



# Can Contractionary Fiscal Policy Be Expansionary?

**Jane G. Gravelle**

Senior Specialist in Economic Policy

**Thomas L. Hungerford**

Specialist in Public Finance

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## Summary

As Congress considers policies to foster economic growth, arguments have been made that the traditional expectations of fiscal policy, namely that cutting spending will contract the economy in the short run, should be reversed. Proponents of this view also argue that cutting spending rather than raising taxes would be a more effective means of increasing economic growth (or at least avoiding contractions). These arguments often refer to recent empirical studies of deficit reductions across countries.

This view contrasts with that held by most economists and found in conventional models. In those models cutting spending will contract the economy. Chairman Bernanke of the Federal Reserve was referring to this view when he cautioned against large and immediate spending cuts. Most multipliers (measures of the effect of deficits on the economy) indicate that spending cuts contract the economy more than do similarly sized tax increases.

Just as economists generally consider spending cuts to be contractionary in the short run in an underemployed economy, they believe that deficits can be harmful in the long run by crowding out private investment. There is considerable agreement that the continuation of current tax and spending policies will lead to an unsustainable path of the national debt, largely because of the growth of mandates arising from the aging of the population and the growth in health care costs. Thus, to most economists current macroeconomic policy challenges involve a trade-off between the benefits of starting to address the debt problem earlier versus risking damage to a still-fragile economy by engaging in contractionary fiscal policy, or failure to continue with expansionary fiscal policy.

Alesina and Ardagna, in the study perhaps most commonly cited to support the view that cutting spending will not be contractionary, find that historical episodes across 21 countries when debt reduction was associated with growth used spending cuts rather than tax increases. Other studies that largely perform the same analysis find similar results. This research has been interpreted as suggesting that spending cuts are superior to tax increases and that such cuts would not necessarily contract the economy. Proponents of this view, to support these empirical findings with theory, argue that deficit reduction will increase confidence of consumers and business, resulting in increased current spending on consumption and investment.

The International Monetary Fund, however, correcting problems they perceived in the Alesina and Ardagna study, found spending cuts to be contractionary, consistent with mainstream views. Moreover, while the IMF found cuts in spending to have smaller effects than tax increases, those effects were generally ascribed to offsetting monetary policy which was more significant with spending cuts than tax increases.

The findings in the Alesina and Ardagna study that successful debt reductions were associated with higher growth when spending cuts were used was based on 9 observations out of 107 instances of deficit reduction, or less than 10% of the sample. In addition, most of the countries where debt reductions were successful were at or close to full employment, while the United States remains well below full employment, raising questions as to whether this evidence is applicable to current U.S. conditions. Thus, both methodological questions and questions of applicability to current circumstances can be raised for the Alesina and Ardagna, and similar, studies.

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Recently, as Congress considers policies to foster economic growth, arguments have been made that some traditional expectations of fiscal policy should be revisited, namely that cutting spending will contract the economy in the short run.<sup>1</sup> Under this view, what would normally be considered contractionary fiscal policy would instead be expansionary. Proponents of this view also argue that cutting spending rather than raising taxes would be a more effective means of increasing economic growth. These arguments often refer to recent empirical studies of deficit reductions across countries.<sup>2</sup>

This view contrasts with that held by most economists, which will be referred to as “mainstream economics.” Mainstream economics relies on a basic theory regarding policies to expand the economy in a downturn. This theory can be found in economics textbooks and is used by government and private forecasters to project the path of the economy.<sup>3</sup> This view has been the basis for fiscal and monetary policy interventions to stimulate the economy for many years, under both Republican and Democratic administrations. Chairman Bernanke of the Federal Reserve was referring to this view when he cautioned against large and immediate spending cuts.<sup>4</sup> The basic thrust of the model for fiscal policy is that increasing the deficit (whether by increasing spending or cutting taxes) expands an underemployed economy, and decreasing the deficit (cutting spending or raising taxes) contracts it.

Just as economists generally consider spending cuts to be contractionary in the short run in an underemployed economy, they believe that deficits can be harmful in the long run by crowding out private investment. There is widespread agreement that the continuation of current tax and spending policies will lead to an unsustainable path of the national debt. The fundamental cause of these long-run problems predates the Great Recession and the increase in debt relative to GDP from that recession, and arises from the aging of the population and the growth in health care costs.

Thus, to most economists, the policy challenge is a trade-off between the benefits of starting to address the debt problem earlier versus risking damage to a still-fragile economy by engaging in contractionary fiscal policy, or failure to continue with expansionary fiscal policy. Although the unemployment rate has been falling, it remains high,<sup>5</sup> and the growth rate, while strong in the fourth quarter of 2010, slowed to 1.8% in the first quarter of 2011.<sup>6</sup>

This report begins with an overview of this mainstream theory. The next section of the report then examines the evidence that has been used to challenge this theory.

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<sup>1</sup> Such claims were also made during the recession in the early 1980s, although not by academics as much as by the popular press. These arguments were made without the references to cross country studies of deficit reduction that proponents now point to. An archived CRS report on this issue is available upon request: CRS Report 83-156, *Large and Continuing Deficits: Their Influence on Macroeconomic Performance*, by Thomas Woodward, August 1, 1983.

<sup>2</sup> See, for example, the testimony of several witnesses at hearings on impediments to job creation, Ways and Means Committee, March 30, 2011. See <http://waysandmeans.house.gov/Calendar/EventSingle.aspx?EventID=230460>.

<sup>3</sup> See N. Gregory Mankiw, “The New Keynesian Synthesis,” *The Concise Encyclopedia of Economics*, <http://www.econlib.org/library/Enc/NewKeynesianEconomics.html>.

<sup>4</sup> Bernanke Warns Against Steep Budget Cuts. *Reuters*, February 9, 2011, <http://www.reuters.com/article/2011/02/09/us-usa-fed-idUSTRE7183J220110209>.

<sup>5</sup> The rate for May was 9.1%, Bureau of Labor Statistics, up from 9% in April and 8.8% in March. Employment grew slightly so that the increase in the unemployment rate reflected the expansion of the labor force: <http://www.bls.gov/news.release/pdf/empisit.pdf>.

<sup>6</sup> Bureau of Economic Analysis, <http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm>.

