



American Enterprise Institute for Public Policy Research

The Deficit Endgame

Kevin Hassett

American Enterprise Institute

Desmond Lachman

American Enterprise Institute

Aparna Mathur

American Enterprise Institute

AEI WORKING PAPER #160, September 17, 2009
www.aei.org/workingpapers
www.aei.org/paper/100051

The Deficit Endgame

Kevin A. Hassett
American Enterprise Institute
Desmond Lachman
American Enterprise Institute
Aparna Mathur
American Enterprise Institute

First version: September 17, 2009

Abstract

In 2009, the federal deficit will be 13 percent of GDP. This is the highest it has been since the four year period during World War II, when deficits averaged about 20 percent of GDP. The long-term budget outlook is equally troubling. The CBO projects that under the Obama Administration, the cumulative deficit for the period 2010-2019 will be approximately \$9.1 trillion. In other words, the average deficit per year will approach \$1 trillion. In adjusted estimates, we project the deficit under more realistic assumptions, and also factor in the possible costs of health care reform. Our adjustments add at least another trillion dollars to budgetary costs over the next ten years—a total deficit of nearly \$10.2 trillion.

Countries with deficits this high have historically proceeded down three divergent paths. Some have chosen fiscal consolidation, others have chosen to attempt to inflate away the debt, and others have simply defaulted, if not intentionally, because of the failure to pursue either of the first two strategies.

In this paper, we discuss the historical evidence along each of these three paths, and compare the current U.S. situation to past experiences. We find that the most successful policy responses to high deficits have mimicked that adopted by the U.S. following World War II, that is, successful consolidations have generally reduced spending. Failure to do so exposes the U.S. government to significant default risk that could, if history is a guide, emerge as a factor in financial markets without significant notice.

I. Introduction

According to several recent reports issued by the Congressional Budget Office (CBO), the U.S. federal budget is on an unsustainable path. In fiscal years 2009 and 2010, the federal government will record its largest budget deficits as a share of GDP since shortly after World War II. As a result of those deficits, federal debt held by the public will soar from 44 percent of GDP at the end of fiscal year 2008 to 61 percent at the end of fiscal year 2010. The current deficit is due in part to the stimulus legislation and efforts to stabilize financial markets. CBO (2009a) projects that spending related to such economic weakness will push primary spending (defined as all spending, except interest payments on federal debt) up to 26 percent of GDP this fiscal year, the highest since World War II.

The long-term budget outlook is equally troubling. The CBO report (2009b) projects that under the Obama Administration proposals, the cumulative deficit for the period 2010-2019 will be approximately \$9.1 trillion. In other words, the average deficit per year will approach \$1 trillion. After 2019, the situation is expected to worsen with deficits (under certain scenarios) projected at 17 percent of GDP by 2040.

These projections raise serious concerns about the long-term sustainability of U.S. fiscal policy. If spending grows as projected and revenues do not rise at a matching rate, annual deficits will climb and federal debt will grow significantly. As debt increases, a higher and higher share of national output will be devoted to interest payments, and the level of taxation needed to sustain government becomes historically unprecedented. Large budget deficits would reduce national saving, lead to more borrowing from abroad

and also lower domestic investment. If such a path is to be averted, then changing policy sooner reduces the size of the problem significantly.

In this paper, we provide an overview of the current fiscal situation using projections from the CBO, and make adjustment to account for likely deviations from CBO baselines. Our calculations suggest that the U.S. fiscal situation is comparable to that experienced shortly after World War II. As that fiscal hole was filled relatively quickly, we review policy actions taken at that time and discuss their feasibility today. We then explore policy actions taken by other countries in similar situations, and evaluate the economic costs associated with different strategies.

II. The Fiscal Situation

As a starting point, we provide projections of federal revenues, spending and debt levels from the June 2009 CBO report titled the *Long-Term Budget Outlook*. These are long-term projections through 2080 (shown up until 2040 in this paper in Table 1) under two different assumptions about federal laws and policies. The first set of assumptions forms the basis for the “extended baseline scenario”. This adheres most closely to current law, following CBO’s 10-year baseline budget projections and then extending the baseline concept beyond that 10-year window.¹ The second set of assumptions leads to the “alternative fiscal scenario”. This scenario deviates from CBO’s baseline even during the next 10 years because it incorporates some policy changes that are widely expected to

¹ CBO’s baseline is a benchmark for measuring the budgetary effects of proposed changes in federal revenues or spending. It comprises projections of budget authority, outlays, revenues, and the deficit or surplus calculated according to rules set forth in the Balanced Budget and Emergency Deficit Control Act of 1985. Those projections are not intended to be predictions of future budgetary outcomes; rather, they represent CBO’s best judgment of how economic and other factors would affect federal revenues and spending if current laws and policies did not change.

occur and that policymakers have regularly made in the past. For instance, under the alternative fiscal scenario, tax provisions in JGTRRA and EGTRRA are extended and AMT parameters are indexed for inflation after 2009. Also, Medicare physician payment rates grow with the Medicare economic index rather than at the lower growth rates scheduled under the sustainable growth rate mechanism. In contrast, the extended-baseline scenario assumes that the Bush tax cuts will be allowed to expire as under current law, that the AMT will cover a larger and larger number of people (more than 40 million households by 2017 (Tax Policy Center 2009) and that Medicare's sustainable growth rate mechanism will reduce payment rates for physicians by 21 percent in 2010 and then by a further 4 percent or 5 percent annually for at least the next few years. However, the extended baseline scenarios are unrealistic. Under the President's budget, many of the tax cuts have been extended and the AMT has been indexed for inflation. Further, since 2003, the Congress has acted to prevent reductions in Medicare payments to physicians. For all of these reasons, many budget analysts believe that the alternative fiscal scenario presents a more realistic picture of the nation's underlying fiscal policy than the extended-baseline scenario does.

Figures 1, 2 and 3 show the revenue, spending and debt projections under the alternative and extended baseline fiscal scenario. The figures clearly show a divergence in debt levels over the long-term under the two scenarios. Revenues are lower and spending higher under the alternative fiscal scenario, leading to a debt level of nearly 83 percent of GDP by 2019 and 223 percent by 2040. Table 1 shows total revenues and spending by source for the period 2010 to 2040 under the more realistic alternative fiscal scenario.

