The Economic Crisis and the Fiscal Crisis: 2009 and Beyond

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Abstract

This paper discusses the impact of recent tumultuous economic events and policy interventions on the Federal fiscal picture for the immediate future and for the longer run.

In 2009, the federal deficit will be larger as a share of the economy than at any time since World War II. The current deficit is due in part to economic weakness and the stimulus, and in part to policy choices made in the past. What is more troubling is that, under what we view as optimistic assumptions, the deficit is projected to average at least $1 trillion per year for the 10 years after 2009, even if the economy returns to full employment and the stimulus package is allowed to expire in two years.

The longer-run picture is even bleaker. We estimate a fiscal gap – the immediate and permanent increase in taxes or reduction in spending that would keep the long-term debt/GDP ratio at its current level –about 7-9 percent of GDP, or between $1 trillion and $1.3 trillion per year in current dollars.

Recent trends in credit default swap markets show a clearly discernable uptick in the perceived likelihood of default on 5-year U.S. senior Treasury debt, a notion that was virtually unthinkable in the past. While it is difficult to know exactly how to interpret these results, it is clear that – although fiscal policy problems are usually described as medium- and long-term issues – the future may be upon us much sooner than previously expected.

The Economic Crisis and the Fiscal Crisis: 2009 and Beyond

Alan J. Auerbach and William G. Gale[1]

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I. Introduction

 With the economy mired in the deepest recession in decades – a drop in economic activity that has been compounded by continuing mortgage defaults, a historic decline in housing prices, falling equity values, illiquid credit markets, declining consumer confidence, and enormous and rapid job losses – attention has shifted away from problems of fiscal balance. However, the most recent Congressional Budget Office baseline projection (2009a) reports a fiscal year 2009 deficit of $1,186 billion, or 8.3 percent of GDP, under the assumption that no new tax or spending policies are implemented.   Including the recently enacted $787 billion stimulus package raises the 2009 deficit by roughly $185 billion (CBO 2009b).   Either the baseline projection or the baseline-plus-stimulus would represent the largest deficit in dollar terms and as a share of the economy since World War II, as well as a stunning shift from the budget surpluses of a decade ago.

 This paper discusses the impact of recent tumultuous economic events and policy interventions on the Federal fiscal picture for the immediate future and for the longer run.[2] Because these events and policies are still unfolding rapidly, the paper will be updated over the next few weeks and months. This version of the paper includes estimates of the effects of the stimulus package, but does not contain any policy estimates related to Secretary Geithner's outline of a financial bailout on February 10 or President Obama's outline of a housing package on February 17. We will revise the estimates at various times following the clarification of those proposals, the budget summit the Administration has scheduled for February 23, the release of the Administration's budget proposals scheduled for February 26, and the update of CBO's economic projections in March. (Revisions will be posted at www.taxpolicycenter.org.) Based on current information, we reach the following conclusions:

- o The CBO baseline projects that, following record deficits in 2009, the cumulative deficit for 2010-2019 will be "just" $3.8 trillion, with deficits declining in magnitude over time to 1.1 percent of GDP by 2019. The projection, however, is based on a number of rules and assumptions that appear unrealistic.

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[2] The paper builds on analysis and conventions we have developed in numerous previous papers.   See, for example, Auerbach and Gale (1999, 2001), Auerbach et al (2003), Auerbach, Furman and Gale (2007, 2008).

o   Adjusting for those factors, we project a 10-year deficit of $10.2 trillion, or 5.5 percent of GDP.   In our projection, deficits fall to 4.8 percent of GDP by 2012 as the economy recovers, but then rise to 5.0 percent of GDP in 2015 (even though the economy returns to full employment by then) and 5.8 percent of GDP by 2019. In 2019 alone, the difference between our adjusted baseline and the CBO baseline exceeds $1 trillion.

o   Our projection may well be too optimistic. We assume the economic outlook does not get worse, even though recent data suggest downward revisions are expected. We assume the provisions of the stimulus package are actually allowed to expire as written in the law, even though the Administration would like to make many of those provisions permanent.   We ignore any new costs associated with the recently outlined financial bailout and the housing package. We assume the Obama health care plan, a centerpiece of the campaign, is not enacted.

o   We estimate a long-term fiscal gap – the immediate and permanent increase in taxes or reduction in spending that would keep the long-term debt/GDP ratio at its current level – to be about 4-6 percent of GDP under the assumptions in the CBO baseline and about 7-9 percent of GDP under the policy assumptions in our adjusted baseline.

o   While it is typically stated that rising health care costs are "the" cause of the long-term fiscal gap, we also note that the gap has been increased by more than 4 percentage points of GDP just by continuation of the policies that have been enacted in the past 8 years.

o   Recent trends in credit default swap markets show a clearly discernable uptick in the perceived likelihood of default on 5-year U.S. senior Treasury debt, a notion that was virtually unthinkable in the recent past. While it is difficult to know exactly how to interpret these results, it is clear that – although fiscal policy problems are usually described as medium- and long-term issues – the future may be upon us much sooner than previously expected.

We begin in section II with a review of recent events, highlighting both the historic nature of the 2009 fiscal figures and the various policy actions taken by the government, including the unusual steps taken by the Federal Reserve and the Treasury in support of financial markets. In addition to their magnitude, these policy actions deserve special attention because of the issues they raise concerning the measurement of the government's liabilities. Section III discusses the ten-year outlook. Section IV considers the longer-term fiscal outlook.

Section V concludes with a discussion of what these large imbalances imply for the ability of U.S. policy to remain on its current trajectory. Having failed for many years to address the growing fiscal imbalance, and now feeling compelled to add to this imbalance to promote economic recovery, the federal government will soon confront the daunting challenge of fiscal adjustments. While it is difficult to reliably predict how long these adjustments can be delayed or what events might force action to be taken sooner, the problems that ultimately must be addressed will grow in magnitude as time passes.

II. Recent Events

A. Projected Outcomes for 2009

Figures 1-4 provide historical comparisons and future projections for federal revenues, spending, deficits and debt held by the public. In each figure, the thicker line represents actual figures through 2008 and CBO baseline figures through 2019. The thinner line represents the effects of incorporating the stimulus package and a variety of other adjustments discussed in the section III.

CBO's baseline projects 2009 revenues of 16.5 percent of GDP and expenditures of 24.9 percent of GDP. Incorporating the stimulus package, these percentages would be 16.1 percent and 25.7 percent, respectively.[3] This represents the highest expenditure share of GDP since 1945, and a revenue share that has been lower only once since 1950. The gap between revenues and expenditures, the deficit, will be the highest as a share of GDP since the end of World War II. Debt held by the public will rise to 50.5 percent of GDP in 2009, the highest since 1956.

It is worth noting that the projected 2009 deficit and debt would be even higher were it not for the extremely low interest rates on government debt that currently prevail. Whereas debt service accounted for $249 billion – 1.8 percent of GDP – in fiscal year 2008, it is projected to drop to $195 billion – 1.4 percent – in 2009. Some see these low interest rates as a silver lining to the fiscal picture's otherwise very dark cloud, arguing that meeting our fiscal obligations will be much easier, and the crowding out effects of deficits will be smaller, as long as interest rates remain low. We discuss this issue further below in sections IV and V.

B. Special Provisions

There are different ways of measuring the budget deficit. For example, the baseline figures cited above for the unified budget are based on a series of assumptions about future spending and tax policy that may not be realistic, and incorporate the surpluses currently being run by the Social Security, Medicare, and government retirement trust funds, while at the same time excluding the accumulating implicit liabilities of such programs. We have discussed the implications of this convention in our previous work and do so again below in sections III and IV.

In recent months, however, the federal government's intervention in private financial markets has highlighted other issues relating both to how one defines the government's deficit, public debt, and liabilities and to the relation between the official definitions and the government's true fiscal stance. The conventions used to account for these interventions have a considerable impact on the numbers reported above and are discussed below. These interventions center around three issues: the Troubled Asset Relief Program (TARP) and related Treasury interventions in financial markets; the government's takeover of Fannie Mae and Freddie Mac; and the actions of the Federal Reserve Board.

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[3] These calculations assume that the stimulus package does not affect GDP. But even if the package raises GDP significantly, the net effect would still be a significant rise in spending, rise in the deficit, and decline in revenues (all as a share of GDP) relative to the baseline.

CBO (2009a) treats the Troubled Asset Relief Program (TARP) introduced in the fall of 2008 on a net present value basis, in accordance with its treatment of federal credit programs under the Federal Credit Reform Act. Thus, rather than counting the TARP's gross appropriation as contributing to the deficit, CBO includes only the net present value subsidy expected to result from the TARP's activity. Thus, CBO puts the TARP's contribution to the fiscal year 2009 deficit at $184 billion (CBO, 2009, Table 8), even though it is expected to add an additional $461 billion to the outstanding national debt during the same fiscal year (CBO, 2009, Table 6; see also Elliott 2009). A similar treatment of the Treasury's purchases of mortgage-backed securities contributes $248 billion in debt accumulation in fiscal year 2009. These interventions are treated as having a much larger impact on the accumulation of federal debt than on the contemporaneous deficit because of the estimated increase in offsetting financial assets.

CBO also treats the government's bailout of Fannie Mae and Freddie Mac on a present value basis, estimating that the cost to the government of guaranteeing these liabilities will contribute $218 billion to the deficit in fiscal year 2009. However, as this guarantee is not associated with any new official government borrowing, there is no corresponding increase projected for the national debt in fiscal year 2009. Thus, the treatment of Fannie Mae and Freddie Mac adds more to the deficit than to the accumulation of federal debt.

Taking these and other adjustments into account, CBO projects that the increase in federal debt will exceed the deficit in fiscal year 2009 and fall short of the deficit in each remaining year of the budget period. But which set of numbers is more relevant is difficult to say, given the somewhat arbitrary nature of the conventions. It is unclear, for example, the extent to which the guarantees extended to Fannie Mae and Freddie Mac should be treated as having a new cost, given that such guarantees were already implicit in the pricing of the securities issued by these agencies. However, if these agencies are really now part of the federal government, then it would make economic sense to include their very considerable liabilities – at the end of 2007, the GSEs had combined outstanding debt of $1.5 trillion and had provided mortgage-backed securities totaling $3.5 trillion – as part of the national debt. However, for a variety of definitional reasons, these liabilities are not included in the official public debt figures.