## How Fiscal Policy Works

Current fiscal policy theories began with a work published during the Great Depression by British economist John Maynard Keynes.<sup>7</sup> As a result, this type of policy is often referred to as Keynesian, although there have been numerous refinements and developments in the theory. These developments include, among others, the standard model (referred to as IS-LM<sup>8</sup>) that includes both monetary and fiscal policy, the refinement of the tradeoff between inflation and unemployment, leading to the notion of a natural rate of unemployment (where policies tend to affect price rather than output), the incorporation of expectations, and modifications for an open economy (where goods and capital flow across borders).

Some commentators contrast Keynesian economics with neoclassical economics. Neoclassical economics originated in the late 19<sup>th</sup> century and theorizes that output and prices adjust to forces of supply and demand. Supply and demand are, in turn, driven by decisions made by economic agents (consumers, workers, and producers) who maximize their welfare. Most economists have both neoclassical and Keynesian-style views, one applied largely to questions of microeconomics and the other to questions of macroeconomics. Since World War II, government policy to address business cycles has generally been guided by some form of Keynesian theory.

The fundamental concept behind this view of macroeconomics and fiscal policy is that prices in an economy do not immediately adjust to shocks, which can lead to unemployment of resources. Workers may become unemployed and capital may sit idle, due to a lack of sufficient demand. To reduce unemployment, expansionary fiscal policy (an increase in spending or a reduction in taxes to expand aggregate demand) can be employed.

The magnitude of the effects of fiscal policy is measured by a multiplier. If the government spends a dollar, then someone in the economy receives a dollar. Part of that dollar might be saved and part might be spent; to the extent that it is spent, it increases aggregate demand in a second round. The recipients of that second round of spending will in turn spend part of their receipts. There are multiple rounds of spending, each diminishing a bit because part is saved, and the sum of all these rounds defines the multiplier.<sup>9</sup> As demand increases, businesses hire additional workers and purchase more capital goods to satisfy demand.

The strength of the multiplier depends not only on the share that is spent in the initial and subsequent rounds but also on the effect on interest rates and prices. As demand increases it

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<sup>7</sup> John Maynard Keynes, *The General Theory of Employment, Interest and Money*, published in 1936.

<sup>8</sup> The IS equation traces out the equilibrium between output and interest rates in the economy based on the relationship between investment and savings; the lower the interest rate the larger the amount of output. The LM curve traces out a relationship between output and interest rates based on the demand and supply of money and is upward sloping with output rising as interest rates rise (because higher interest rates cause smaller holdings of money and free up money to support transactions). The IS curve is shifted with fiscal policy and the LM curve with monetary policy. Where they intersect determines the level of aggregate demand at any given price level and where that curve intersects with the supply curve determines price and output in the economy.

<sup>9</sup> Saving rates in the economy rose during the recession from around 2% to 6% (personal savings rate), presumably in part due to the loss in asset values. The rate has since declined to about 5%, but these rates are similar to the levels in the early and mid-1990s and lower than in most periods since 1960. Thus, although savings rates have increased, they do not indicate fiscal multipliers are small by historical standards. Private savings rates (which include business saving) rose from around 4% to 8% (according to the National Income and Product Accounts), and have not turned down, but this rate is also not high by historical standards.

places upward pressure on interest rates, reducing private sector spending on investment and consumer durables, and also, in an open economy, attracting capital flows into the United States, appreciating currency, and reducing net exports. When the economy is at full employment or close to full employment, the effects of a stimulus are more likely to lead to price increases rather than real output growth.<sup>10</sup> In this case, the deficit spending crowds out investment and net exports. Thus, even for a particular type of spending or tax cut its short run effects are likely smaller at higher interest rates, smaller for small open economies with a large trade sector and flexible exchange rates, and smaller for economies at or close to full employment.<sup>11</sup> Under current circumstances, there is little indication that deficits have significantly crowded out investment or exports, since interest rates have remained extremely low. They are also not likely to have led to price increases given significant unemployment in the U.S. economy and low inflation rates.

The estimated size of the fiscal multiplier also depends on assumptions about monetary policy and its response to a fiscal stimulus. One might think of a neutral monetary response as one that permits the fiscal stimulus to increase interest rates, output, and prices (in the context of the IS-LM model, equivalent to keeping money supply fixed). The monetary authorities may, at one extreme, keep the interest rate fixed, which will enhance the fiscal stimulus, or, at the other, keep prices fixed, which will offset the fiscal stimulus. In the recent recession, both interest rates and inflation remain low. In a fully employed economy, fiscal stimulus will not affect output, but rather the composition of output. Without an offsetting change in the nominal money supply, prices will rise to reduce the real value of money. Alternatively, the money supply can be contracted to be consistent with total output without a price increase.

As indicated in **Figure 1**, which plots growth rates since 1821, the post-World War II period has been characterized by much more moderate business cycles (to the right of the vertical line), and limited instances of negative growth, as compared to those occurring in the latter half of the 19<sup>th</sup> century and the first half of the 20<sup>th</sup> century. (Note, however, that data for earlier years is less reliable.) Moreover, it is generally agreed one of the more significant contractions, in the early 1980s, was deliberately brought about by restrictive monetary policy (which may, however, have been more restrictive than initially planned). Along with the practice of countercyclical monetary and fiscal policy (or at least an understanding of what policies could make things worse, as they had in the past), business cycles may have been moderated by deposit insurance, automatic stabilizers (transfer and tax systems that automatically increase the deficit during downturns), and the expectation that the government will counter business cycles, which may help to reduce panics in the first place, though some believe they may also increase the risk of speculative bubbles.<sup>12</sup>