Another way to measure the federal government's financial status is the fiscal gap. This represents the extent to which the government would need to immediately and permanently raise tax revenues, cut spending, or use some mix of both to make the government's debt the same size (relative to the size of the economy) at the end of that period as it was at the beginning. Under the alternative fiscal scenario, the fiscal gap is 5.4 percent of GDP over the next 25 years and 8.1 percent over the next 75 years. In other words, under that scenario (ignoring the effects of debt on economic growth), an immediate and permanent reduction in spending or an immediate and permanent increase in revenues equal to 8.1 percent of GDP would be needed to create a sustainable fiscal path for the next three quarters of a century. If the policy change was not immediate, the required percentage would be greater.

Note that even the projections under the alternative fiscal scenario may be somewhat conservative. This is because the CBO assumes that all economic variables, such as economic growth and real interest rates, are unaffected by rising federal debt levels. However, if debt actually increased as projected under either scenario, interest rates would be higher to some extent than otherwise and economic growth would be slower. The rising debt would reduce the size of the domestic capital stock (businesses' equipment and structures as well as housing) and decrease U.S. ownership of assets in other countries while increasing foreign ownership of assets in the United States. Those changes would slow the growth of gross national product (GNP) and, as the debt burden rose, could eventually lead to a decline in economic output.

The effects would be most striking under the alternative fiscal scenario. In CBO's estimation, the increase in debt under that scenario would reduce the capital stock by

more than 20 percent and real GNP by 9 percent in 2035, compared with the levels that would occur if the debt remained roughly at its current size relative to the economy. Under the extended-baseline scenario, federal debt would be less threatening in the near term but would lead to significant economic harm in the long run. Those economic effects mean that actual fiscal pressures under current laws and policies would be even greater than CBO's long-term budget projections suggest, because slower growth would limit revenues and a smaller capital stock would imply higher interest rates on government debt and other financial instruments.

Note that these long-term projections capture broad changes that are expected to occur over the course of the next few decades. For instance, while they model the extension of EGTRRA and JGTRRA, they do not specifically model the effect of extending the tax cuts only to the lower income groups. The Administration's budget however makes the distinction that for taxpayers with income above certain levels, the income tax rates of 36 percent and 39.6 percent scheduled to go into effect in 2011 under current law would apply. For the remaining taxpayers, tax rates would be at 2010 levels specified in EGTRRA. To understand the impact that these specific proposals would have on the fiscal deficit, we next turn to an analysis of the Administration's budget proposals.

II.A. The Administration's Budget

The CBO provided an analysis of the Administration's budget following the release of the full budget proposal in May for fiscal year 2010. The CBO (2009b) baseline projections and the effect of the President's proposal on the baseline are shown in Table 2. Under the President's policies, the deficit in 2009 will equal \$1.8 trillion or 13 percent of GDP. This is higher than the CBO baseline estimate (under current law) by

\$157 billion due to the additional spending by the government on stabilizing financial markets and the ongoing military operations in Iraq and Afghanistan. The cumulative deficit over the 2010-2019 period would equal \$9.1 trillion, more than double the cumulative deficit projected under the CBO baseline.

The differences under the current law assumptions of the CBO baseline and the President's budget arise from several sources. Of the various revenue proposals, modifying and extending provisions of JGTRRA and EGTRRA would have the largest effect, reducing revenues by \$1.9 trillion. Note that the baseline assumes that these provisions will expire at the end of 2010. In addition, indexing the AMT for inflation would reduce revenues by \$447 billion and the proposal to permanently extend the Making Work Pay Credit would reduce them by \$381 billion. The projections also assume that the proposal to reduce greenhouse gas emissions would raise an estimated \$632 billion in revenues between 2012 and 2019. Further, the international tax proposals would raise revenues by \$161 billion.

Finally, the budget assumes that the cost of health care reform is zero. Health care reform benefits may be a combination of revenue reductions and spending increases and are assumed to exactly offset the savings dedicated to the proposal on both the revenue and outlay sides of the budget.

Assuming that all of the President's proposals are eventually adopted, the CBO estimates that over the next decade, the budget deficit would average about 5.2 percent of GDP. The 2009 deficit is projected to be 13 percent with a subsequent decline to 3.9 percent by 2013 and then an increase to 5.5 percent by 2019. The increase is primarily the result of rising health care spending and debt-service costs. As a result, public debt would

rise from 57 percent of GDP in 2009 to 82 percent by 2019. By the Administration's own estimates compiled by the Office of Management and Budget, the deficit is likely to be at about 3.7 percent by 2019. The lower deficit projection is the result of differing economic assumptions between the CBO and the Administration. In particular, CBO assumes lower rates of inflation and growth in real GDP. The Administration's budget assumes that GDP will grow by more than 3 percent in 2010 and more than 4 percent for the next three years. However, more realistic estimates by the OECD (2009) and the IMF (2009) predict net two year declines of 4 percent and 2.8 percent. Such assumptions lead to projections of revenues and outlays that are \$2.6 trillion and \$549 billion lower than the Administration projects, respectively. Technical differences (those not directly attributable to economic factors or the impact of new legislation) account for just \$11 billion of the variation from 2010 to 2019.

The government's budgetary policies can have an effect on the economy through various demand and supply channels. For instance, changes in tax rates can affect people's decisions to work and save. Similarly changes in government spending and transfers can affect short run demand. In addition, policies could affect the size and composition of the capital stock, the quantity and quality of the labor force, and the pace of the nation's technological progress. CBO (2009b) analyzed the overall effects of the President's budgetary proposals using macroeconomic forecasting models created by two private forecasting firms-Macroeconomic Advisers (MA) and IHS Global Insight (IHS). Using the Macroeconomic Advisers Model, the CBO projects that the economic effects of the proposals would increase the deficit by \$190 billion while the IHS model predicts a

reduction in the deficit of \$32 billion over the period 2010-2014.² The difference in predictions arises from different assumptions about interest rates in the two models. The MA model assumes that the Federal Reserve would raise interest rates significantly in order to prevent high inflation rates under the President's proposals. High interest rates imply greater interest payments on the federal debt. Higher rates also decrease revenues since they tend to shift income from higher taxed categories (such as profits) to lower taxed categories (such as interest income). Since most analysts predict an increase in inflation and interest rates as the economy starts to recover, this is not an unlikely scenario.