The activities and obligations of the Federal Reserve Board only directly enter the federal budget via its payment of net earnings to the Treasury every year. (The Fed generates net earnings through interest payments on its holding of securities, foreign currency holdings, fees for services provided to financial institutions and other factors.) According to CBO(2009a), these net earnings usually are between $20 billion and $30 billion per year.

It is an open question whether the current treatment of the Fed's activities is the most meaningful way to record such activities in the Federal budget. We do not intend to address that question here. We do note, however, that over the past year, the Fed has engaged in a whole raft of new lending activities, substantially broader than the traditional policy levers it has used in the past.

Besides lowering the target for the federal funds rate by more than 500 basis points since

August 2007, the Fed also provided additional support – what is sometimes called "quantitative easing" – by greatly expanding its loan facilities. All told, the Fed has provided more than $1 trillion in financial support to banks, corporations, money market funds, and other institutions. In addition, the Fed has the authority to provide trillions more (CBO, 2009a, Appendix A). The Fed balance sheet has risen from $848 billion at the end of 2007 to $2,247 billion by the end of 2008. These recent actions as well as others, such as the initiation of the payment of interest on reserves, may have a significant effect on the Fed's earnings and hence show up directly in the federal budget. But they are also exposing the US government to potentially significant risk that is not recorded in the budget.

C. Magnitude and sources of change in budget projections

The projected 2009 deficit of $1,186 billion ($1,371 billion including the stimulus package) represents a sharp increase from the 2008 fiscal year deficit of $455 billion and an even more startling increase from the $438 billion deficit for fiscal year 2009 projected by CBO as recently as September, 2008. According to CBO (2009a, Table 8), of the deterioration in the 2009 forecast since September 2008, $106 billion is associated with the traditional factors of economic weakness, i.e., the automatic stabilizers of declining revenues and increasing expenditures that accompany economic slowdowns.[4] The remainder is due to legislative and "technical" changes, a residual group that includes such items as declining tax revenues due to deteriorating asset prices but also the government takeover of Fannie Mae and Freddie Mac, the accounting treatment of which we just discussed.

The stunning shift to deficits from the budget surpluses of a decade ago has accelerated in the past year as the recession took hold, but the transition began many years ago, as Figure 5 illustrates. The top line in the figure shows the CBO baseline projections made in January 2001; the bottom line shows the deficits we have actually experienced since then, along with the projected value for 2009. The two recessions during this period (covering parts of fiscal years 2001, 2002 and 2008) had an impact, but so too have policy decisions, leaving a huge gap between the projected and actual deficit even in 2007, prior to the onset of the current recession.

Specifically, Figure 5 shows that the January 2001 baseline projection for 2009 was a surplus of $710 billion and that the January 2009 baseline projection for 2009 is a deficit of $1,371 billion. Of this $2,080 billion difference in projections for 2009, roughly two-thirds, or $1,370 billion, is due to various policy changes – tax cuts and spending increases – that have been enacted since January 2001. The remaining portion, $710 billion, is due to changes in the economic and technical aspects of CBO's projections since 2001. Appendix Table 1 provides more detail on the sources of these changes. The direct effect of tax cuts and spending increases since 2001 was to raise the deficit by add 4.3 percent of GDP in 2007 and 5.9 percent of GDP in 2008. (Including the debt service costs, the new policies raised deficits even more.) Given the way the long-term fiscal gap is calculated (in section IV), the direct effects of the tax and spending changes enacted during this period imply increases in the long-term fiscal gap. As a result, policies enacted during the past eight years have a large impact on the magnitude of the long-term fiscal gap.

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[4] These are the items that CBO classifies as being attributable to "economic" changes.

III. The Ten-Year Outlook

The CBO baseline projects that the deficit as a share of GDP will fall in 2010, as the economy recovers, the temporary stimulus measures expire, the budgetary costs of the interventions related to TARP, FNMA, and FHLMC recede, and a temporary AMT patch is scheduled to expire. Then, as a result of the scheduled expiration of the 2001 and 2003 tax cuts at the end of 2010, the unified budget deficit would fall further, and would be below 2 percent of GDP in 2012 and fall gradually to 1.1 percent by 2019 (see the top line of Figure 3). This CBO baseline, however, does not include the stimulus package, and is based on a set of mechanical assumptions rather than realistic forecasts. The remainder of this section describes what would happen if we adjust the baseline budget figures in several ways to reflect what would happen if the stimulus package is included and the policy practices of recent years — like routinely extending tax cuts and AMT relief without paying for them — were continued.

A. Adjustments to Reflect Alternative Assumptions about Future Policy

The most important area in which we revise the baseline involves expiring tax provisions. The CBO assumes (by law) that Congress will extend some expiring mandatory spending programs,[5] but that all temporary tax provisions (other than excise taxes dedicated to trust funds) expire as scheduled, even if Congress has repeatedly renewed them. The large majority of the tax cuts enacted since 2001 expire or sunset by the beginning of 2011. A variety of other tax provisions that have statutory expiration dates are routinely extended for a few years at a time as their expiration date approaches. We assume that almost all of these provisions will be extended.

The second issue involves the AMT, which, absent changes, would grow to affect more than 40 million households by 2017 (see Tax Policy Center, 2009). Our budget estimates reflect current policy toward the AMT in two ways. First, we assume that provisions of the AMT that expired at the end of 2009 – including higher AMT exemption levels that had been in place since the 2001 tax cuts and the use of personal nonrefundable credits against the AMT, which had been in place for an even longer period – are granted a continuance. Second, we index the AMT exemption amount for inflation starting in 2009.

The third issue involves discretionary spending, which typically requires new appropriations by Congress every year. The CBO baseline assumes that discretionary spending will remain constant in real dollars at the level prevailing in the first year of the budget period. But maintaining current services for many programs would require increases for both inflation and population. In some cases, like veterans' health benefits, even larger increases might be needed to maintain current services (because the number of veterans may rise faster than the population and because health costs may rise faster than the overall price level). The CBO baseline's projection implies that that by 2019 discretionary spending would fall by 24 percent relative to GDP and by 14.8 percent in real per capita terms. Given the issues just discussed, baseline discretionary spending could be adjusted in any of several plausible ways. We adjust the baseline on the assumption that real discretionary spending grows at the same rate as the

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[5] CBO (2008a, Table 3-6) reports that the baseline includes $870 billion in outlays, not including debt service costs, for mandatory spending programs that are assumed to be extended beyond their expiration dates. CBO (2009a) does not report comparable figures.

population and inflation, consistent with adjustments that we have made in earlier years.

B. Retirement Funds

Unified budget projections can provide a misleading picture of the long-term budget position of the federal government when current or past policies result in a spending-revenue imbalance after the end of the budget projection period. Under current laws, an important source of those imbalances is long-term commitments to pay pension and healthcare benefits to the elderly through Social Security, Medicare, Medicaid, and the federal employees' retirement program. There are several potential ways to address that problem, each with different strengths and weaknesses. The approach we take in this section, where we focus on the 10-year outlook, is to separate some of those programs from the official budget. In particular, we separate the trust funds for Social Security, Medicare, and government pensions from the rest of the budget. In the following section, we focus on a unified budget and extend the budget horizon to be long enough to capture the time periods in which cash flows of those programs turn negative.

C. Implications of the Adjustments

Table 1 and Figure 6 show the sizable effects on projected deficits of adjusting the budget for alternative policy assumptions and retirement trust funds over the 10-year period from 2010 to 2019. (Appendix Table 2 provides annual figures.) The effects on taxes, spending, deficits, and debt are also shown in Figures 1-4 to provide historical perspective. Note, also, that the budget outcomes discussed above for the current fiscal year – 2009 – are omitted from the 10-year projection period examined in this section.

The CBO unified budget baseline projects a 10-year deficit of $3,737 billion (2.0 percent of GDP). Adjusting the CBO baseline for our assumptions regarding alternative policies implies that the unified budget will be in deficit to the tune of $10.2 trillion (5.5 percent of GDP) over the next decade. The adjusted deficit falls from its 2009 levels to $766 billion (4.8 percent of GDP) in 2012 before rising gradually to $1,303 billion (5.8 percent of GDP) by 2019.

Thus, while both the unified baseline and our adjusted baseline show deficits shrinking relative to GDP through the recovery, CBO's baseline shows a shrinking deficit share of GDP after 2012, while our adjusted baseline shows a gradual and persistent increase in the deficit as a share of GDP over the last seven years of the projection. By 2019 the *annual* difference between the official projected unified budget and our alternative unified deficit is $1,069 billion (4.8 percent of GDP).

Moreover, the unified budget includes retirement trust fund surpluses that are projected to total more than $2.0 trillion over the next decade. Excluding retirement funds, which already face long-term deficits themselves, the rest of the government in the adjusted baseline is projected to face a 10-year deficit of $12.2 trillion, or 6.7 percent of GDP under the adjusted baseline. The deficit outside of the retirement trust funds is projected to be at least 6.1 percent of GDP in every year through 2019.

Under the CBO's baseline, the ratio of public debt to GDP declines from 50.5 percent in

2009 to 41.9 percent by 2019. Under the adjusted baseline, the debt-to-GDP ratio rises to 59.1 percent in 2019, the highest share of GDP since 1954.

D. It Could Be Worse

While it should be evident that our adjusted baseline presents a far more pessimistic fiscal picture than CBO's baseline, it may not be evident that fiscal outcomes could actually turn out to be significantly worse than even in our adjusted baseline, for several reasons.