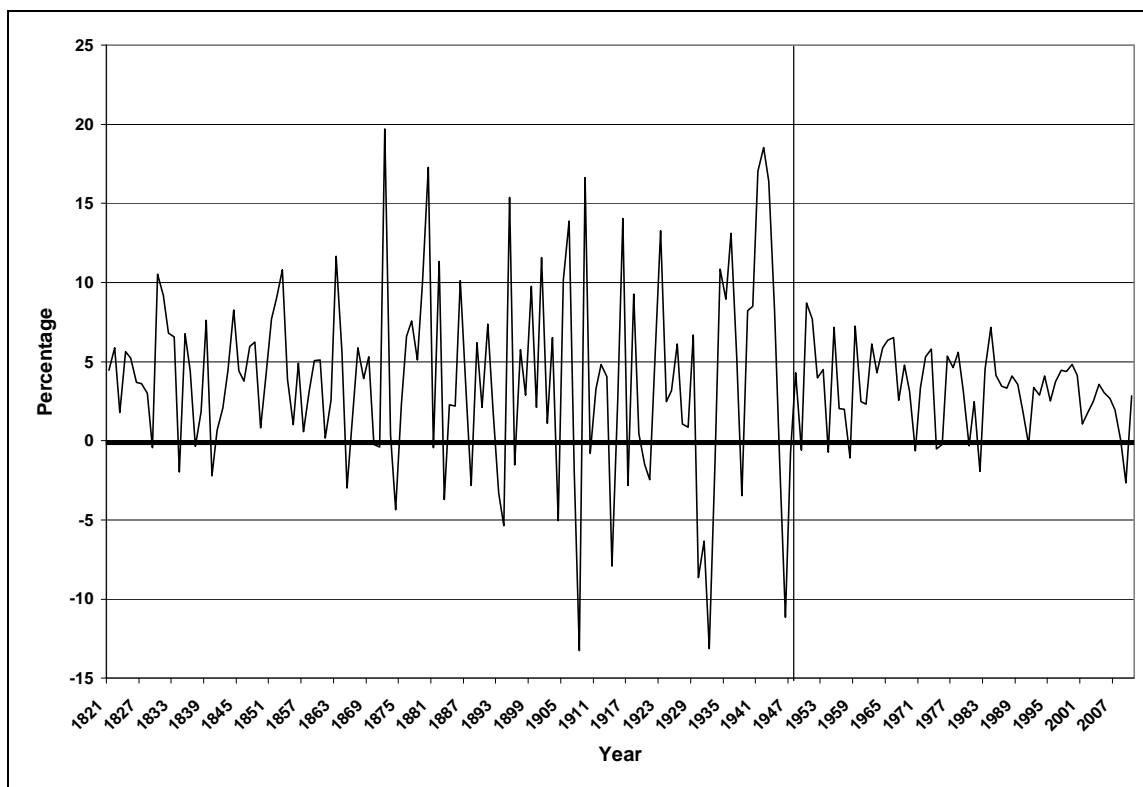
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<sup>10</sup> One can think of the supply curve (output rises with prices) as being relatively horizontal in an underemployed economy (a shift in the demand curve can increase output without affecting prices very much) and curving and becoming relatively vertical in a full employed economy (a shift in the demand curve largely increases prices without affecting output).

<sup>11</sup> These effects could reduce the stimulus (theoretically to zero), but would not cause a stimulus to be contractionary. These offsetting effects only occur in response to the initial shift in demand from the stimulus.

<sup>12</sup> The period beginning in the mid 1980s up to the most recent recession experienced even less variation in growth and is sometimes referred to as the “Great Moderation.” This greater stability has been ascribed to improved monetary policy, changes in the structure of the economy, and luck. See *The Great Moderation*, Remarks by Governor Ben S. Bernanke, Federal Reserve, Meetings of the Eastern Economic Association, Washington, DC, February 20, 2004, <http://www.federalreserve.gov/boarddocs/speeches/2004/20040220/default.htm>. Although the recent recession departed from this pattern, it is of a magnitude similar to the second half of the 20<sup>th</sup> century rather than earlier periods.

Figure I. Percentage Change in Real Gross Domestic Product, 1821-2010



**Source:** Bureau of Economic Analysis and *Historical Statistics of the United States*, Millennial Edition (Cambridge: Cambridge University Press, 2006).

Some debates have centered on whether fiscal or monetary policy (or both) should be used as tools of discretionary policy. Both are susceptible to policy lags. Some economists came to believe that political lags made fiscal policy ill-timed, while monetary policy could be enacted quickly.<sup>13</sup> Others became less enamored of fiscal policy because it becomes somewhat less effective in an open economy. At the same time, there are circumstances where traditional monetary policy does not work well (at very low interest rates, for example) or where a contraction appears to be serious enough to warrant both monetary and fiscal measures. During the 2007 - 2009 Great Recession there was broad bipartisan agreement that fiscal stimulus should be used, as it was in both the Bush and Obama Administrations.

The textbook consensus is that spending increases are more effective than tax cuts, because the full amount of the initial increase is actually spent, while some of a tax cut is initially saved. Spending in the form of transfers could also be partially saved, although it is believed that most transfers benefit lower-income recipients who are likely to spend all or most of the transfer. Different types of tax or spending policies may also have different effects depending on the portion initially saved.<sup>14</sup> At the same time, much federal government spending is funneled

<sup>13</sup> Monetary policy lags are commonly thought to be six to eight quarters and monetary policy is generally considered the blunter tool.

<sup>14</sup> CRS Report R41676, *The Effect of Unemployment Insurance on the Economy and the Labor Market*, by Thomas L. Hungerford; CRS Report RS22790, *Tax Cuts for Short-Run Economic Stimulus: Recent Experiences*, coordinated by Jane G. Gravelle; CRS Report RS21136, *Government Spending or Tax Reduction: Which Might Add More Stimulus to* (continued...)

through the states and a portion of spending in the form of grants to states could also be saved. The spending funneled through the states could include both government purchases of goods and services or transfers.

**Table 1** shows a list of multipliers provided by a major private forecaster during mid-2008. It illustrates the different multipliers embedded in his forecasting model. Consistent with the theory above, the spending multipliers in this model are larger than tax cut multipliers. Among tax cuts, those that are likely to go to middle- and lower-income individuals (notably a refundable tax credit) have larger effects than those going to higher-income taxpayers (such as the alternative minimum tax or taxes on dividends or capital gains). This difference reflects different propensities to save: higher-income individuals tend to save more and cutting their taxes increases demand less per dollar of tax cut. The multipliers also indicate that tax cuts for businesses (such as accelerated depreciation and rate cuts) are less effective, again because they are unlikely to induce spending. These differential effects are consistent with the fundamental notion that the short-run problem is lack of demand and increased deficits are most effective when they induce spending.

**Table 1. Estimates of One-Year Multiplier Effect for Various Policy Proposals Contained Within Zandi's Economic Forecasting Model, 2008**

<b>Policy Proposal</b>	<b>One-year change in real GDP for a given policy change per dollar</b>
<b>Tax Provisions</b>	
Non-refundable rebate	1.02
Refundable rebate	1.26
Payroll tax holiday	1.29
Across the board tax cut	1.03
Accelerated depreciation	0.27
Extend alternative minimum tax patch	0.48
Make income tax cuts expiring in 2010 permanent	0.29
Make expiring dividend and capital gains tax cuts permanent	0.37
Reduce corporate tax rates	0.30
<b>Spending Provisions</b>	
Extend unemployment compensation benefits	1.64
Temporary increase in food stamps	1.73
Revenue transfers to state governments	1.36
Increase infrastructure spending	1.59

**Source:** Mark Zandi, Moody's Economy.com, 2008, [http://www.economy.com/mark-zandi/documents/Small%20Business\\_7\\_24\\_08.pdf](http://www.economy.com/mark-zandi/documents/Small%20Business_7_24_08.pdf).

