is available to everyone regardless of whether they pay for it. The government must also provide a stable and reasonable legal system if an economy is to flourish because work, saving, investment, business activity, and production would plummet without legally enforceable contracts and secure property rights. In addition, some government transfer payments are desirable to protect the truly needy. However, a federal, state, and local government system of no more than 15%-20% of GDP could adequately provide all core government services. NIPA data indicate this country's government sector (federal, state, and local) was about twice that size in both 2009 and 2010.[13] Hence, the question raised here is not whether an economy benefits from some government services (it does), but whether it would damage the economy to trim government spending back to where it was before the recession.

A shift of productive resources away from government control and back to the private sector would increase, not reduce, GDP and employment. The government, which is motivated largely by political considerations, does not produce goods and services more efficiently, or better gauge and respond to what people want and need, than the private-sector, which is motivated by profits and disciplined by competition in the marketplace. Experience in this and other countries shows conclusively that the private sector is more efficient and responsive than the government. Governments tend to be inefficient and unresponsive producers because: special interests often persuade them to employ high-cost production techniques; influential political groups often secure expensive government programs that aid the groups while shifting costs to the general population; and the

power to tax lets governments continue inefficient operations that no private-sector business could long afford. Moreover, governments frequently try forcing people to use government products through laws and regulations while private-sector business, lacking the power of coercion, must offer products so desirable that people voluntarily buy them. For these reasons, pruning back the enlarged government sector so it displaces less private-sector activity would help the economy, not hurt.

The Obama Administration has emphasized the Keynesian theory of demand management in defense of its 2009 stimulus package and continued high government spending. In the Keynesian model, government fiscal policies that try to pump up aggregate demand are an elixir for rejuvenating a weak economy, while work, saving, and investment incentives do not particularly matter.[14] The Keynesian model was popular in the 1950s and 1960s, but was discredited by the stagflation of the 1970s when inflation and unemployment both worsened, a combination that the Keynesian model predicts cannot occur. A generation later, though, many people have forgotten past lessons, and Keynesian theory is again popular.

The Administration's stimulus program was a textbook application of Keynesian economics, and the largest deliberate Keynesian experiment in history. In January 2009, when the unemployment rate was 7.8%, Obama Administration economists claimed their stimulus plan, which featured big spending increases and tax rebates, would prevent the unemployment rate from exceeding 8% and bring it down to about 7% by late 2010.[15] Congress approved a stimulus program close to the Administration's request in February 2009, but the results were disappointing. Instead of falling to the predicted 7%, the unemployment rate climbed within a year to 10.1%.[16]

Casting further doubt on the Keynesian model and its predictions, monetary policy was also extraordinarily expansionary, with the Federal Reserve increasing the monetary base several fold and pushing short-term interest rates essentially to zero. If Keynesian policies worked, the government's fiscal and monetary policies should have generated a roaring recovery. (Of course, if Keynesian policy prescriptions truly worked, countries like Greece would be economic dynamos *because* of their spendthrift ways.)

The Reagan Administration crafted its initial tax cut to improve production incentives through lower marginal tax rates; it sought to rein in government spending, reasoning that the government is often less efficient than the private sector and that government spending does not increase total demand because it reduces demand by those in the private sector who finance the government; and it endorsed a tight money policy in a successful effort to halt double-digit inflation in its tracks and usher in an era of low inflation. The recovery from that slump was much stronger than from the last recession. Consider some comparisons between the two recoveries, looking at cumulative changes over several years.

Today, 3½ years after the 2007-2009 recession's start, real GDP is only 1.3% higher than in the quarter before the recession began. That is far below the long-run trend of potential GDP. In contrast, 3½ years after the 1981-1982 recession's start, real GDP was 12.1% higher than in the quarter before the recession and had recovered to its long-run trend. (The average for all post-1950 recessions except the last was 9.1%.)[17] For the same periods, real gross private domestic investment plunged 16.8% after the 2007-2009 recession but climbed 26.7% following the 1981-1982 recession. (The average for all post-1950 recessions except the last was a 7.6% gain.)[18] Comparing the month before each recession with 3½ years later, the total number of people employed fell 4.6% after the 2007-2009 recession but rose 5.9% following the 1981-1982 recession. (The average for all post-1950 recessions except the last was a 3.9% increase.)[19] The unemployment rate is now 4.4 percentage points higher than just before the 2007-2009 recession – it is mired at 9.1% – but had declined 0.2 percentage points at a comparable time after the 1981-1982 recession. (The average for all

post-1950 recessions except the last was a 1.6 percentage points rise.)[20]

Conclusion

The federal deficit, and how to reduce it, will have an especially high profile for the next several weeks because Congress is grappling with the debt limit. The reason the debt limit needs to be raised – and by a lot – is because of record-breaking federal spending.

Some in Congress wisely see this as an opportunity to take steps to reduce the deficit, and think it would be irresponsible to try kicking our budget problems a few years down the road by raising the debt limit without other actions. The experiences of countries like Greece and Ireland today and numerous nations in the past vividly demonstrate the economic mayhem and human suffering that result when government budgets become so unbalanced that creditors lose confidence in nations' ability to service their debts. From the 4th quarter of 2007 to the 4th quarter of 2010, Greece and Ireland endured cumulative declines in real GDP of 8.5% and 14.5%, respectively,[21] and their unemployment rates are 14.1% and 14.7%, respectively.[22] If Congress acts sooner rather than later, it can reduce the odds that a full-blown debt crisis will hit the United States.

A hotly disputed question is whether the deficit should be reduced primarily through tax increases or spending restraint. This study's examination of the last recession compared to the nine other post-1950 recessions strongly supports those who favor stanching the red ink mainly through greater spending discipline.