First, all of the estimates above are based on the economy recovering in an orderly if somewhat slow manner from the current economic downturn. A longer slack period is not out of the question, though, given that the current problems began in the housing and financial sectors and it often takes a long time for such problems to unwind (witness Japan in the 1990s). Likewise, the pace, breadth and depth of the current economic downturn have surprised most analysts and the surprises may not be over. Uncertainty about economic prospects is heightened by the unprecedented (and continuing) scope and scale of Federal Reserve and Treasury interventions and the unknown extent to which they will prove effective. Reinhart and Rogoff (2009) provide sobering evidence about revenue declines in the aftermath of financial crises.

Second, the analysis is based on the assumption that there are no further interventions regarding the GSEs, the TARP, or related interventions, and ignores the housing package discussed by the President earlier this week. These assumptions seems exceedingly optimistic in a budgetary sense, and the subsequent interventions could prove quite expensive.

Third, the analysis assumes that the provisions of the stimulus package that are slated to expire after two years actually do expire at that point. However, just as it has proven difficult not to extend expiring tax provisions, it may well prove difficult to allow stimulus provisions to expire after two years. For example, the stimulus bill's most significant tax provision is the Make Work Pay credit that was the centerpiece of President Obama's tax plan as a candidate and was originally proposed as a permanent policy change. Other parts of the bill, such as provisions for health care, education, infrastructure, and energy, raise similar concerns, as they are items that the Administration would like to promote in the long-term, not just as stimulus.

Fourth, our assumption that discretionary spending grows at the rate of population and inflation has been significantly too conservative over the past decade. If, instead, discretionary spending were to remain at its current share of GDP (8.3 percent) over the next decade, deficits would be $1.4 trillion (0.8 percent of GDP) larger over the next 10 years than under the assumption used in the adjusted baseline. Likewise, it is worth noting that CBO's January 2009 budget projections contain a trillion dollars *less* in discretionary spending over the next decade than do the September 2008 projections because of complications in projecting military expenditures in Iraq and Afghanistan (CBO, 2009a, page 21). Whether these savings will occur is unclear.

Fifth, both the CBO baseline and our adjusted baseline assume that Medicare expenditures will be restrained by previous "sustainable growth rate" legislation that limits the fees paid to physicians. This would, however, require a 21 percent cut in reimbursement rates in

2010 and higher cuts thereafter, which seem unlikely especially since legislation to disregard these limits has been enacted for each of the last six years. Maintaining the 2009 payment rates through 2019 would raise direct outlays by $324 billion (CBO 2009a, pages 20-21).

Sixth, we have not incorporated any of President Obama's tax and spending proposals from the campaign, except to the extent that they were included in the stimulus package or the tax cut extensions analyzed above. Besides his stated goals of having the Make Work Pay credit become permanent and extending many of the 2001 and 2003 tax cuts, Obama has also proposed sweeping health care reform that would cost $1.6 trillion over 10 years (Burman et al, 2008)

IV. The Long-Term Budget Outlook

The fiscal gap is an accounting measure that is intended to reflect the long-term budgetary status of the government.[6] As developed by Auerbach (1994) and implemented in many subsequent analyses, the "fiscal gap" measures the size of the immediate and permanent increase in taxes and/or reductions in non-interest expenditures that would be required to set the present value of all future primary surpluses equal to the current value of the national debt, where the primary surplus is the difference between revenues and non-interest expenditures.[7] Equivalently, it would establish the same debt-GDP ratio in the long run as holds currently. The gap may be expressed as a share of GDP or in dollar terms.

A. Initial Assumptions

There are a variety of assumptions necessary to compute the fiscal gap. It is helpful to break these assumptions down into those regarding the ten-year budget period and those regarding the years thereafter, for which no official CBO projections are available.

We start with perhaps the simplest approach for the ten-year budget period, following the CBO baseline through 2019. We assume that, after 2019, most categories of spending and revenues remain constant as a share of GDP. These long-run assumptions, however, would be seriously misleading for the major entitlement programs and their associated sources of funding, for which we do have recent long-term projections available. For the Medicare and OASDI programs, projections for all elements of spending and dedicated revenues (payroll taxes, income taxes on benefits, premiums and contributions from states) are available or can be calculated from figures presented in the 2008 Trustees reports (see Medicare Trustees Report, 2008; OASDI Trustees Report, 2008).[8] We use the Trustees projections of the ratios of taxes and spending to GDP for the period 2020-2085 for OASDI and 2020-2080 for Medicare, assuming that these ratios are constant at their terminal values thereafter. For Medicaid, we assume that spending through 2082 is based on CBO's most recent long-term projections (CBO 2007)[9] and that spending as a share of GDP is constant thereafter.

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[6] Auerbach, Gale, Orszag, and Potter (2003) discuss the relationship between the fiscal gap, generational accounting, accrual accounting and other ways of accounting for government.

[7] Over an infinite planning horizon, this requirement is equivalent to assuming that the debt-GDP ratio does not explode. See Auerbach (1994, 1997).

[8] Details of these computations are available from the authors upon request.

[9] CBO (2007) provides two long-run scenarios for medical spending, but the projections for Medicaid are the same for both.

It is important to understand how to interpret these assumptions. They do not represent a pure projection of "current policy" but instead assume that policymakers will make a number of future policy changes, including a continual series of tax cuts, discretionary spending increases, and adjustments to keep health spending from growing too quickly. For example, if current tax parameters were extended forward income taxes would rise as a share of GDP. Our forecast implicitly assumes policymakers will cut taxes in response. Conversely, our forecast assumes that a richer society will want to spend more on discretionary spending, going beyond the current services provided by government. Finally, our forecasts for government health programs reflect the intermediate assumptions of the Medicare Trustees and are below the past rate of growth, implicitly assuming policymakers will make changes to reduce spending growth in these programs.

B. Estimates

Under the official baseline assumptions, we estimate that the fiscal gap through 2082 is now 3.80 percent of GDP over the same period (Table 2).[10] This implies that an immediate and permanent increase in taxes or cut in spending of 3.80 percent of GDP – or over $540 billion per year in current terms – would be needed to maintain fiscal balance through 2082. In present-value dollars, rather than as a share of GDP, the fiscal gap through 2082 under these assumptions amounts to $27.8 trillion. The fiscal gap is even larger if the time horizon is extended, since the budget is projected to be running substantial deficits in years approaching and after 2082. If the horizon is extended indefinitely, for example, the fiscal gap rises to 5.70 percent of GDP under the official baseline, or $78.3 trillion.

These measures of the fiscal gap reflect a substantial worsening of economic conditions since our last estimates in May[11], when we reported an estimate of 2.96 percent of GDP through 2082, and 4.96 percent of GDP over the infinite horizon. One can break this deterioration down into several factors. First, shifting the calculation forward from 2008 to 2009 with no change in projections increases the gap by 0.04 percent of GDP, simply because the large problems of the future loom one year closer on the horizon. Second, projected revenues at the end of the budget period are 0.13 percent of GDP lower, and projected non-interest expenditures are 0.37 percent higher, than was forecast last spring, and projecting these forward over the remaining period adds roughly another 0.50 percent of GDP to the fiscal gap. The remainder of the increase in the fiscal gap, 0.33 percent of GDP through 2082 and 0.24 percent over the infinite horizon, is a residual, attributable to increased deficits within the ten-year budget period. (The latter number is smaller simply because of a longer future over which this ten-year cost is being amortized.)

The fiscal gap is larger still under the adjusted baseline, based on an alternative and arguably more realistic set of assumptions with regard to the ten-year budget period. These assumptions lead to a lower level of revenue and a higher level of discretionary spending than the official baseline. Under the adjusted baseline – in which the 2001 and 2003 tax cuts are

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[10] The discount rate in these calculations is based upon the intermediate assumptions of the Social Security trustees, which assume a nominal interest rate of 5.7 percent.

[11] See Auerbach, Furman and Gale (2008).

extended, the AMT is reformed and discretionary spending keeps pace with inflation and population growth over the next decade – the fiscal gap through 2082 amounts to 6.65 percent of GDP, or 2.85 percent of GDP more than under the official baseline. In present-value dollars, the fiscal gap under this scenario amounts to $48.7 trillion through 2082. Over the infinite horizon, the adjusted baseline is 7.87 percent of GDP, or $118.5 trillion.

By contrast, the inclusion of the recently passed stimulus package adds "just" 0.12 percent of GDP to the fiscal gap under either baseline through 2082, and 0.07 percent of GDP over the infinite horizon. The difference is much smaller than that between the CBO and adjusted baselines because essentially all of the provisions in the stimulus package are estimated to be temporary, even though they are large for those years during which they apply. The significance of this distinction can be seen in Figure 7, which shows projected revenues and non-interest expenditures through 2082 under three scenarios, the CBO baseline, the CBO baseline including the stimulus package, and the adjusted baseline without the stimulus package. While the stimulus package widens the gap between revenues and expenditures for a short period, the adjusted baseline widens the gap permanently, with an especially large impact on revenues, which remain relatively stable at around 17 percent of GDP under the adjusted baseline but jump to around 20 percent of GDP under the CBO baseline.

These long-run projections are, of course, subject to considerable uncertainty. While uncertainty can in general push in either direction, there is considerable risk that these forecasts understate long-run fiscal pressure in one area. In keeping with past practice, the Medicare Trustees project that the growth in health care spending, adjusted for demographics, will eventually moderate. But no mechanism by which this moderation will occur is specified, and the historical experience offers little support for it. Thus, one might reasonably project much faster Medicare growth later in the projection period, after the Trustees' assumed slowdown takes effect, and this is the approach taken recently by CBO (2007) in its long-run Medicare projections. Even under its more moderate projections (its "Extended Baseline" scenario rather than its "Alternative Baseline" scenario) CBO projects Medicare spending that exceeds the Medicare Trustees' projections by nearly 6 percent of GDP. It is not surprising, then, that using CBO's long-run Medicare projections rather than the Trustees[12] produces an even bleaker long-run picture, with the fiscal gap under the adjusted baseline and with the stimulus package reaching 8.35 percent of GDP through 2082 and 12.29 percent of GDP over the infinite horizon.