(...continued)

*the Economy?*, by Marc Labonte; CRS Report R41034, *Business Investment and Employment Tax Incentives to Stimulate the Economy*, by Thomas L. Hungerford and Jane G. Gravelle; CRS Report RS21126, *Tax Cuts and Economic Stimulus: How Effective Are the Alternatives?*, by Jane G. Gravelle,



**Table 2** shows a range of multipliers in a Congressional Budget Office document released in 2010. The range is intended to encompass the views of most economists on the magnitude of multipliers. They show a similar pattern to those in **Table 1**, although the estimates, especially at the bottom of the range, are considerably smaller. In general, spending increases have a larger effect than tax cuts, and tax cuts directed to lower- and middle-income taxpayers have larger effects than those directed at high-income individuals or business investment.

**Table 2. Five-Year Multiplier Ranges, Congressional Budget Office, 2010**

Policy	Low	High
<b>Tax Provisions</b>		
Refundable Tax Credits*	0.3	0.9
Reducing Employer Payroll Taxes	0.4	1.2
Reducing Employee Payroll Taxes	0.3	0.9
Extend Minimum Tax Exemption*	0.1	0.4
Reducing Income Taxes in 2011*	0.1	0.4
Partial or Full Expensing of Investment	0.2	1.0
<b>Spending Provisions</b>		
Increasing Aid to the Unemployed	0.7	1.9
Providing Aid to States for Purposes Other Than Infrastructure*	0.4	1.1
Investing in Infrastructure*	0.5	1.2

**Source:** Congressional Budget Office, Policies for Increasing Economic Growth and Employment in 2010 and 2011, January 2010. <http://www.cbo.gov/ftpdocs/108xx/doc10803/01-14-Employment.pdf>.

**Notes:** Five year effects on output; items with asterisks would have main effects beginning in 2011, items without asterisks would have main effects beginnings in 2010.

The Congressional Budget Office also provides multipliers for the first quarter of 2011 for specific provisions of the stimulus enacted in February 2009 (P.L. 111-5) as the latest in a series of reports on the effect of the legislation.<sup>15</sup> Their estimates indicated multipliers of 1.0 to 2.5 for government spending and transfers to the states for infrastructure, and 0.7 to 1.8 for transfers to the states for other purposes. For direct transfers to individuals (who have low incomes) the multipliers were between 0.8 and 2.1. Payments to retirees (largely Social Security beneficiaries) were 0.3 to 1.0. For taxes, tax cuts for lower- and middle-income taxpayers (mainly those claiming the making work pay tax credit) were 0.6 to 1.5, while the increase in the alternative minimum tax exemption for higher-income individuals was 0.2 to 0.6. Business tax cuts, mostly of a cash flow nature, were 0.0 to 0.4. These multipliers are consistent in general direction with those listed in **Table 1** and **Table 2**: larger for spending and larger for transfers and tax cuts for lower-income individuals than for higher-income ones. The report also shows the estimated impact on unemployment (at its peak in the third quarter of 2010, reducing the unemployment rate between 0.8 and 2.0 percentage points) and other variables on a quarter-by-quarter basis.

<sup>15</sup> Congressional Budget Office, Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output from January 2011 through March 2011, May 2011, <http://www.cbo.gov/doc.cfm?index=12185>.

## Theoretical Explanations for Reversing the Effects of Fiscal Policy

The current arguments for expecting spending cuts to stimulate demand appeal to empirical observations. The proponents also offer an explanation of how their interpretation of these empirical findings could be correct despite their apparent contradiction with conventional theory.<sup>16</sup> If agents in the economy believe that reducing the deficit reduces the likelihood of more costly adjustments in the future, such as possible disruptions associated with a fiscal crisis, they expect their future income to be larger and have increased confidence to spend in the present. Proponents also argue that in some countries, where default on the government debt is seen as possible, deficit reduction may lead to a reduction in risk premiums built into interest rates, thus increasing demand and perhaps inducing asset price increases. With current interest rates low in the United States, this second channel of effect seems unlikely to occur in the short run.

Another argument that has been made, although not in close association with the empirical research, is that companies fear rising taxes in the future, which depresses investment. Alternatively, arguments are made that the deficit is directly crowding out investment.<sup>17</sup> This argument contrasts with the mainstream view that business investment in cyclical downturns is heavily affected by current demand (this effect is called the accelerator), as well as being affected by interest rates, and signs of crowding out would be reflected in rising interest rates.<sup>18</sup>

Note that for the increase in expected future income to transform a contractionary fiscal policy into an expansionary one in the short-run, these results arising from expectations must not only arise but also be large enough to overwhelm the normal channels of contraction. Also, when the contraction involves government spending cuts that lead directly to a decrease in government employment, the demand effects must overcome this direct effect on unemployment.

## Review of the Empirical Evidence Cited for a Different View

Several studies have examined the short run effects of fiscal consolidation or adjustments (that is, spending reductions and/or tax increases) on government debt and the economy. Two widely cited studies are discussed. The critical part of each analysis is the identification of discretionary fiscal policy. Government spending, tax revenue, and the budget deficit can change due to automatic stabilizers that react to economic changes or to discretionary (often legislated) changes. Typically transfer payments (e.g., unemployment compensation) increase and tax revenue decreases automatically when the economy enters a recession and, consequently, budget deficits increase. The reverse is true when the economy recovers. Two methods have typically been used to identify

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<sup>16</sup> See Alberto Alesina and Silvia Ardagna, "Large Changes in Fiscal Policy: Taxes versus Spending," in *Tax Policy and the Economy*, ed. Jeffrey R. Brown, vol. 24 (Chicago: University of Chicago Press, 2010), pp. 35-68.

<sup>17</sup> Neil Irwin, "Pain Level for Cuts in Dispute," *Washington Post*, May 25, 2011.

<sup>18</sup> It is also not clear from this argument why current investment should be so heavily affected by expectations of future conditions, since there are continual opportunities to adjust the capital stock through changes in gross investment.

discretionary fiscal changes: (1) use of cyclically adjusted fiscal variables, and (2) the action-based approach.