II.B. Adjusted Budget Numbers

In Table 3, we adjust the CBO's estimate of the President's budget by allowing for the possibility that the Administration is unable to pass two of the proposals-climate change legislation and reform of the international tax system. This has a tremendous impact on revenues. Out of all the President's proposals, climate change legislation is the largest source of revenues (at \$632 billion), followed by reform of the international tax system (at \$161 billion). However, the passage of these bills is uncertain.

In addition, we assume that even if the health reform bill is passed, it is not entirely budget neutral. We therefore use the CBO and JCT estimate of the costs of H.R. 3200 over the next decade to assess the impact of that bill on the deficit.³ According to the CBO, the overall addition to the deficit would be \$239 billion in the period 2010-2019, with deficits projected at \$65 billion in 2019. That estimate reflects a projected 10-

² These projections are done only for the short-term since the models that CBO used to estimate the overall effects are not suited to projecting the effects of changes in demand beyond 5 years.

³ CBO (2009c)

year cost of the bill's insurance coverage provisions of \$1,042 billion, partly offset by net spending changes that CBO estimates could save \$219 billion over the same period and by revenue provisions that JCT estimates would increase federal revenues by about \$583 billion.

Under this adjusted estimate (accounting for all three possibilities), the total deficit for 2010-2019 increases to \$10.1 trillion i.e. an additional \$1 trillion would be added to the deficit. In 2019, the deficit would be close to 6 percent of GDP. Even if we assume that health care reform is in fact budget neutral, the cumulative deficit for 2019 would still be \$9.9 trillion.

At the time of writing this paper, the CBO came out with a revised version of its baseline estimate of the deficit. The August (CBO, 2009e) baseline projects a marginally lower deficit for 2009 of \$1.58 trillion. However, over the entire 2010-2019 period, the deficit is expected to be higher by nearly \$2.7 trillion relative to the March estimates. The report however does not revise the CBO's estimate of the President's budget. Therefore, in Table 4, we present the projected deficits using the August baseline and the June estimates of the President's budgetary proposals on the deficits. We also incorporate our adjusted budget estimates and show what deficits would look like under the scenario of high health care costs and no revenues from climate change and international tax reform. As per the new CBO baseline, the deficit in 2009 will be approximately 11 percent of GDP. However, it will decline to 3.4 percent by 2019. Debt held by the public is projected to exceed 61 percent of GDP by the end of next year, which is the highest level since 1952, and reach 68 percent by the end of 2019. That accumulating federal debt, coupled with rising interest rates, would lead to a near tripling of net interest payments

(relative to the size of the economy) between 2009 and 2019. Incorporating all of the President's proposals, the budget deficit would average about 6.8 percent of GDP by 2019. Under the adjusted budget estimates, the deficit will be even higher at 7.3 percent of GDP. In terms of dollars, the deficit will be approximately \$11.8 trillion for 2010-2019 under the President's budget and \$14.3 trillion under the adjusted budget.

To summarize, our discussion in this section has shown that under plausible scenarios, the effect on the deficit in the near term and in the long run is such as to raise fundamental questions about economic sustainability. Table 5 shows that deficits are projected to average about 5 to 7 percent in 2019.

III. Debt Management Lessons from Previous Decades

III.A. Fiscal Consolidation

The crisis today has resulted in the sharpest and most pervasive rise in debt-to-GDP ratios since World War II for the U.S. and other advanced economies. To some extent, that is good news, because the decades after World War II saw a dramatic reversal of the U.S. government's budget fortunes which provides a guide to an approach that has worked in this country before.

In the U.S., after World War II, there was a massive increase in debt-to-GDP ratios to 121.7 percent in 1946, followed by a rapid decline to 64 percent in 1956 and 43.5 percent by 1966 (Table 6). In fact, debt reduction was sustained throughout the 1960s and 1970s and it was only in the 1980s that debt levels started to rise again. A principal factor underlying most prior cases of successful debt reduction is sustained and rapid economic growth accompanied by dramatic reductions in spending. For instance,

between 1946 and 1966-the 20 year period following World War II-receipts (or revenues) as a percent of GDP remained virtually unchanged at slightly above 17 percent. However, spending declined by 7 percentage points, from 24.8 percent to 17.8 percent.⁴ Of course, the biggest component of the decline in spending was defense spending, which was cut by half within a period of 10 years from \$83 billion in 1945 to \$43 billion by 1955 (approximately 37 percent of GDP to 11 percent of GDP). Over this period, the deficit declined from a high of 21.5 percent to 0.8 percent. In the 1980s as well, the rise in the federal debt was followed by declining deficits from 1993 to 1997 and surpluses from 1998 to 2001.

This pattern of basing a successful consolidation on reduced spending has been repeated many times in other countries. In recent years, a large number of European Union (EU) countries faced the challenge to restore or achieve budgetary discipline. Larch and Turrini (2008) review episodes of fiscal consolidations for all 27 EU member countries since the 1970s. They define a consolidation as an improvement in the cyclically-adjusted primary budget (CAPB) balance of at least 1.5 percent of GDP which is either achieved in one single year or over a period of three years.

Episodes of the first type are referred to as ‘cold shower’ consolidations to highlight the relatively strong tightening over a period of one calendar year. Episodes of the second type are termed gradual adjustments. Table 7 summarizes some basic information by country and by type of consolidation. It shows a clear prevalence of the cold shower type of adjustment which accounts for two-thirds of the total number of years in which fiscal consolidations have taken place. Gradual adjustments are

⁴ <http://www.gpoaccess.gov/usbudget/fy10/hist.html>

significantly less frequent. The clear prevalence of abrupt and sizeable fiscal corrections is evidenced by the frequency distribution of the change in the CAPB during years of consolidation displayed in Figure 4A. In close to 70 percent of the years referring to a consolidation episode the CAPB improved by 1.5 percent of GDP or more. The high frequency of annual corrections of 3 percent or more largely reflects the experience of the new or recently acceded Member States. With a view to EU accession these countries implemented at times impressive fiscal adjustments. Almost 30 percent of the consolidation years recorded for the new Member States gave rise to an annual improvement of the CAPB of 3 percent of GDP or more. In general, countries with larger initial deficits engaged in cold shower type adjustments. In the sample, nearly 1 in 3 fiscal consolidations are successful (Figure 4B).⁵

A fairly rich literature has now emerged on the determinants and economic effects of successful fiscal consolidation. The first comprehensive empirical analysis of fiscal adjustments is by Alesina and Perotti (1995). This paper finds that successful adjustments are mainly expenditure based, with a focus on primary current expenditure. In other words, cuts in expenditure are more effective than tax increases in making consolidations successful. Reductions in public sector employment and wages and in transfers are found to be particularly conducive. This result has been replicated and confirmed by a series of later studies such as Alesina and Perotti (1997), Alesina and Ardagna (1998), von Hagen et. al (2002), Briotti (2004) and Lambertini and Tavares (2005).