C. Implications of the Long-Term Gap

How can so large a fiscal gap be closed? Even under the most optimistic estimates just provided, for the CBO baseline without the stimulus package, closing the gap would translate into a permanent reduction in non-interest spending of 22.8 percent or a permanent increase in revenues of 28.9 percent, both calculated relative to their projected trajectories. Narrower means of closing the gap would be even more Draconian – a 51.6 percent increase in income taxes, for example; and eliminating nearly all discretionary spending. Because the fiscal gap measures the size of the required immediate fiscal adjustment, the required adjustment also rises if action is delayed, and would be substantially larger when computed relative to the adjusted baseline.

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[12] In this alternative scenario, we also adopt CBO's long-run projections for Social Security spending, which are also higher than those of the OASDI Trustees – by nearly 0.6 percent of GDP toward the end of the projection period.

It is important to stress that the problem of delay is not simply one of accumulating debt and debt service. If it were, then the currently low interest rates would be expected to lessen the problem and make the required adjustments smaller. But this is not the case. If one assumed, for example, that the government's borrowing rate were zero for the next 20 years, then the estimated fiscal gap under the CBO baseline would <u>increase</u> slightly over the infinite horizon, from 5.70 percent of GDP to 5.82 percent of GDP. This is because the fiscal gap can be thought of as arising from two sources: the debt already in place, and the implicit liabilities that loom in the future. Lower interest rates reduce the cost of servicing the debt. For example, a 20-year period of zero debt service would cause the debt-GDP ratio to fall to roughly 24 percent in 2029 instead of rising to 63 percent. But lower interest rates also increase the present value of future cash-flow gaps, in this calculation the factor that dominates. Indeed, if one changes the relative importance of these two factors, the effect of lower interest rates changes. For example, focusing on the fiscal gap through 2082 rather than over the infinite horizon reduces the significance of future unfunded liabilities; for this calculation, a 20-year period of zero interest rates would lower the fiscal gap under the CBO baseline from 3.80 percent of GDP to 3.72 percent. The key point, though, is that low interest rates are not necessarily an advantage to addressing the fiscal gap, even if debt accumulation slows sharply over the short run. Another implication of this analysis is that one cannot use the debt-GDP ratio as an indicator of how long we have to address the fiscal problem.

V. Discussion

The federal fiscal outlook is both bleak and uncertain. The CBO baseline budget projection shows shrinking unified deficits over the next 10 years. However, under assumptions that reflect the conduct of fiscal policy in recent years and more appropriate treatment of the retirement funds, the nation faces significant medium-term shortfalls and massive long-term deficits.

Several caveats are worth exploring. First, the budget outlook depends critically on the choices of policy-makers. If Congress abides by pay-as-you-go rules in the future, the outcomes in the CBO baseline projection for the unified budget become more plausible.

Second, there is significant uncertainty in budget projections. That is especially true for projections of the deficit, which is the difference between two large numbers, revenues and outlays. Even small forecast errors in those variables can result in large swings in the deficit.

Third, significant new economic growth would improve the projected budgets but if growth is slower than expected, deficits will increase. Of course, large deficits sap national saving and hence reduce long-term potential output, which in turn raises the long-term deficit. The declines in national saving are not dependent on deficits raising interest rates, because deficits can be financed by capital inflows from overseas, so the argument that low interest rates mitigate the deleterious effects of deficits is misleading, if not simply wrong.

Lastly, while we have been warning of medium- and long-term fiscal concerns for a very long time, it is worth emphasizing that the fiscal situation has deteriorated considerably due to

recent events, including the combination of chronic and acute economic imbalances. Even if the recovery occurs as projected and stimulus bill is allowed to expire, the country will face the highest debt/GDP ratio in 50 years and an increasingly unsustainable and urgent fiscal problem. To some extent, these considerations are already showing up in market assessments of government debt. Although yields on Treasury bonds are quite low, this phenomenon likely reflects the international "flight to safety" that has accompanied the current world-wide recession and financial crisis. Evidence from credit default swaps suggests a less sanguine picture. Figure 8 shows that the price of purchasing insurance against default on 5-year senior U.S. Treasury debt rose from around 10 basis points before September 2008 to above 70 basis points in early 2009. Figure 9 shows the implied default probabilities, under the assumption that if defaults occur, bond holders would recover 40 percent of par value. The implied probability of default has risen from under 1 percent to more than 6 percent. While one can argue that a different recovery rate would be appropriate, three points are worth making.   First, the trend in the data clearly shows a visible uptick in the likelihood of default on U.S. Treasury bonds, a notion that was virtually unthinkable in the past. Second, if one assumes a higher recovery rate than 40 percent in the event of default, then the implied default rate is higher, not lower, than reported in the table. Third, the figures relate to default *in the next five years*, not to long-term liabilities associated with Medicare and Medicaid. While we find these figures hard to reconcile with our own views of the current creditworthiness of the U.S., especially over the next five years, it is also worth pointing out that the data show similar or even higher credit default prices and implied default probabilities for other countries. In any case, it may well be that long-term fiscal problems will beset us much sooner than one might have expected in the past.

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Table 1

Baseline and Adjusted Budget Outcomes for 2010-2019
January 2009[1,2]

	Dollars (billions)	Percent of GDP
CBO Unified Budget Baseline with HR1 Stimulus	**-3,737**	**-2.0%**
Adjustment for Expiring Bush Tax Cuts		
Extend Estate and Gift Tax Repeal	-527	-0.3
Extend Reduced Tax Rates on Dividends and Capital Gains	-361	-0.2
Extend Other Non-AMT Provisions of EGTRRA, JGTRRA	-952	-0.5
Extend AMT Provisions of EGTRRA, JGTRRA	-1,184	-0.6
Interest	-649	-0.4
Subtotal	-3,674	-2.0
Adjustment for other Expiring Provisions		
Revenue	-513	-0.3
Interest	-124	-0.1
Subtotal	-637	-0.3
Adjustment for All Expiring Tax Provisions		
Revenue	-3,537	-1.9
Interest	-773	-0.4
Subtotal	-4,311	-2.3
=Unified Budget adjusted for expiring tax provisions	**-8,048**	**-4.4**
-Adjustment for AMT		
Index AMT	-635	-0.3
Interest	-126	-0.1
Subtotal	-761	-0.4
=Unified Budget adjusted for expiring tax provisions and AMT	**-8,809**	**-4.8**
-Adjustment for holding real DS/person constant		
Hold real DS/person constant	-1,125	-0.6
Interest	-231	-0.1
Subtotal	-1,356	-0.7
=Unified Budget adjusted for expiring tax provisions and AMT with real DS/person constant	**-10,165**	**-5.5**
-Adjustment for Retirement Funds		
Social Security	-1,542	-0.8
Medicare	346	0.2
Government Pensions	-849	-0.5
Subtotal	-2,044	-1.1
=Non-retirement fund budget adjusted for expiring tax provisions and AMT with Real DS/person constant	**-12,209**	**-6.7**

[1]Due to rounding, columns may not sum to total.

[2]Source and notes: see Appendix Table 2.

Table 2
Fiscal Gaps

Baseline:	Official CBO Baseline		Adjusted Baseline	
	Through 2082	**Permanent**	**Through 2082**	**Permanent**
As a Percent of GDP	3.80	5.70	6.65	8.63
In Trillions of Present-Value Dollars	27,844	78,274	48,710	118,514
Including HR1 Stimulus Package:				
As a Percent of GDP	3.92	5.77	6.77	8.70
In Trillions of Present-Value Dollars	28,699	79,229	49,565	119,469

Source: Authors' calculations

Appendix Table 1

Sources of Change in CBO Unified Budget
January 2001-January 2009[1,2]

	2001	2002	2003	2004	2005	2006	2007	2008	2009
CBO 2001 Baseline Projection	281	313	359	397	433	505	573	635	710
Economic and Technical Changes	68	321	372	290	208	121	12	83	710
Policy Changes	86	149	364	520	543	633	723	1,008	1,370
Tax and Spending	85	145	350	485	483	541	593	834	1,146
Debt Service	1	4	14	35	60	92	130	174	224
Sum of Changes	154	470	736	810	751	754	735	1,091	2,080
Actual Surplus or Deficit	128	-158	-378	-413	-318	-248	-161	-455	-1,371
GDP	10,060	10,378	10,804	11,504	12,245	13,023	13,808	14,224	14,257
CBO 2001 Baseline Projection (% of GDP)	2.8	3.0	3.3	3.4	3.5	3.9	4.1	4.5	5.0
Economic and Technical Changes	0.7	3.1	3.4	2.5	1.7	0.9	0.1	0.6	5.0
Policy Changes	0.9	1.4	3.4	4.5	4.4	4.9	5.2	7.1	9.6
Tax and Spending	0.8	1.4	3.2	4.2	3.9	4.2	4.3	5.9	8.0
Debt Service	0.0	0.0	0.1	0.3	0.5	0.7	0.9	1.2	1.6
Sum of Changes	1.5	4.5	6.8	7.0	6.1	5.8	5.3	7.7	14.6
Actual Surplus or Deficit	1.3	-1.5	-3.5	-3.6	-2.6	-1.9	-1.2	-3.2	-9.6

[1]Columns may not sum to total due to rounding.

[2]Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2009-2019." January 2009.
Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2002-2011." January 2001.