Most studies use cyclically adjusted fiscal variables to separate fluctuations due to the business cycle from those that are discretionary. The method used by Alberto Alesina and Silvia Ardagna was first proposed by Olivier Blanchard and has been described as simple and transparent.<sup>19</sup> The cyclically adjusted variable is the estimated value of the variable that would have prevailed had the unemployment rate been the same as in the previous year. The adjustment only requires the value of the unemployment rate in the previous year and the elasticity (how the fiscal variable changes when the unemployment rate changes).

Although this method is simple and transparent, it also has some limitations. First, the method assumes that the elasticities are constant over time (and the business cycle). Evidence suggests that the elasticities are not constant over time and may behave asymmetrically over the business cycle—changes in the elasticity may be different as the economy enters a recession than when it comes out of a recession.<sup>20</sup> Second, the International Monetary Fund (IMF) notes that the method may suffer from measurement errors that are correlated with economic developments unrelated with the unemployment rate, such as asset price booms and busts.<sup>21</sup> Lastly, the IMF further argues that the method “ignores the motivation behind fiscal actions.”<sup>22</sup> It is, therefore, possible that some identified instances of discretionary fiscal policy changes bear no relation to actual fiscal policy changes.

The action-based approach to fiscal adjustment involves identifying specific policy actions to reduce budget deficits. The IMF, for example, examined various OECD, IMF, and country-specific sources to identify discretionary and deliberate fiscal policy actions. Christina Romer and David Romer compare the cyclical adjustment and action-based methods for the United States and find that while action-based changes show up as cyclically adjusted changes, there is substantial variation in cyclically adjusted changes that are not in the action-based changes.<sup>23</sup> They conclude that “non-legislated factors are an important source of movements in cyclically adjusted measures.”<sup>24</sup>

## The Alesina and Ardagna Study

The study by Alberto Alesina and Silvia Ardagna examines fiscal adjustments using a panel of 21 OECD countries from 1970 to 2007.<sup>25</sup> They use the cyclical adjustment method to separate automatic fiscal changes from discretionary policy driven changes. They define a fiscal

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<sup>19</sup> Olivier J. Blanchard, *Suggestions for a New Set of Fiscal Indicators*, Organization for Economic Cooperation and Development, OECD Economics Department Working Papers, No. 79, Paris, April 1990.

<sup>20</sup> Guido Wolswijk, *Short- and Long-run Tax Elasticities: The Case of the Netherlands*, European Central Bank, Working Paper Series, No. 763, June 2007.

<sup>21</sup> International Monetary Fund, “Will It Hurt? Macroeconomic Effects of Fiscal Consolidation,” in *World Economic Outlook* (Washington: International Monetary Fund, 2010), p. 96.

<sup>22</sup> *Ibid.*

<sup>23</sup> Christina D. Romer and David H. Romer, “The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks,” *American Economic Review*, vol. 100, no. 3 (June 2010), pp. 763-801.

<sup>24</sup> *Ibid.*, p. 780.

<sup>25</sup> Alberto Alesina and Silvia Ardagna, “Large Changes in Fiscal Policy: Taxes versus Spending,” in *Tax Policy and the Economy*, ed. Jeffrey R. Brown, vol. 24 (Chicago: University of Chicago Press, 2010), pp. 35-68.

adjustment as an improvement (i.e., decrease) in the cyclically adjusted primary balance of at least 1.5% of gross domestic product (GDP).<sup>26</sup> Using this definition, they identify 107 episodes of fiscal adjustments. An expansionary fiscal adjustment is defined as an episode of fiscal adjustment in which the increase in the GDP growth rate is greater than the value at the 75<sup>th</sup> percentile for all episodes of fiscal adjustment (26 episodes of fiscal adjustment—about 25% of the episodes of fiscal adjustment). They define a successful fiscal adjustment as one in which the three-year cumulative reduction in the debt-to-GDP ratio is greater than 4.5 percentage points, which selects 21 episodes of successful fiscal adjustment (about 21% of the total). Only nine episodes of fiscal adjustment were expansionary and successful (about 8% of the total).

Alesina and Ardagna find that primary spending (total expenditures minus interest payments) declines by about 2% of GDP and government revenues fall by about 0.5% of GDP in successful fiscal adjustments. Primary spending falls by 0.7% of GDP and revenue increases by 1.4% of GDP in unsuccessful fiscal adjustments. According to their tabular analysis, however, economic growth improves during both successful and unsuccessful fiscal adjustments.

They generally find that tax decreases are more likely to stimulate economic growth than spending increases. They conclude that “successful fiscal adjustments are completely based on spending cuts accompanied by modest tax cuts” and suggest that their results are relevant to the current U.S. fiscal situation (high debt-to-GDP ratio).<sup>27</sup> Two other recent studies replicate the work of Alesina and Ardagna and reach the same conclusions.<sup>28</sup>

The authors also indicate that the nine episodes in which deficit reduction was associated with economic expansions rather than recessions involved spending cuts, which leads them to conclude that adjustments on the spending side are less likely to create recessions. Both this finding and their identification of the 26 episodes of debt reduction (which have simply been identified as being the top quarter of the growth distribution) have been pointed to as evidence that cutting spending in the United States will be expansionary rather than contractionary.<sup>29</sup>

These views, some explicitly in the study and some interpreting the study, are generally inconsistent with the mainstream view of fiscal policy where short-term multipliers for spending decreases are negative and also tend to be larger in absolute value than those for tax cuts.

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<sup>26</sup> The primary balance is non-interest government expenditures minus government revenues. Interest payments are omitted because changes in the interest rate could lead to large changes in interest payments independent of policy changes.

<sup>27</sup> Alberto Alesina and Silvia Ardagna, “Large Changes in Fiscal Policy: Taxes versus Spending,” in *Tax Policy and the Economy*, ed. Jeffrey R. Brown, vol. 24 (Chicago: University of Chicago Press, 2010), p. 50.

<sup>28</sup> Andrew G. Biggs, Kevin A. Hassett, and Matthew Jensen, *A Guide for Deficit Reduction in the United States Based on Historical Consolidations That Worked*, American Enterprise Institute, Working Paper 2010-04, Washington, December 27, 2010, <http://www.aei.org/paper/100179>; and Ben Broadbent and Kevin Daly, *Limiting the Fall-out from Fiscal Adjustment*, Goldman Sachs, Global Economics Paper N. 195, London, April 14, 2010, <http://www2.goldmansachs.com/ideas/global-economic-outlook/limiting-the-fallout-doc.pdf>; Neil Irwin, “Pain Level for Cuts in Dispute,” *Washington Post*, May 25, 2011; and Glenn Hubbard, “Forget the Debt Ceiling and Focus on the Debt,” *Financial Times*, May 27, 2011.