⁵ A successful fiscal consolidation is one in which in the three years after the end of the consolidation episode the CAPB does not deteriorate by more than 0.75% of GDP in cumulative terms compared to the level recorded in the last year of the consolidation period.

Some important lessons can be learned by studying specific examples of countries that underwent successful consolidations. Spain underwent three cold shower consolidations in 1986, 1992 and 1997 that were all successful.⁶ The overall fiscal adjustment in the early 1990s was dominated by the ‘cold shower’ consolidation of 1992 which improved the CAPB by 1.7 percent of GDP, brought about by increasing cyclically adjusted revenues by almost 2.5 percent of GDP. The revenue increase was due to changes in the income tax law to reverse the income tax reform of 1991 and due to an intensified fight against tax fraud. On the expenditure side, a structural reform of the social security system tightened eligibility for unemployment benefits and sickness transfers. Moreover, government investment was cut back markedly. The Maastricht criteria and the determination to join the EMU from the outset backed the expenditure-based fiscal consolidation process initiated in the mid-1990s.

The largest improvement of the CAPB of 1.8 percent of GDP was achieved in 1996, hence qualifying as a ‘cold shower’ consolidation. Overall, the CAPB improved by 2.6 percent of GDP in 1994–97, when the economic conditions were still affected by the consequences of the 1993 recession. The strong decrease of cyclically adjusted expenditure of 1.2 percent of GDP in 1996 was exclusively the result of the retrenchment of primary expenditure. Expenditure measures adopted in the course of the consolidation process encompassed cuts in social benefits other than social transfer in kind as well as cuts in government consumption and investment. The cut of government consumption was achieved by a continued wage freeze combined with a reduction in the number of employees and the decline in the purchase of goods and services. Structural reforms reduced expenditure pressures stemming from social benefits, namely unemployment

⁶ http://ec.europa.eu/economy_finance/publications/publication338_en.pdf

compensations and temporary disability payments by tightening eligibility criteria and shifting a larger part of the initial cost to firms.

Italy underwent seven consolidation periods in 1970–2006 (1976, 1982, 1983, 1991, 1992, 1993 and 1997) all of which were ‘cold shower’ consolidations and, except for the episodes in 1983 and 1997, all of which were successful. The most impressive adjustments were enacted in the 1990s, after the deficit and the debt ratio had reached 11.4 percent of GDP and 95 percent of GDP respectively. The CAPB improved by more than 10 percent of GDP over the period 1990–97, when macroeconomic conditions were generally not supportive. The fiscal adjustment was almost exclusively revenue based. Nevertheless, the successive consolidations were comparatively effective in curbing the medium term expenditure trends. Fiscal consolidation in the 1990s was helped by a number of structural reforms. Primary expenditure growth was curbed by a cumulative cut in government spending of 0.6 percent of GDP over the consolidation years, and also by a wage freeze in the public sector combined with more stringent hiring limits.

In an interesting extension, Larch and Turrini (2008) take a brief look at consolidation episodes that did not succeed. In the three years following an unsuccessful consolidation episode, primary expenditures increased on average by almost 2 percent of GDP. Classifying expenditures by Function of Government, they find that there are essentially two expenditure categories that rebound in the aftermath of unsuccessful fiscal adjustments, namely health and social protection. An example of this is Hungary, which underwent two cold shower consolidations in 1999 and 2003. However, every episode of fiscal tightening was followed by an even stronger fiscal expansion, so that overall the CAPB declined by 10 percent of GDP between 1998-2006. This deterioration was partly

due to the continued high increases of public sector wages and social benefit spending as well as a revenue loss due to the exemption of old-age pension from the calculation of taxable income.

This should serve as a warning for economies embarking on such consolidations today since these social expenditure categories typically represent a large fraction of the budget and will bear the budgetary impact of an ageing population.

While the one clear lesson from prior experiences of successful debt reduction is that of restraining spending, what is less clear is how to go about doing so in today's American economy. Since the 1960s, the composition of spending in the U.S. and other industrialized economies has shifted towards social welfare entitlements and away from defense.⁷

For a time, the costs of these social welfare programs were financed through budgetary growth and transfers from other parts of the budget, such as defense. Over time, however, these programs have grown tremendously. According to the CBO (2009a), spending on the three largest entitlement programs-Medicare, Medicaid and Social Security-has grown from 25 percent in 1975 to 45 percent today. Over the next 75 years, total spending on these programs will grow even more due to population aging and higher health care costs per person. CBO (2009a) projects that net federal spending on Medicare and Medicaid will rise from about 5 percent of GDP in fiscal year 2009 to about 10 percent in 2035 and over 17 percent in 2080. Spending on Social Security is projected to rise at a much slower pace, from almost 5 percent of GDP in 2009 to about 6 percent in later years. These projections assume that the programs will continue to pay

⁷ Ippolito (2003)

benefits as currently scheduled even though the trust funds for Medicare and Social Security are projected to become insolvent at some point in the near future.

Therefore, one obvious starting point for debt reduction is restraining the spending on these programs. This approach has not been adopted by the current administration. As we mentioned earlier, the cost of health care reform as estimated by the CBO and the JCT is approximately another \$239 billion over the next decade, but the costs could easily exceed \$1 trillion. The CBO projects that in the absence of specific constraints on growth, the new spending associated with health care reform would probably increase over time roughly with the underlying costs of health care and thus would grow as fast as spending on other federal health care programs.⁸ From that perspective, a large-scale expansion of insurance coverage would represent a permanent increase of roughly 10 percent in the federal budgetary commitment to health care.