Appendix Table 2

Baseline and Adjusted Budget Outcomes for 2009-2019
January 2009 Projections
(Surplus or Deficit in $ billions)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2010-2019
1. CBO Unified Budget Baseline[1]	**-1371**	**-1102**	**-632**	**-300**	**-285**	**-272**	**-239**	**-265**	**-227**	**-182**	**-234**	**-3737**
as percent of nominal GDP	**-9.6**	**-7.6**	**-4.2**	**-1.9**	**-1.7**	**-1.5**	**-1.3**	**-1.3**	**-1.1**	**-0.9**	**-1.0**	**-2.0**
Adjustment for Expiring Bush Tax Cuts												
Extend Estate and Gift Tax Repeal[2]	0.0	-1.3	-24.6	-42.2	-47.8	-54.4	-60.3	-65.7	-71.4	-77.0	-82.2	-527.1
Extend Reduced Tax Rates on Dividends and Capital Gains[2]	0.3	-1.6	-17.7	-20.0	-40.7	-42.3	-44.1	-45.8	-47.6	-49.6	-51.6	-361
Extend Other Non-AMT Provisions of EGTRRA, JGTRRA[2]	0.0	1.7	-60.8	-116.7	-115.7	-114.4	-112.3	-110.7	-109.0	-107.7	-107.0	-952
Extend AMT Provisions of EGTRRA, JGTRRA[3]	-5.0	1.7	-89.0	-83.0	-96.0	-111.0	-126.0	-144.0	-160.0	-178.0	-199.0	-1184
Total of above for Interest Calculation	-4.7	0.5	-192.2	-261.8	-300.2	-322.0	-342.7	-366.2	-388.0	-412.3	-439.8	-3025
Interest[4]	0.0	-0.1	-2.2	-10.9	-27.2	-45.6	-65.2	-86.6	-110.4	-136.3	-164.6	-649
Subtotal	-5	0	-194	-273	-327	-368	-408	-453	-498	-549	-604	-3674
as percent of nominal GDP	0.0	0.0	-1.3	-1.7	-1.9	-2.0	-2.2	-2.3	-2.4	-2.6	-2.7	-2.0
Adjustment for other Expiring Provisions[5]												
Revenue	-3	-22	-48	-48	-51	-53	-55	-54	-58	-60	-63	-513
Interest	0	0	-1	-3	-6	-10	-13	-17	-21	-25	-29	-124
Subtotal	-3	-22	-49	-52	-58	-63	-69	-71	-78	-84	-91	-637
Adjustment for All Expiring Tax Provisions[6]												
Revenue	-8	-22	-241	-310	-351	-375	-398	-420	-446	-472	-502	-3537
Interest	0	0	-3	-14	-34	-55	-78	-103	-131	-161	-193	-773
Subtotal	-8	-22	-244	-324	-385	-430	-477	-524	-577	-633	-696	-4311
2. Unified Budget adjusted for expiring tax provisions	**-1379**	**-1124**	**-876**	**-624**	**-669**	**-703**	**-715**	**-788**	**-803**	**-815**	**-929**	**-8048**
as percent of nominal GDP	**-9.7**	**-7.8**	**-5.8**	**-3.9**	**-3.9**	**-3.9**	**-3.8**	**-4.0**	**-3.9**	**-3.8**	**-4.2**	**-4.4**
Adjustment for AMT												
Interaction Effect of Indexing AMT	0.0	0.0	-16.0	-52.0	-59.0	-67.0	-74.0	-82.0	-88.0	-95.0	-102.0	-635
Interest	0.0	0.0	-0.2	-1.5	-4.4	-8.0	-12.0	-16.6	-21.8	-27.5	-33.8	-126
Subtotal	0	0	-16	-53	-63	-75	-86	-99	-110	-123	-136	-761
3. Unified Budget adjusted for expiring tax provisions, and AMT	**-1379**	**-1124**	**-892**	**-678**	**-733**	**-778**	**-801**	**-887**	**-913**	**-937**	**-1065**	**-8809**
as percent of nominal GDP	**-9.7**	**-7.8**	**-5.9**	**-4.2**	**-4.3**	**-4.3**	**-4.2**	**-4.5**	**-4.4**	**-4.4**	**-4.8**	**-4.8**
Adjustment for holding real DS/person constant[7]												
Hold real DS/person constant	0	-23	-54	-84	-96	-112	-125	-134	-150	-168	-177	-1125
Interest	0	0	-1	-4	-9	-15	-23	-30	-39	-49	-60	-231
Subtotal	0	-23	-55	-88	-106	-127	-148	-164	-190	-217	-238	-1356
4. Unified Budget adjusted for expiring tax provisions and AMT with real DS/person constant	**-1379**	**-1147**	**-947**	**-766**	**-839**	**-905**	**-949**	**-1051**	**-1102**	**-1155**	**-1303**	**-10165**
as percent of nominal GDP	**-9.7**	**-7.9**	**-6.3**	**-4.8**	**-4.9**	**-5.0**	**-5.0**	**-5.3**	**-5.4**	**-5.4**	**-5.8**	**-5.5**
total difference from CBO unified budget baseline	-8	-45	-315	-466	-554	-633	-710	-786	-876	-973	-1069	-6428
as percent of nominal GDP	-0.1	-0.3	-2.1	-2.9	-3.3	-3.5	-3.8	-4.0	-4.3	-4.5	-4.8	-3.5
Adjustment for Retirement Funds[8]												
Social Security	-158	-144	-146	-150	-156	-162	-164	-162	-159	-154	-146	-1542
Medicare	3	12	30	8	25	27	29	56	52	50	58	346
Government Pension	-46	-61	-65	-69	-74	-80	-85	-92	-100	-107	-114	-849
Subtotal	-201	-193	-181	-211	-205	-215	-220	-198	-206	-212	-203	-2044
5. Non-retirement fund budget adjusted for expiring tax provisions and AMT with real DS/person constant	**-1579**	**-1340**	**-1128**	**-978**	**-1044**	**-1120**	**-1170**	**-1249**	**-1309**	**-1367**	**-1505**	**-12209**
as percent of nominal GDP	**-11.1**	**-9.3**	**-7.5**	**-6.1**	**-6.1**	**-6.2**	**-6.2**	**-6.3**	**-6.4**	**-6.4**	**-6.8**	**-6.7**
Nominal GDP[9]	14257	14452	15137	16048	17035	17986	18864	19703	20537	21397	22278	183437

[1] Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2009-2019." January 2009. Table 4.

[2] Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2009-2019." January 2009. Table 7.

[3] Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2009-2019." January 2009. Table 7. Joint Committee on Taxation. "Estimated Budget Effects of the Revenue Provisions Contained in the Conference Agreement of H.R.1 CBO's ten-year projection of the cost of indexing the AMT exemption to inflation was produced prior to the passage of the American Recovery and Reinvestment Tax Act, which extended the AMT patch for 2009. We include the cost of patching the AMT in 2009 with the costs associated with economic stimulus legislation, and subtract JCT's estimate of the 2009 AMT patch from the costs of permanently indexing the AMT exemption to inflation. Since the two policies are essentially the same, the net cost changes very little.

[4] Author's calculations using January 2009 CBO debt service matrix.

[5] Authors' calculations so the subtotal (excluding interest) equals total from CBO's Congressional Budget Office. "The Budget an Economic Outlook: Fiscal Years 2009-2019." January 2009. Supplemental Tables.

[6] Congressional Budget Office, "The Budget and Economic Outlook: Fiscal Years 2009-2019," Table 7 'The Budgetary Effects of Selected Policy Alternatives Not Included in CBO's Baseline.' January 2009. The sum of the lines "Index the AMT for Inflation," "Extend EGTRRA and JGTRRA, and "Extend Other Expiring Tax Provisions." The values do not include interest.

[7] Congressional Budget Office, "The Budget and Economic Outlook: Fiscal Years 2009-2019," Table 7 'The Budgetary Effects of Selected Policy Alternatives Not Included in CBO's Baseline.' January 2009

[8] Authors' calculations using Census 2000 projections of population growth and CPI projections, Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2009-2019." January 2009, Table B-2.
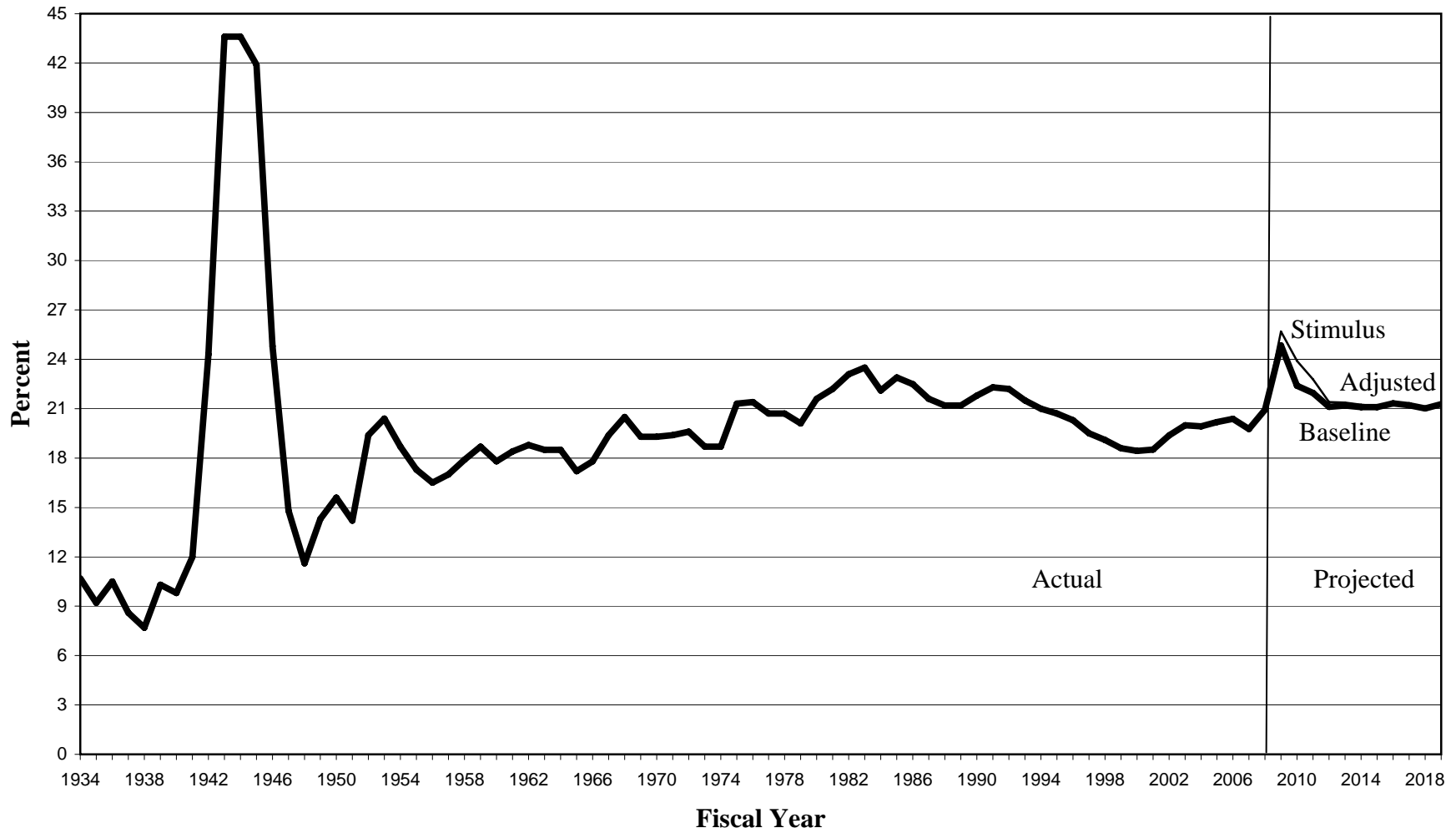
[9] Congressional Budget Office. "The Budget and Economic Outlook: Fiscal Years 2009-2019." January 2009. Table B-2.