<sup>29</sup> See discussions by Paul Krugman of these arguments, in “Contraction is Contractionary,” *New York Times*, March 29, 2011, <http://krugman.blogs.nytimes.com/2011/03/29/contraction-is-contractionary/>, see also Tim Fernholz and Jim Tankersley, “GOP Prescription: Spending Cuts and Lower Wages Equal More Jobs,” *National Journal*, March 25, 2011, <http://www.nationaljournal.com/economy/gop-prescription-spending-cuts-and-lower-wages-equal-more-jobs-20110325>; Statement of Andrew Biggs before the Committee on Ways and Means, March 30, 2011, <http://waysandmeans.house.gov/Calendar/EventSingle.aspx?EventID=230460>.

## The International Monetary Fund (IMF) Study

The IMF study examines the same types of contractions as those in the Alesina and Ardagna study, but with a different methodology. Rather than identifying episodes based on swings in the cyclically adjusted primary deficit, they identify them by policy-maker intent.<sup>30</sup> They also do not restrict the changes to sustained (multiyear) deficit reductions. They suggest that the choices made by Alesina and Ardagna, as well as others, bias the results away from contractionary effects. For example, countries that embark on a deficit reduction program are more likely to continue with the plan if negative outcomes are not occurring. Thus, focusing on sustained deficit reductions tends to select instances where growth occurs.

The IMF results are consistent with the mainstream view of fiscal policy. They find that deficit reduction has a contractionary effect on output, with deficit reduction equal to 1% of GDP reducing output by 0.5% of GDP and the unemployment rate by about 0.3 percentage points. These results are usually softened by offsetting monetary policy that reduces interest rates. They also find that a decline in the value of the currency has a cushioning effect, by increasing net exports.

They find that spending cuts are less contractionary than tax increases, but attribute this effect in part to the greater offsetting monetary stimulus. They also note that monetary stimulus is especially limited when increases in indirect taxes (such as the value added tax) occur because of the pressure on prices. They find that deficit reduction in countries with a high default risk on debt tend to be less contractionary than in other countries, but even in these cases expansionary effects are unusual.

## Applicability of the Empirical Evidence in Alesina and Ardagna to Current U.S. Conditions

Some recent analyses have questioned the applicability of Alesina and Ardagna's findings to the current U.S. fiscal situation.<sup>31</sup> Most of the fiscal adjustments in advanced economies identified by Alesina and Ardagna were neither successful nor expansionary. Furthermore, most of their successful fiscal adjustments took place during fairly favorable economic conditions, which is illustrated in **Figure 2**. The figure displays the output gap for the year that a successful fiscal adjustment started (as defined by Alesina and Ardagna) and for the U.S.<sup>32</sup> Of the 17 successful episodes of fiscal adjustment, 10 (about 60%) occurred when actual output was above potential

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<sup>30</sup> International Monetary Fund, "Will It Hurt? Macroeconomic Effects of Fiscal Consolidation," in *World Economic Outlook* (Washington: International Monetary Fund, 2010), pp. 93-124, available at <http://www.imf.org/external/pubs/ft/weo/2010/02/pdf/c3.pdf>.

<sup>31</sup> See Dean Baker, *The Myth of Expansionary Fiscal Austerity*, Center for Economic and Policy Research, Washington, October 2010, <http://www.cepr.net/documents/publications/austerity-myth-2010-10.pdf>; and Arjun Jayadev and Mike Konczal, *The Boom Not the Slump: The Right Time for Austerity*, The Roosevelt Institute, New York, August 23, 2010, [http://www.rooseveltinstitute.org/sites/all/files/not\\_the\\_time\\_for\\_austerity.pdf](http://www.rooseveltinstitute.org/sites/all/files/not_the_time_for_austerity.pdf).

<sup>32</sup> The output gap is a measure of the underutilization of resources in the economy. Formally, it is the difference between potential output and actual output. Potential output is the level of GDP that corresponds to a high level of resource use (that is, when the capacity utilization rate is normal, the unemployment rate is equal to the natural rate of unemployment, and total factor productivity is at its trend value). The output gap is expressed as a percentage of potential output. It is negative when resources are underutilized. See Paula R. DeMasi, *IMF Estimates of Potential Output: Theory and Practice*, International Monetary Fund, Working Paper 97-177, Washington, December 1997.

output—resources were fully employed.<sup>33</sup> Seven of the successes occurred when the output gap was negative, though most were only slightly negative. In comparison, the output gap for the U.S. in 2009 was about -6% of potential output and is projected to be almost -4% of potential output in 2011. The Congressional Budget Office (CBO) projects that the output gap will remain below -3% until 2013—well outside the range of output gaps of successful fiscal adjustments.<sup>34</sup>