It also bears emphasizing that if a reform package achieved “budget neutrality” during its first 10 years, budgetary savings in the long run would not be guaranteed—even if the package included initial steps toward transforming the delivery and financing of healthcare that would gain momentum over time. Different reform plans would have different effects, of course, but two general phenomena could make the long-run budgetary impact less favorable than the short-run impact: First, an expansion of insurance coverage would be phased in over time to allow for the creation of new administrative structures such as insurance exchanges. As a result, the cost of an expansion during the 2010–2019 period could be a poor indicator of its ultimate cost. Second, savings generated by policy actions outside of the health care system would probably not grow as fast as health care spending. Such would be the case for revenues

⁸ CBO (2009d)

stemming from the Administration's proposal to limit the tax rate applied to itemized deductions and from proposals to tax sugar-sweetened soda or alcohol, for example.

As is clear from the President's budget, the administration is focusing not on restraining spending, but on increasing revenues. This is contrary to the received wisdom from the EU fiscal consolidation experience. That experience clearly shows that cuts in government expenditure are more likely to lead to sustained declines in the debt-to-GDP ratio than those based upon revenue increases. The only spending reductions in the budget are in the Family Federal Education Loan Program, which are fairly modest at \$87 billion. The big revenue items are the climate change legislation and the international tax reform proposals, which have yet to gain consensus. Therefore, there is little likelihood that the administration will be able to return the country to a path of fiscal sustainability in the near future.

III.B. Inflation

Theoretically, another way to reduce the real value of government indebtedness would be through a policy of high inflation. Reinhart and Rogoff (2008a) document that the presence of high domestic debt may be a factor in the government's incentive to inflate. We see in Table 8, for example, that when post-World War I inflation first spiked up to 66 percent in Germany in 1920, domestic debt was almost triple the size of the monetary base. In the case of Brazil, debt was almost 20 times the size of the money base. The importance of domestic debt is hardly confined to hyperinflations. Table 8 lists a number of high-inflation episodes as well. Domestic public debt was almost 80 percent of total domestic liabilities (including currency) in 1945 Japan, when inflation went over 500 percent. In all of the cases listed in Table 8, domestic public debt is at least the same

order of magnitude as the monetary base (with the exception of Norway in 1918, where it was slightly below). In the U.S., the monetary base for July 2009 was \$1695.7 billion, while the debt for 2009 is projected to be \$7,612 billion.⁹ Therefore, the debt is approximately 4.5 times the monetary base. Even if we only focus on domestic debt, the ratio is higher than 2 i.e the debt in 2009 will be more than twice the monetary base. The fact that nominal debt is so large compared to the monetary base leads to the risk that the government may attempt to lower the real value of debt through a spike in inflation.

However, unless the government engineers a sudden and unanticipated inflationary burst, one would expect that markets would shorten the duration of their debt holdings and demand higher interest payments on longer dated debt to compensate them for the risk of inflation. This would imply that inflation would have to rise to very high levels for an extended period of time to make any dent on the government's debt to GDP ratio.

It is highly questionable whether such a policy is possible in the U.S. The Federal Reserve has the legal responsibility to provide price stability, and the experience of the 1970s has ingrained in monetary policymakers the view that the economic costs of high inflation are significant.¹⁰

III.C. Debt Default

The final resort of a government unable to meet its debt obligations is default. Investors' perceptions about the likelihood of a U.S. default are captured in the credit default swap markets. In September 2008, data on these swaps showed that the price of

⁹ <http://research.stlouisfed.org/fred2/series/AMBNS?cid=124>

¹⁰ The re-appointment of Ben Bernanke as Federal Reserve Chairman makes the adoption of such a policy a fairly remote possibility.

purchasing insurance against default on 5-year senior U.S. treasury debt was around 10 basis points. This rose to 90 basis points in the beginning of this year and is currently at about 30 basis points. The implied likelihood of default is approximately around 4 percent (Auerbach and Gale, 2009). Hence there has been a visible increase in the likelihood of a U.S. debt default.

It must be noted that a debt default event need not involve the government putting a sudden stop to interest payments. The most likely scenario is that the government arrives at the Treasury auction one day, and finds that there are not enough willing buyers for it to roll over expiring debts. At that point, the government may have to change the terms on the expiring debt unilaterally. For instance, in August 1982, the Mexican government suddenly found itself unable to roll over its private debts. Soon after, other countries sought rescheduling arrangements, starting the debt crisis of the 1980s.¹¹

Such a scenario can creep up at any time, and likely would be caused by a sudden panic. Such a panic might be set off by a dramatic policy change in the U.S., such as passage of a fiscally irresponsible health reform, or by external events. For instance, the Standard and Poor's charts show that AAA rated countries generally have net public debt ratios that are below 20 percent of GDP (Figure 5A) and low government deficits (Figure 5B).¹² This would suggest that if the U.S. is indeed on the way to a debt ratio of 100 percent and deficits of about 5 or 6 percent of GDP, it could be risking losing its AAA rating. This could trigger a panic as investors may try to move away from U.S. government bonds to other assets.¹³

¹¹ <http://www.econlib.org/library/Enc1/ThirdWorldDebt.html>

¹² http://www.ratings.com/spf/pdf/fixedincome/KR_sovereign_APrimer_Eng.pdf

¹³ The predictive power of credit ratings for currency crisis and sovereign default is however, surprisingly poor. This became evident in the Asian crisis or, more recently, in the Argentinean crisis. Systematic

A U.S. government default would impose huge costs on the economy and cause a breakdown in globalization as foreign governments would likely retaliate against a U.S. government renegeing on its obligations. This is particularly problematic since the proportion of the government deficit financed by foreigners has already increased to an unprecedented 50 percent (Figure 6). Foreign central banks alone are presently sitting on \$2.3 trillion in U.S. Treasury bonds, out of a total outstanding debt of more than \$7 trillion.¹⁴