Figure 1
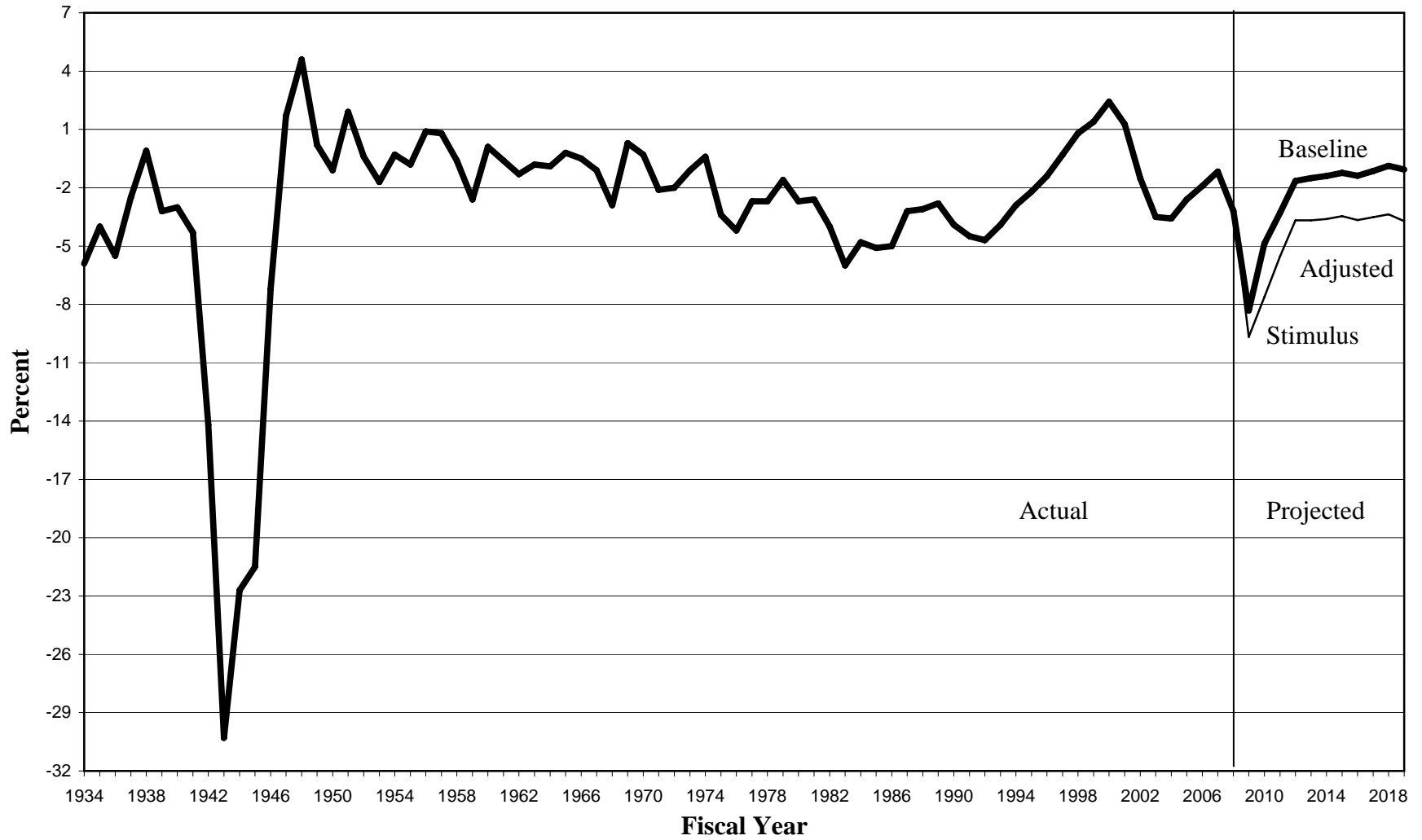**Federal Revenues, 1934-2019 (Percent of GDP)**

Source: CBO (2009), Economic Report of the President (2009). Authors' calculations. See adjustments made in Table 1.

Figure 2
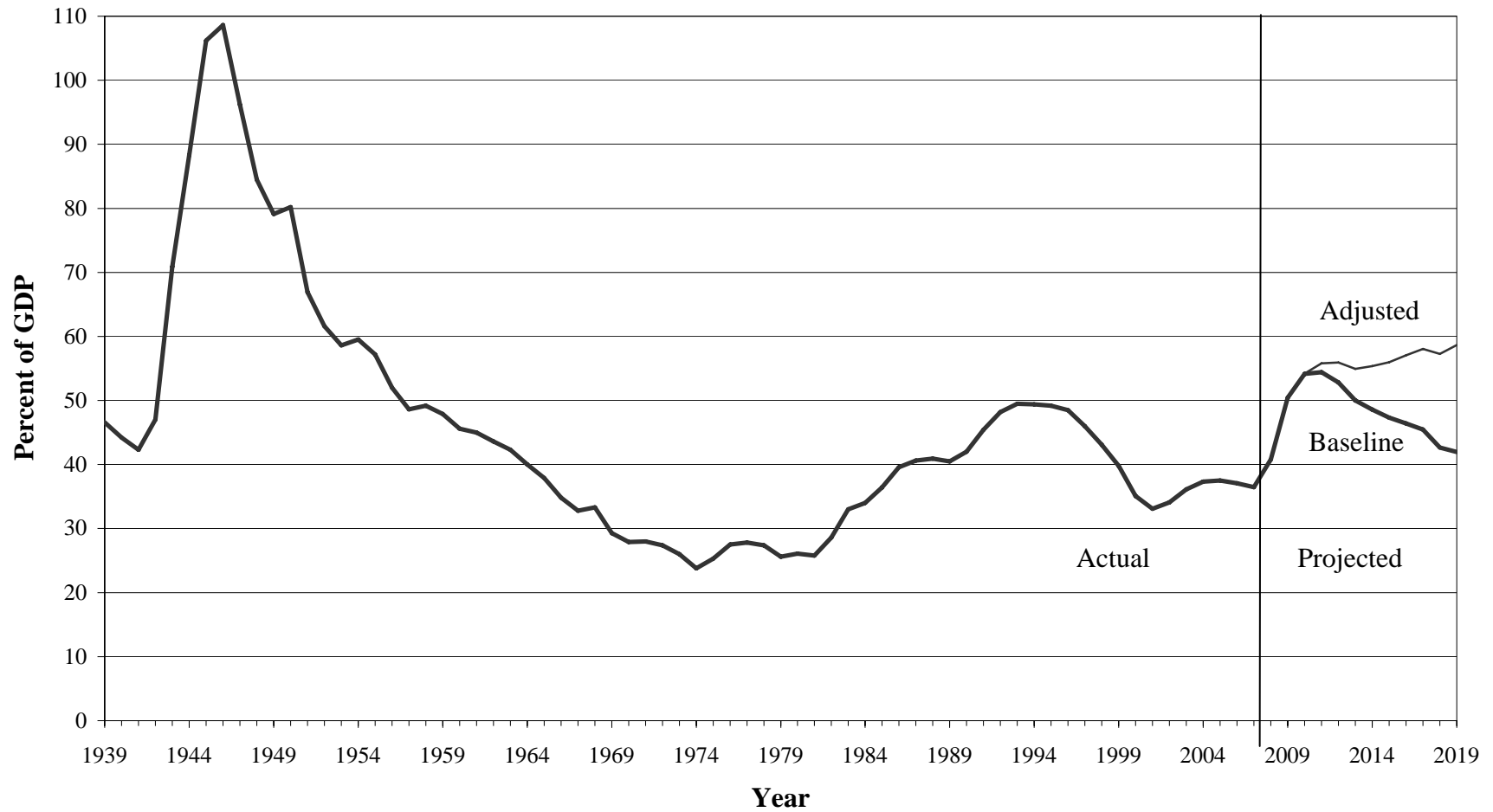**Federal Spending, 1934-2019 (Percent of GDP)**

Source: CBO(2009), Economic Report of the President (2009). Authors' calculations. See adjustments made in Table 1.

Figure 3
**Federal Surplus or Deficit, 1934-2019 (Percent of GDP)**

Source: CBO(2009), Economic Report of the President (2009). Authors' calculations. See adjustments made in Table 1.

Figure 4
Public Debt as a Share of GDP, 1939-2019

Source: Authors' calculations using CBO (2009), Economic Report of the President (2009), imputed debt service
from the CBO interest matrix and the TPC Microsimulation Model. See adjustments made in Table 1.