Michael Schuyler
Senior Economist

Endnotes

1. The numbers in the introduction are from the U.S. Budget. See U.S. Office of Management and Budget, *Budget Of The United States, Historical Tables, Fiscal Year 2012*, Tables 1.2 and 7.1, accessed at http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/hist.pdf.

2. For more details, see National Bureau of Economic Research, "Information On Recessions And Recoveries, The NBER Business Cycle Dating Committee, And Related Topics," accessed at http://www.nber.org/cycles/main.html. For business cycle dates, see National Bureau of Economic Research, "US Business Cycle Expansions and Contractions," accessed at http://www.nber.org/cycles/cyclesmain.html.

3. For GDP data, see U.S. Bureau of Economic Analysis, National Income and Product Accounts, Table 1.1.5, "Gross Domestic Product," accessed via http://bea.gov/national/nipaweb/Index.asp. For data on total federal government receipts, see U.S. Bureau of Economic Analysis, National Income and Product Accounts, Table 3.2, "Federal Government Current Receipts and Expenditures," accessed via http://bea.gov/national/nipaweb/Index.asp.

4. The analyses in this paper were also performed comparing the quarter before the recession, 6 quarters later (1.5 years), and 12 quarters later (3 years). The precise numbers differ slightly from those in the text, but the findings are the same. A variation on this was to use 3-quarter averages: the average of the three quarters before each recession began, the average of the three quarters centered around the 1.5-year mark, and the average of the 3 quarters centered around the 3-year mark. Again, this affects the specific numbers but not the conclusions regarding how the 2007-2009 recession differs from previous recessions.

5. See Timothy Geithner, Treasury Secretary, Letter to House Speaker John Boehner, May 2, 2011, accessed at http://www.treasury.gov/connect/blog/Documents/FINAL%20Debt%20Limit%20Letter%2005-02-2011%20Boehner.pdf.

6. See Stephen Ohlemacher, "Nearly Half Of US Households Escape Fed Income Tax," Associated Press, April 7, 2010, accessed at http://finance.yahoo.com/news/Nearly-half-of-US-households-apf-1105567323.html?x=0.

7. For data on total federal government expenditures, see Bureau of Economic Analysis, Table 3.2, "Federal Government Current Receipts and Expenditures," *op. cit*.

8. *Ibid*.

9. Matt Cover, "Geithner: We Need 'Revenue Increases; 'Cutting Deficit by Spending Cuts Alone 'Irresponsible'," CNSnews.com, June 21, 2011, accessed at http://www.cnsnews.com/news/article/geithner-calls-revenue-increases-through.

10. See David Magee, "President Obama's Big Mistake: Suggesting An End To Business Tax Break Worth $72 Billion," International Business Times, June 27, 2011, accessed at http://www.ibtimes.com/articles/170217/20110627/lifo-president-barack-obama-budget-talks-tax-break-72-billion.htm.

11. For the data, see Organisation for Economic Co-operation and Development, "OECD Economic Outlook No. 88," Annex Tables, December 2, 2010, accessed at http://www.oecd.org/document/61/0,3746,en_2649_34109_2483901_1_1_1_1,00.html.

12. Milton Friedman, Transcript of Interview with Peter Robinson for series "Uncommon Knowledge," March 10, 2000, accessed at http://www.hoover.org/multimedia/uncommon-knowledge/26956.

13. For the underlying NIPA data, see BEA, Table 1.1.5, "Gross Domestic Product," *op. cit*.; and BEA, Table 3.1, "Government Current Receipts and Expenditures," accessed via http://bea.gov/national/nipaweb/Index.asp.

14. In Keynesian theory, tax cuts can also fortify a sluggish economy creating more demand, but less effectively than spending increases. The Keynesian model postulates that it is irrelevant how taxes affect production incentives and ignores marginal tax rates.

15. See Christina Romer and Jared Bernstein, "The Job Impact Of The American Recovery And Reinvestment Plan," Incoming Obama Administration, January 9, 2009, accessed at http://www.politico.com/static/PPM116_obamadoc.html. The macroeconomic estimates flowed from a simple Keynesian multiplier analysis. True to Keynesian thinking, the spending and rebates sought to boost aggregate demand but ignored incentives for working, saving, and investing.

16. Bureau of Labor Statistics, "Unemployment Rate - Civilian Labor Force", accessed via http://www.bls.gov/cps; and U.S. Bureau of Economic Analysis, National Income and Product Accounts, Table 1.1.1, "Percent Change From Preceding Period in Real Gross Domestic Product," accessed via http://bea.gov/national/nipaweb/ Index.asp.

17. Bureau of Economic Analysis, National Income and Product Accounts, Table 1.1.6, "Real Gross Domestic Product, Chained Dollars," accessed via http://bea.gov/national/nipaweb/Index.asp.

18. *Ibid.*

19. Bureau of Labor Statistics, "Employment Level - Civilian Labor Force," accessed via http://www.bls.gov/cps.

20. Bureau of Labor Statistics, "Unemployment Rate - Civilian Labor Force," *op. cit*.

21. Calculated from Organisation for Economic Co-operation and Development, Quarterly National Accounts, OECD National Accounts Statistics (database), http://dx.doi.org/10.1787/2074384X-2011-table14.

22. Robert J. Samuelson, "Greece's Crisis Could Torpedo Europe's Recovery," *Washington Post*, May 29, 2011, accessed at http://www.washingtonpost.com/opinions/greeces-crisis-could-torpedo-europes-recovery/2011/05/27/AG3jVNEH_story.html.