Manasse, Roubini and Shennelpfennig (2003) show that this build up in government debt, particularly external debt, is symptomatic of previous sovereign default episodes. Using data on macroeconomic variables, political and institutional variables as well as measures of solvency for 47 countries, the paper concludes that high levels of foreign debt (relative to GDP) increase the probability of default. Looking at the period prior to the default, there is an increase in external debt measures in the year before the crisis and also in the years of the crisis. On average, external debt to GDP averages about 54.7 percent when moving into a crisis year, and 71.4 percent in a crisis year. These numbers are fairly close to currently projected U.S. debt levels, raising the risk of sovereign default. In particular, in June 2009, total external debt (which includes public or government debt as well as the debt owed by residents to all foreigners) was calculated at \$13.4 trillion or more than 90 percent of projected GDP.¹⁵ Of this, total public external

evidence in this regard is presented in Reinhart (2002); Rojas-Suarez (2001); and Larrain, Reisen, and von Maltzan (1997). Related studies have analyzed the determinants of credits ratings. Some studies test whether credit ratings are significantly correlated with a range of economic fundamentals. Measures of external debt, default history, as well as other macroeconomic and political variables are found to be correlated with default/debt-crisis events (e.g., Haque, Nelson, and Mathieson, 1998; Cantor and Packer, 1996; and Lee, 1993).

¹⁴ <http://www.treas.gov/tic/mfh.txt>

¹⁵ <http://www.treas.gov/tic/debta309.html>

debt (which includes only the external debt obligations of the public sector) was approximately \$3.4 trillion.¹⁶ Therefore, public external debt to GDP in 2009 will be close to 24 percent and the ratio of public external debt to revenues will be 1.62. In Figure 7, reproduced from this same paper, public external debt to GDP averaged about 36 percent and the ratio of public external debt to revenues was 1.9 in the year before the crisis. Therefore, by all relevant debt indicators, the U.S. fiscal scenario will soon approximate the economic scenario for countries on the verge of a sovereign debt default.

Recent research by Reinhart and Rogoff (2008b) on the long run history of external sovereign debt defaults is sobering. In this NBER Working Paper, they show that sovereign debt default is far from an isolated event. Over the longer sweep of history there have been fairly regular episodes where all too many sovereign governments have resorted to defaulting or restructuring their government debt. By their count, over 40 percent of countries did so in the aftermath of the Great Depression and over 30 percent did the same in the aftermath of the 1980-82 global economic recession. Two further regularities found by Reinhart and Rogoff (2008b) would seem to be particularly pertinent to today's U.S. context. The first is that those countries most at risk of defaulting on their government debts were those that were overly dependent on capital flows from abroad to finance their government deficits. The second was that sovereign debt default or restructuring tended to be highly disruptive to economic performance in general and to inflation performance in particular.

This latter issue is explored more fully in Reinhart, Rogoff and Savastano (2003). The paper explores the idea of debt intolerance defined as some countries' inability to handle debt levels that would seem manageable by advanced country standards. Such

¹⁶ <http://www.treas.gov/tic/mfh.txt>

countries typically experience serial defaults. For instance, Spain defaulted 13 times between 1500 and 1900, Venezuela has defaulted nine times since the 1800s and more recently, Argentina has defaulted five times on its external debts. This vicious cycle of defaults is perpetuated by the lasting damage that defaults can impose on a country's financial system and the linkages between domestic and foreign markets. Weak financial structures in turn reduce the penalty to default, thereby leading to more defaults at relatively low debt levels. That explains why defaults occur at debt-to GDP ratios that are not excessively high by advanced country standards. Table 9A, reproduced from this paper, shows all episodes of default or debt restructuring during 1970-2001 for middle income emerging economies. On average, about half of the defaults occurred at external debt to GNP ratios that were lower than 60 percent and about 17 percent occurred at debt levels lower than 40 percent of GDP. These are sobering statistics since in 2009 U.S. total external debt to GNP is estimated to be at 90 percent, while public external debt to GNP is likely to reach 24 percent.¹⁷ Therefore, to avoid long-term damage to the U.S. banking and financial systems and escape the spiral of future defaults, the country needs to go to great lengths to avoid this first default.

In another paper, Reinhart and Rogoff (2008a) suggest that the focus on external debts in explaining sovereign defaults is somewhat misplaced. Often countries default on their external obligations at very low thresholds. A reason for this is that they have accumulated huge domestic debts which are often much larger than the monetary base in the run-up to high inflation episodes. For the 64 countries in their sample, domestic debt accounts for almost two-thirds of total public debt. There is a small literature that aims to

¹⁷ U.S. GNP for 2009 was \$14,251 billion, almost similar to projected U.S.GDP for 2009 of \$14,163 billion. Source: <http://research.stlouisfed.org/fred2/data/GNP.txt>

understand why governments honor domestic debts at all (e.g. Persson and Tabellini (2008) or Kotlikoff, Persson and Svensson (1988)). However, the general assumption in the literature is that whereas governments may inflate away debt, outright defaults on domestic public debts are rare. In the Reinhart and Rogoff (2008a) database however, these instances of default are not that rare. There are technically 68 cases of domestic debt default which take place through a variety of mechanisms such as forcible conversions, lower coupon rates, unilateral reductions of principal and outright suspension of payments. Some default episodes are shown in Table 9B, along with the debt levels preceding the default. Table 9C shows the projected debt-to-revenue ratios for the U.S. for 2009-2019, using the CBO August baseline. As for most defaulting countries listed in Table 9B, the average debt is more than three times the projected revenues. It is noteworthy that the ratios would be even higher if we consider projected debts and revenues under the President's budget. The budget adds to the deficit and the debt in every year through a combination of lower revenues and higher outlays. For instance, in 2019, the revenues are projected to be lower by \$273 billion (relative to the CBO baseline) and the deficit (and debt) is expected to be higher by \$739 billion. Therefore the ratio of debt to revenues will be higher than shown in Table 9C.¹⁸

Why would a government refuse to pay its domestic public debt in full when it can simply inflate the problem away? One answer, of course, is that inflation causes distortions, especially to the banking system and the financial sector. Sometimes, the government may view repudiation as the lesser evil. The potential costs of inflation are especially problematic when the debt is relatively short term or indexed, since the

¹⁸ We do not calculate projected debts and the debt to revenue ratio incorporating the President's budget since it would involve making economic assumptions such as those relating to the cost of servicing the debt.

government then has to inflate much more aggressively to achieve a significant real reduction in debt service payments. In other cases, such as the United States during the Great Depression, default (by abrogation of the gold clause in 1933) was a precondition for reinflating the economy through expansionary fiscal and monetary policy.