Figure 5
Unified Deficit or Surplus as a Share of GDP
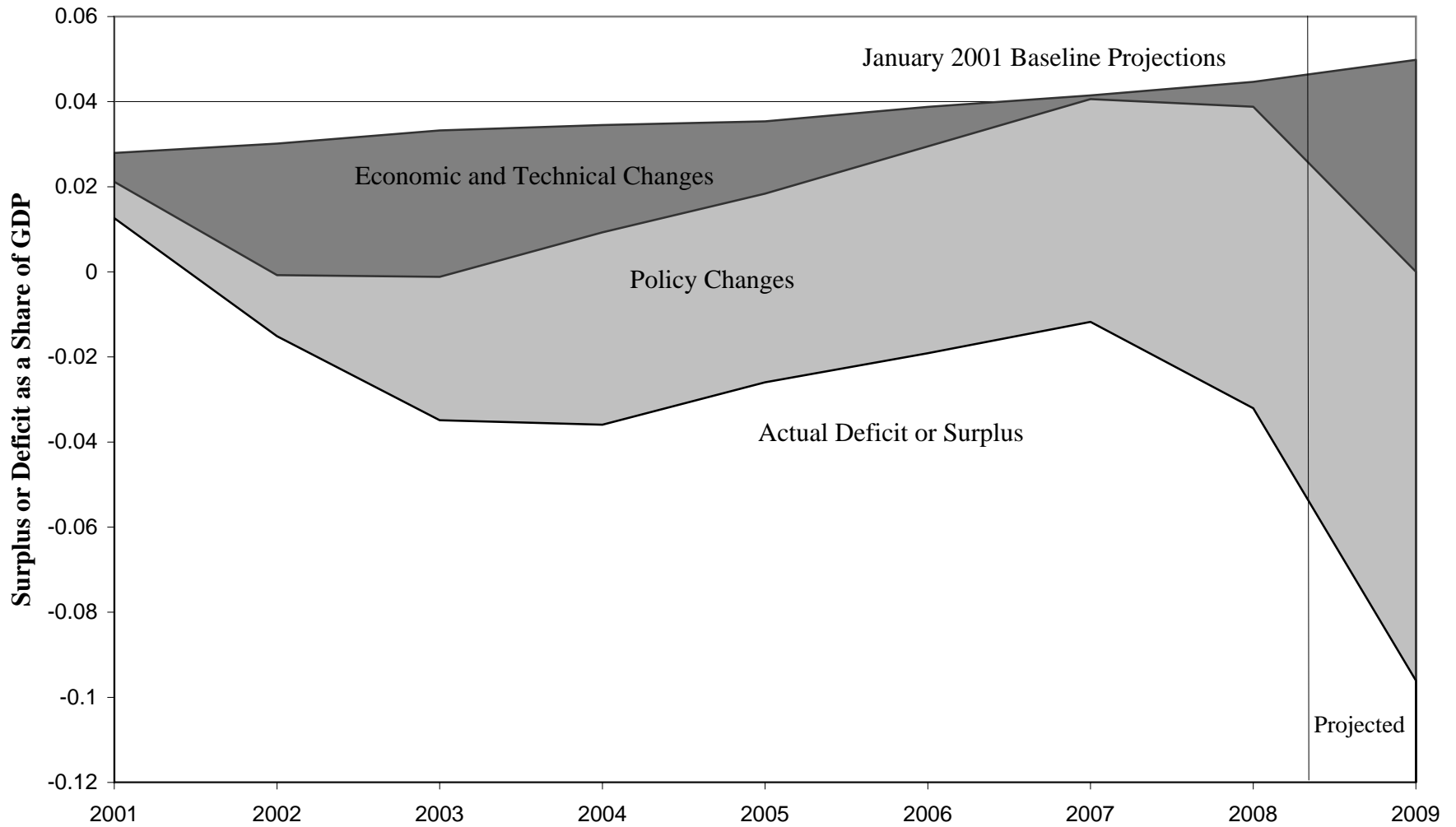
CBO (2009), CBO (2001). Authors' calculations. 2009 projections include HR1 costs.

Figure 6
Budget Deficits Under Various Scenarios
Share of GDP, 2007-2019
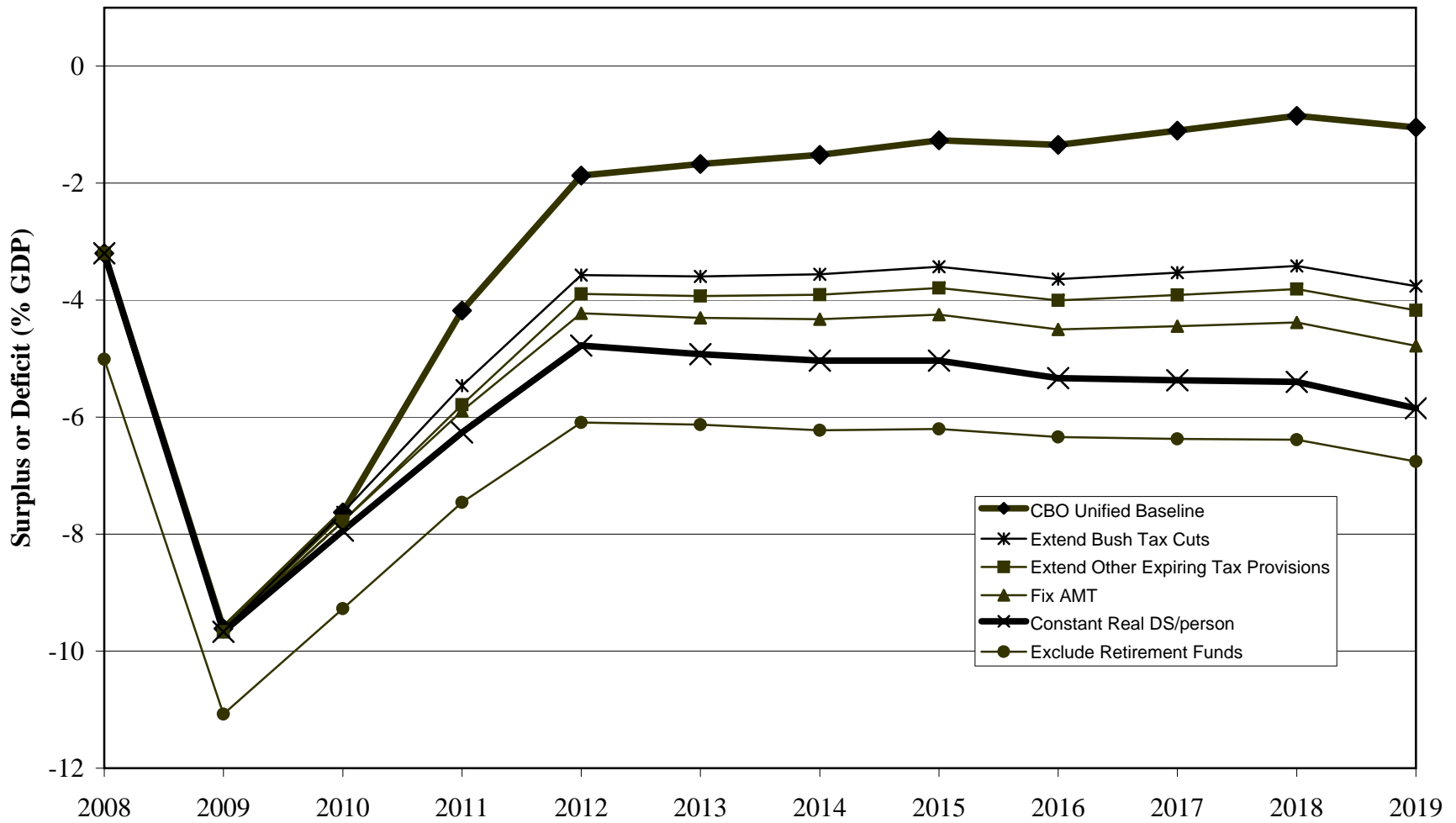
CBO (2009). Includes economic HR1 stimulus costs.