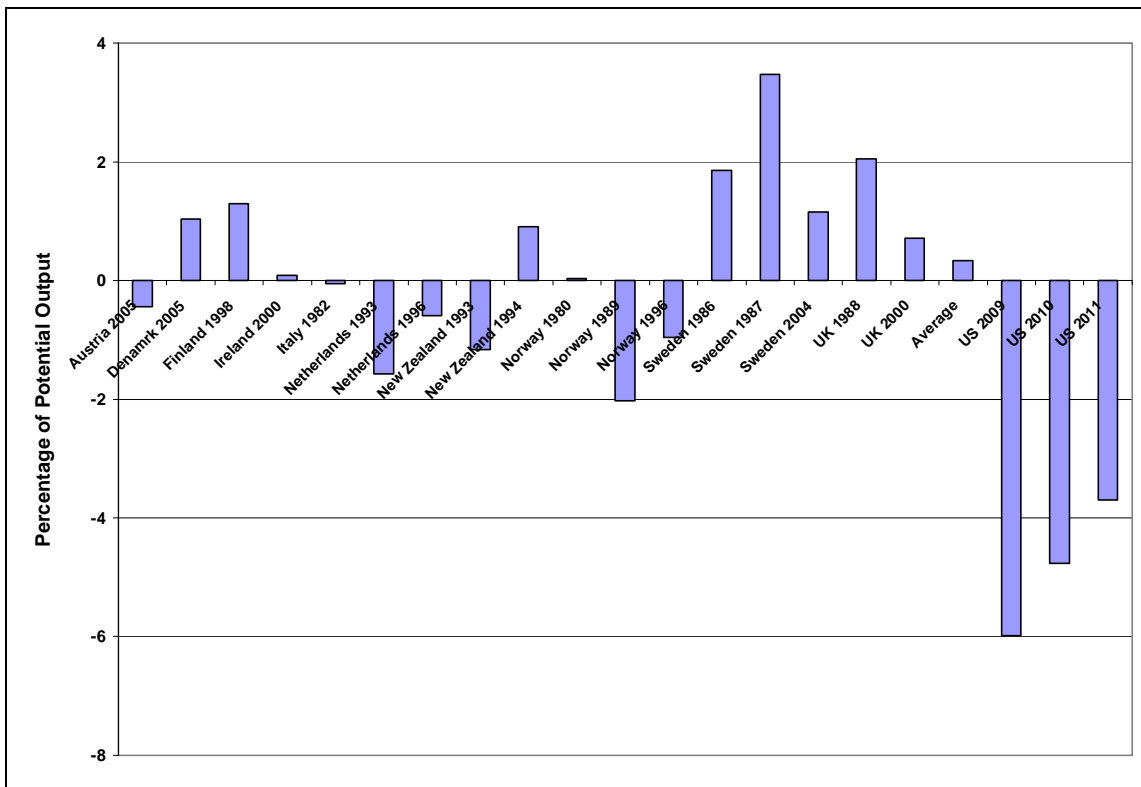
The next figure, **Figure 3**, compares the projected 2011 U.S. output gap with the average output gaps for successful and unsuccessful fiscal adjustments (as defined by Alesina and Ardagna). The output gap is shown for the year that the fiscal adjustment began (Period T) and for the year before it began (Period T-1). On average, the output gaps for successful fiscal adjustments were positive (+0.34% of potential output) in the year the adjustment began and slightly negative (-0.30% of potential output) the year before. The average output was negative in the year the adjustment began as well as the year before for all unsuccessful fiscal adjustments (see the bars labeled “all unsuccessful” in the figure). The bars labeled “below potential” focus on the unsuccessful fiscal adjustments that began when actual output was below potential output. On average, the output gap was less than -2% of potential output in the year the adjustment began and the year before. The output gap for the United States is projected to be -3.7% of potential output in 2011 and was almost -5% of potential output in 2010 (see the bar labeled U.S. 2011 under period T-1 in **Figure 3**).

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<sup>33</sup> Estimates of potential output are only available after 1980, consequently, four of Alesina and Ardagna’s observations of successful fiscal adjustments occurring before 1980 are omitted.

<sup>34</sup> Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2011 to 2021*, January 2011.

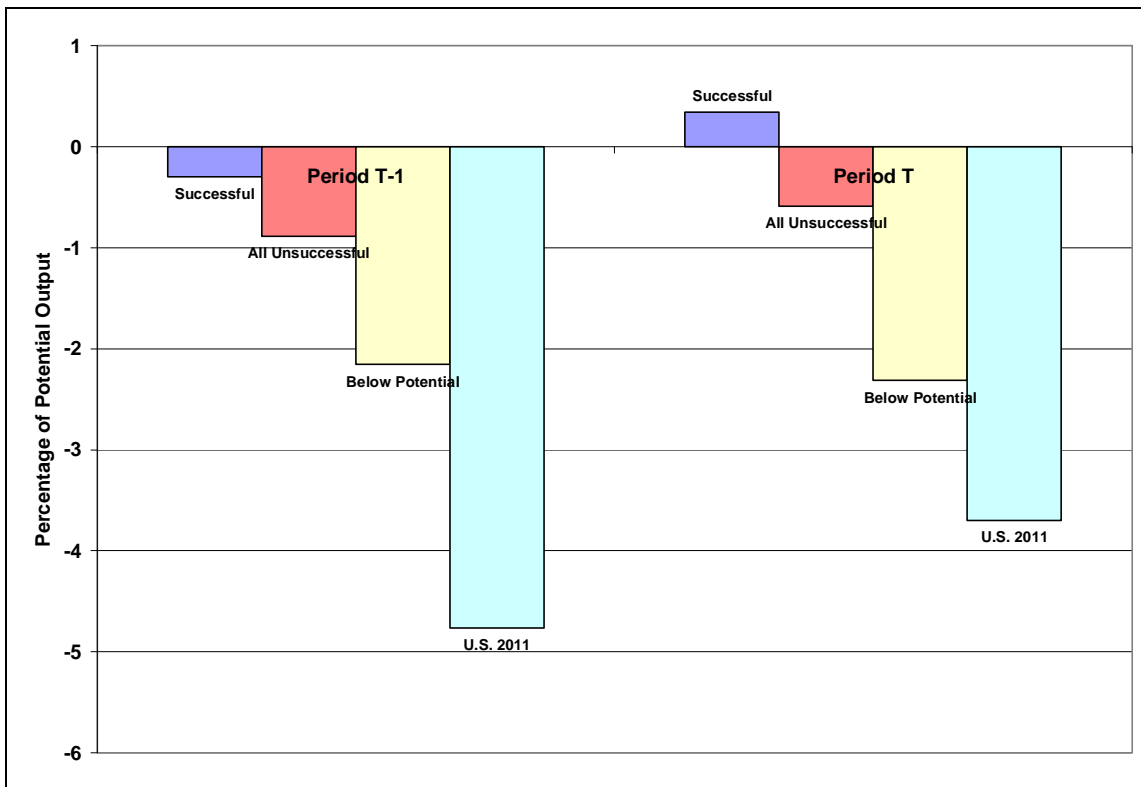
**Figure 2. Output Gap During Successful Fiscal Adjustments Compared to Recent U.S. Experience**



Source: IMF, World Economic Outlook 2011 database.

The results suggest that successful fiscal adjustments (as defined by the cyclical adjustment method) occurred when the economy was at or near potential output, that is, labor and capital resources were fully employed. Unsuccessful fiscal adjustments generally occurred when actual output was below potential output. The U.S. output gap for 2011 is considerably more negative than the average output gap for all unsuccessful fiscal adjustments and even those that began when actual output was below potential output. Almost nine out of ten fiscal adjustments beginning when actual output was below potential output were unsuccessful—fiscal adjustments beginning in a slack economy (such as the current situation in the U.S.) appear to have a low probability of success.