Of course, there are other forms of *de facto* default (besides inflation). The combination of heightened financial repression with increases in inflation was an especially popular form of default from the 1960s to the early 1980s. Brock (1989) makes the point that inflation and reserve requirements are positively correlated, particularly in Africa and Latin America. Interest rate ceilings combined with inflation spurts are also common. For example, during the 1972–1976 external debt rescheduling in India, interest rates (interbank) in India were 6.6 and 13.5 percent in 1973 and 1974, while inflation spurted to 21.2 and 26.6 percent. These are episodes of *de facto* default through financial repression. Another subtle type of default is illustrated by the Argentine government’s treatment of its inflation indexed debt in 2007. Most impartial observers agree that Argentina’s official inflation rate considerably understates actual inflation because of government manipulation. This represents a partial default on index linked debt by any reasonable measure, and it affects a large number of bondholders. Yet, Argentina’s *de facto* domestic bond default has not registered heavily in the external press or with rating agencies.

With U.S. domestic debt levels edging close to pre-default levels for countries that have experienced sovereign default, there is an urgent need to alleviate such concerns among the minds of investors. A failure to seriously address the problem would seem to invite the real risk of a crisis that could be destabilizing for global markets.

IV. Conclusion

The current fiscal situation is unsustainable. Using projections developed by the CBO, we estimate that under the Administration's budget, the deficit in 2019 will be higher than 5 percent and the federal debt close to 80 percent of GDP. The only times when such high debt and deficit numbers have been observed since the 1930s were periods of war or economic depression. What is even more troubling is that these numbers may be worse than projected if many of the revenue generating proposals of the Administration such as climate change legislation and international tax reform are not passed.

Looking at prior experience with successful debt reduction, the obvious lesson is one of spending cuts. After World War II, the fiscal deficit and debt burden was cut in half within a few years, primarily due to large reductions in defense spending. While the lessons are clear, their practical application in today's scenario is less so. In today's economy, the major areas driving spending growth are entitlement programs such as Medicare, Medicaid and Social Security. For successful debt reduction, the government has to figure out a way to contain costs in these programs. However, instead of focusing on spending reductions, the government is adding to costs through proposals such as health care reform.

The consequences of long-term fiscal deficits can be severe. Indeed, the fiscal situation in the U.S. looks quite similar to the fiscal situation in the typical country that has subsequently defaulted on its debt.

References

- Alesina, A. and S. Ardagna (1998), "Tales of Fiscal Adjustment," *Economic Policy*, Vol. 13, No. 27, 487-545.
- Alesina, A. and R. Perotti (1997), "Fiscal Adjustments in OECD Countries: Composition and Macroeconomic Effects," IMF Staff Papers, 44, 210-248.
- Alesina, A. and R. Perotti (1995), "Fiscal Expansions and Fiscal Adjustments in OECD Countries," NBER Working Paper No. W5214.
- Auerbach, Alan J. and William G. Gale (2009), "The Economic Crisis and the Fiscal Crisis: 2009 and Beyond," Tax Policy Center, http://www.urban.org/UploadedPDF/1001284_economic_crisis.pdf.
- Briotti, G. (2004), "Fiscal Adjustment Between 1991 and 2002: Stylised Facts and Policy Implications," ECB Occasional Paper No. 9.
- Brock, Philip (1989). "Reserve Requirements and the Inflation Tax," *Journal of Money, Credit and Banking*, 21 (1), February, 106-121.
- CBO (2009a), "The Long-Term Budget Outlook," <http://cbo.gov/ftpdocs/102xx/doc10297/06-25-LTBO.pdf>.
- CBO (2009b), "An Analysis of the President's Budgetary Proposals for Fiscal Year 2010," http://cbo.gov/ftpdocs/102xx/doc10296/06-16-AnalysisPresBudget_forWeb.pdf.
- CBO (2009c), "H.R. 3200, America's Affordable Health Choices Act of 2009," July 17. <http://www.cbo.gov/ftpdocs/104xx/doc10464/hr3200.pdf>.
- CBO (2009d), "Health Care Reform and the Federal Budget," http://budget.senate.gov/democratic/documents/2009/CBO%20Letter%20HealthReformAndFederalBudget_061609.pdf.
- CBO (2009e), "The Budget and Economic Outlook: An Update," <http://www.cbo.gov/doc.cfm?index=10521>.
- Cantor, Richard, and Frank Packer (1996), "Determinants and Impact of Sovereign Credit Ratings," Federal Reserve Bank of New York Policy Review, October, pp. 37-52.
- Government Printing Office (2009), "Budget of the United States Government: Historical Tables Fiscal Year 2010," <http://www.gpoaccess.gov/usbudget/fy10/hist.html>.
- Hagen J. von, A. Hughes Hallett and R. Strauch (2002), "Budgetary Consolidation in Europe: Quality, Economic Conditions and Persistence," *Journal of the Japanese and International Economies*, Vol. 16, No. 4, 512-535.

Haque, Nadeem U., Mark Nelson, and Donald J. Mathieson, 1998, "The Relative Importance of Political and Economic Variables in Creditworthiness Ratings," IMF Working Paper 98/46 (Washington: International Monetary Fund).

IMF (2009), "World Economic Outlook: Crisis and Recovery," <http://www.imf.org/external/pubs/ft/weo/2009/01/index.htm>.

Ippolito, Dennis S. (2003), *Why Budgets Matter: Budget Policy and American Politics*. Pennsylvania State University Press.
<http://www.psupress.psu.edu/Justataste/samplechapters/justatasteIppolito.html>.

Kotlikoff, Lawrence J, Torsten Persson, and Lars E. O. Svensson (1988), "Social Contracts as Assets: A Possible Solution to the Time-Consistency Problem," *The American Economic Review*, 78, 662-677.

Lambertini, L. and J. Tavares (2005), "Exchange Rates and Fiscal Adjustments: Evidence from the OECD and Implications for the EMU," *Contributions to Macroeconomics*, Vol. 5, No. 1 Article 11.