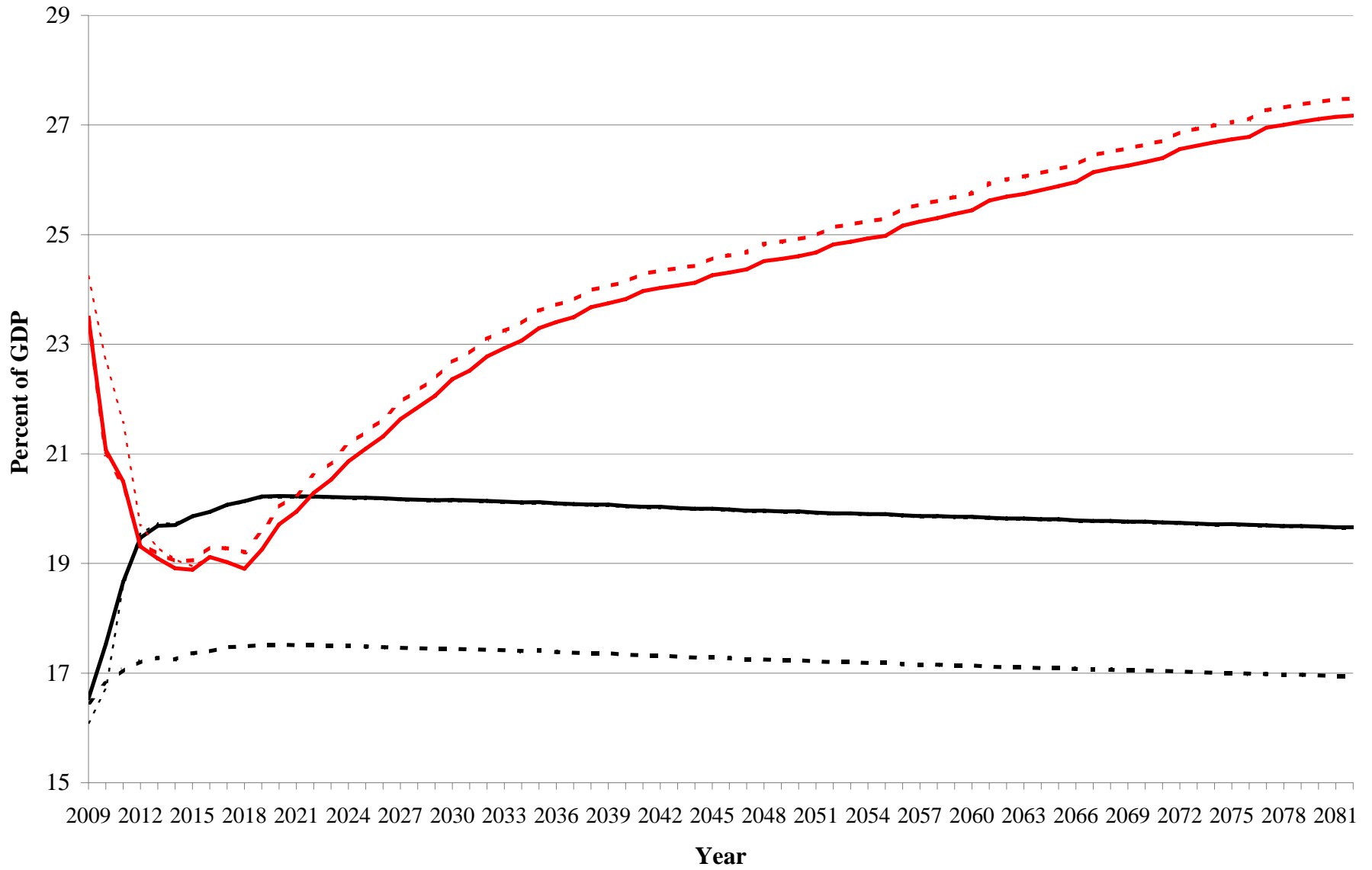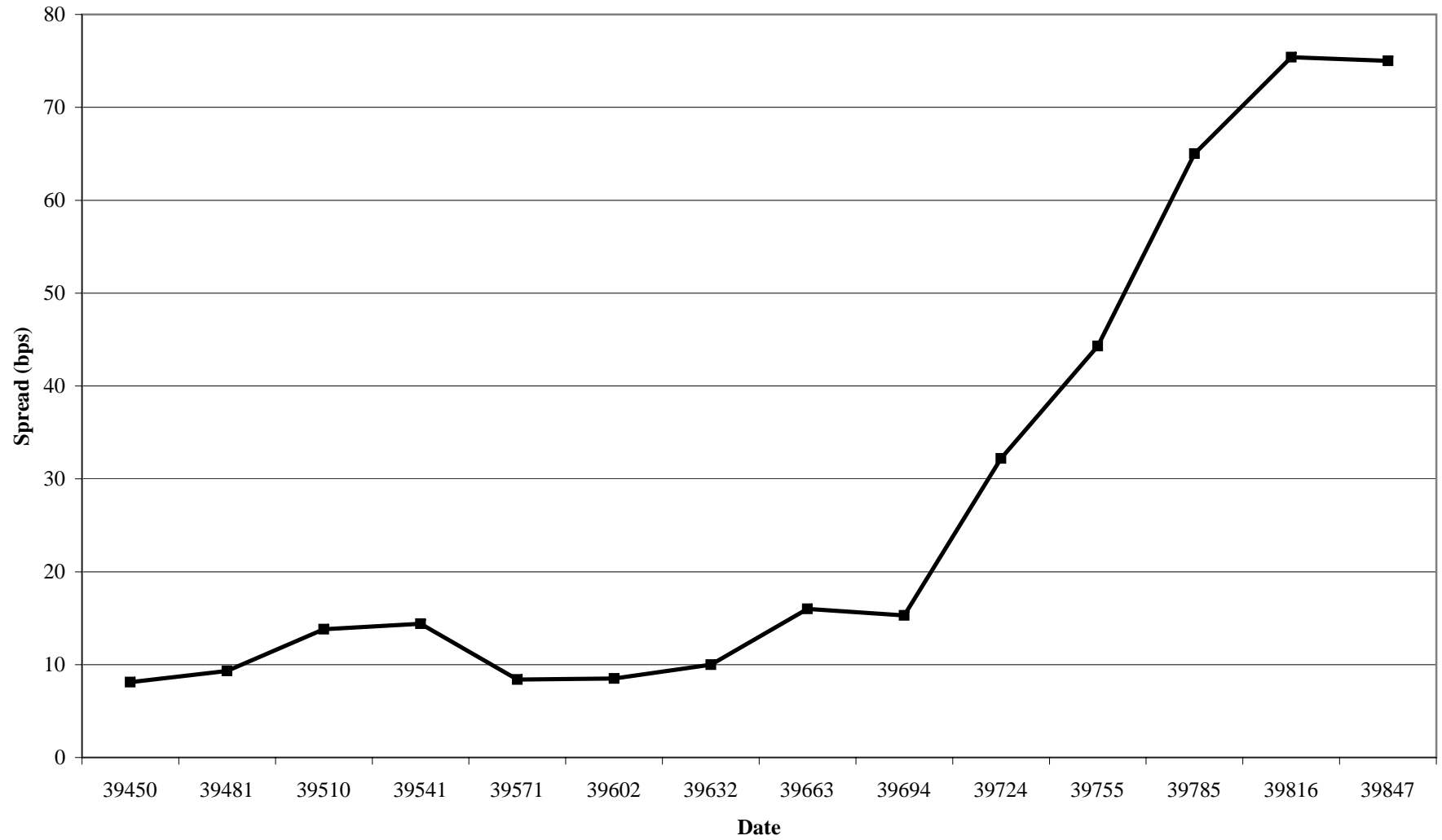**Figure 7**
**Revenues and Expenditures as a Percent of GDP**

Figure 8
Price of Credit Default Swaps on 5-year Senior U.S. Treasury Debt

Source: Bloomberg. CDS spreads calculated by Bloomberg using the JP Morgan pricing model. Spread represents the amount paid per year for a given amount of default protection.

Figure 9
Implied Probability of Default on 5-Year Senior U.S. Treasury Debt
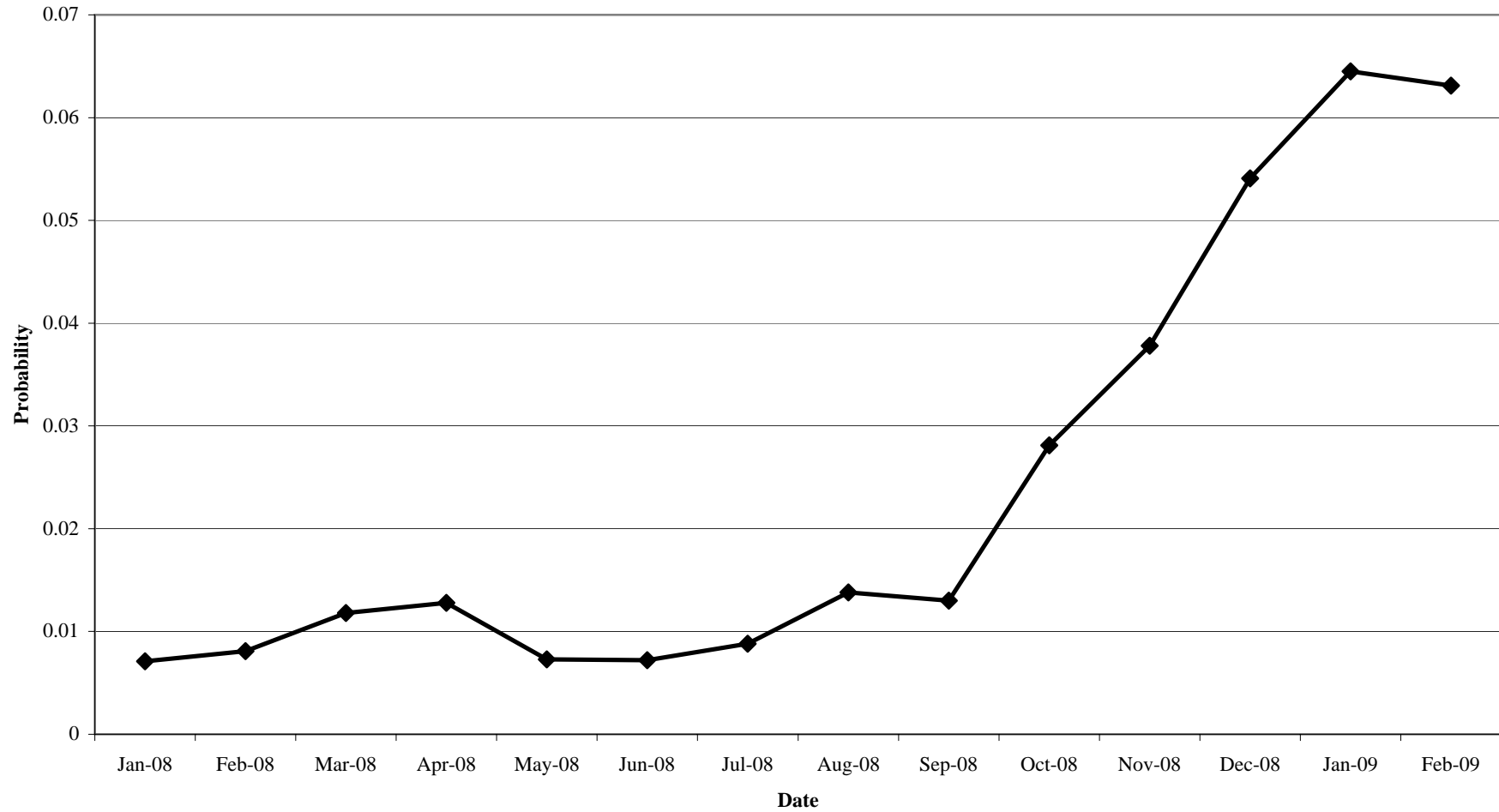
Source: Bloomberg. Based on Credit Default Swaps. The probability that the United States will default on 5-year treasury bonds at any time within 5 years of the date of initiation of the CDS contracts shown above. Calculated by Bloomberg using the JP Morgan pricing model. Determines the implied probability of default from the par CDS spreads and assumes a recovery rate of 40 percent.