**Figure 3. Average Output Gaps for Successful and Unsuccessful Fiscal Adjustments Compared to the Current U.S. Output Gap**



Source: CRS calculations based on IMF data.

## Long-Run Consequences of Budget Deficits

The discussion in the previous section relates to short-run effects. Long-term policy regarding budget deficits, their effects, and methods of addressing them raise different issues. The focus turns to the supply side of the economy, the rate of growth of potential output, the distributional implications of policy, and the desirability of various government programs.

Short-term policy focuses on job creation. Economic theory, however, suggests that there is no reason to view general job creation as a long-run objective of government policies. The economy can generate the jobs needed by the natural process of growth and market adjustment. In 1961 and in 1991 the unemployment rate was the same, 6.7%. Employment, however, rose from 66 million to 117 million.<sup>35</sup> Employment tends to grow over the long run; the unemployment rate fluctuates. Long-term jobs policies, therefore, should not be aimed at increasing jobs (which at full employment will only lead to inflation), although they can be designed to reduce structural or frictional unemployment (such as improving the skills of disadvantaged workers).

<sup>35</sup> To use an example of market adjustment, during the 20<sup>th</sup> century there was a massive contraction in the share of employment in agriculture and accompanying growth in other types of employment. This shift in employment shares did not, however, mean that agriculture was less efficient. Indeed, it was the consequence of enormous technological progress in agriculture, through mechanization and other technical advances, that allowed fewer labor resources to be devoted to farming.



There is general agreement, however, that in the long-run, reducing the deficit will increase output, because government dissaving crowds out capital spending in a fully employed economy and slows the rate of economic growth. Some of this crowding out effect might be offset by reduced net capital inflows (arising from lower interest rates as the government's demands on capital markets decrease), but this increased private capital stock ownership, even if invested abroad, will accrue earnings and an increased standard of living to U.S. savers.<sup>36</sup>

Deficits place some of the burden of government on future generations. Deficits are not necessarily undesirable; in addition to their use for short-term fiscal stimulus, they may be appropriate for financing spending whose benefits accrue to future generations. For example, World War II was financed in large part by deficit spending.<sup>37</sup> Furthermore, deficits that grow at a rate less than or equal to GDP growth can be sustainable in that the debt-to-GDP ratio does not increase.

Addressing the deficit is important in the United States, however, because U.S. debt is on an unsustainable course, at least under current policies. A Congressional Budget Office document, published before the tax cuts enacted in 2001 and 2003 were extended at the end of December 2010, estimated that under current law the federal debt will rise from 62% of output to 80% by 2035, and interest payments would rise from 1% to 4% of GDP.<sup>38</sup> Under an alternative, but perhaps more realistic scenario (which included permanent extension of the 2001 and 2003 tax cuts and growth in health costs) the deficit would grow to 185% of GDP and interest payments to 9% by 2035. This interest cost is equal to the entire individual income tax estimated to be collected in 2013 assuming the tax cuts do not expire.

Although the debt increased during the recession due to automatic reductions in taxes and increases in spending along with legislative stimulus, the unsustainability of the debt is generally due to the growth in entitlements (Social Security, Medicare, and other health spending). Indeed, CBO projects declines in other spending as a percent of GDP. Medicare, for example, grows from 3.6% of output in 2010 to 5.9% in 2035 (7% in the alternative scenario). These increases, combined to increased interest payments and little or no increase in revenues lead to the unsustainable path.

The major determinant of the effects on growth is the magnitude of deficit and debt reductions. Some arguments are made that increases in taxes will reduce growth more than cuts in spending, because they will have supply side effects that reduce labor supply and savings. Most evidence, however, suggests that these responses are small. Moreover some kinds of spending cuts, such as those that support investment in physical or human capital, could reduce growth.<sup>39</sup>

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<sup>36</sup> There is a theory called "Ricardian equivalence" which is also closely associated with macroeconomic models referred to as real business cycle models. In these models with super-rational expectations, deficits per se don't matter in the long run or the short run, because any increase in the deficit is offset by an increase in private savings.

<sup>37</sup> See, for example, Joseph J. Thorndike, "Soak the Kids: Taxes, Debt, and Intergenerational Equity," *Tax Notes*, May 23, 2011, pp. 777-781.

<sup>38</sup> See Congressional Budget Office, *The Long-Term Budget Outlook*, (June 2010, unupdated August 2010), <http://www.cbo.gov/ftpdocs/115xx/doc11579/06-30-LTBO.pdf>.

<sup>39</sup> See CRS Report RL33482, *Saving Incentives: What May Work, What May Not*, by Thomas L. Hungerford and CRS Report RL31949, *Issues in Dynamic Revenue Estimating*, by Jane G. Gravelle for reviews of the evidence on savings and labor supply responses.

Fundamentally, however, the nature of measures taken to control the deficit depend on many factors, including the preferences of Americans for government programs. For example, Medicare costs are projected to grow because of the aging of the population and the increase in health care costs. Ultimately, however, the question is whether it is more desirable to cut Medicare benefits in half, double taxes used to finance Medicare, or make deep cuts in other government programs that are already being reduced relative to output (or some combination). The differential effect on growth of the alternative methods of reducing the deficit may well be a secondary issue.

## **Conclusion**

The claim based on the evidence of Alesina and Ardagna (and similar studies) that policies traditionally viewed as contractionary, such as cutting spending, will increase growth in the short-run in the United States, can be questioned on at least two grounds. First, when a methodology that looks to intentions was used to select instances of deficit reduction, as in the IMF study, the empirical results were consistent with traditional fiscal policy. Second, the deficit reductions in the Alesina and Ardagna study that were successful by the authors' measures were associated with economies generally above, or close to, full employment in most cases. The United States is still operating considerably below potential output.

Two major policy questions include when, and how, to reduce the deficit. Reducing the deficit while the economy is still fragile and well below full employment would likely involve further contraction that might not be desirable. At the same time, the sooner long run debt problems are addressed, the more room there is for the adjustments to be implemented gradually. The mix of policies (tax increases, spending cuts, and the types of either) depend on many factors including preferences for public programs and distributional objectives, as well as growth.

## **Author Contact Information**

Jane G. Gravelle  
Senior Specialist in Economic Policy  
jgravelle@crs.loc.gov, 7-7829

Thomas L. Hungerford  
Specialist in Public Finance  
thungerford@crs.loc.gov, 7-6422