Larch, Martin and Allesandro Turrini (2008), "Received Wisdom and Beyond: Lessons from Fiscal Consolidation in the EU," European Commission Economic Papers 320.

Larrain, Guillermo, Helmut Reisen, and Julia von Maltzan (1997), "Emerging Market Risk and Sovereign Credit Ratings," OECD Development Centre Technical Papers No. 124 (Paris: Organization for Economic Co-operation and Development).

Lee, Suk Hun (1993), "Are the credit ratings assigned by bankers based on the willingness of LDC borrowers to repay?," *Journal of Development Economics*, Vol. 40, pp. 349-359.

Manasse, Paolo, Nouriel Roubini and Axel Schimmelpfennig (2003), "Predicting Sovereign Debt Crises," IMF Working Paper WP/03/221.

OECD (2009) "OECD Economic Outlook: Interim Report," March, 2009.
http://www.oecd.org/document/59/0,3343,en_2649_34109_42234619_1_1_1_37443,00.html

Persson, Torsten, Gérard Roland, and Guido Tabellini (2000), "Comparative Politics and Public Finance," *Journal of Political Economy* 108, 1121-1141.

Reinhart, Carmen M. and Kenneth Rogoff (2008a), "The Forgotten History of Domestic Debt," NBER Working Paper 13946.

Reinhart, Carmen M. and Kenneth Rogoff (2008b), "This Time is Different: A Panoramic View of Eight Centuries of Financial Crises," NBER Working Paper 13882.

Reinhart, Carmen M., Kenneth S. Rogoff, and Miguel A. Savastano (2003), “Debt Intolerance,” *Brookings Papers on Economic Activity*, Vol.1 Spring 2003, 1-74.

Reinhart, Carmen M. (2002), “Default, Currency Crises and Sovereign Credit Ratings,” *The World Bank Economic Review*, Vol. 16, No. 2, pp. 151–170.

Rojas-Suarez, L. (2001), *Rating Banks in Emerging Markets*, Institute for International Economics (Washington, DC).

Tax Policy Center (2008), “Table T08-0248 Aggregate AMT Projections, 2008-2018,” <http://www.taxpolicycenter.org/numbers/displayatab.cfm?DocID=2013>.

US Department of Treasury (2009), “Major Foreign Holders of Treasury Securities,” <http://www.treas.gov/tic/mfh.txt>.

Figure 1. Total Federal Revenues as a Percentage of GDP

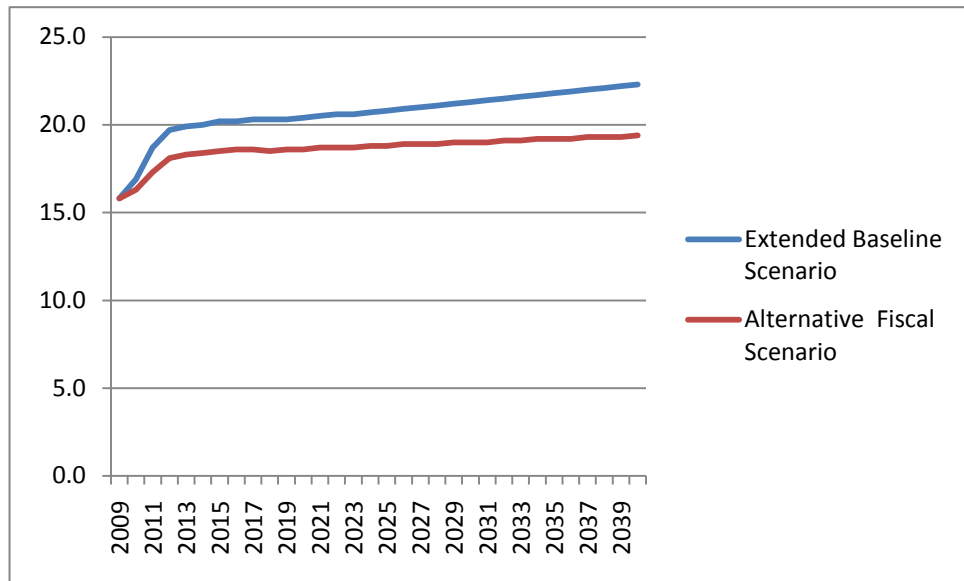


Figure 2. Total Federal Spending as a Percentage of GDP

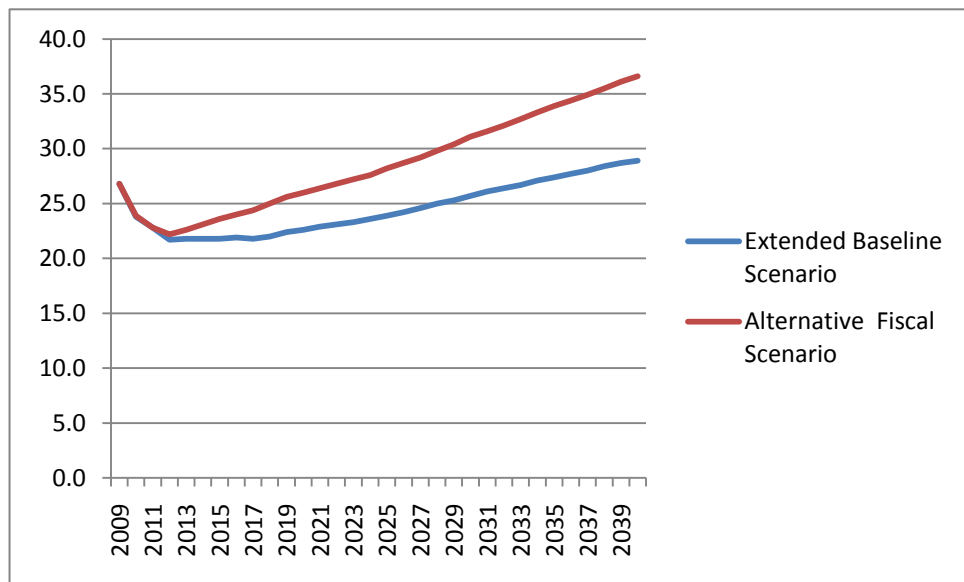


Figure 3. Federal Debt As a Percentage of GDP

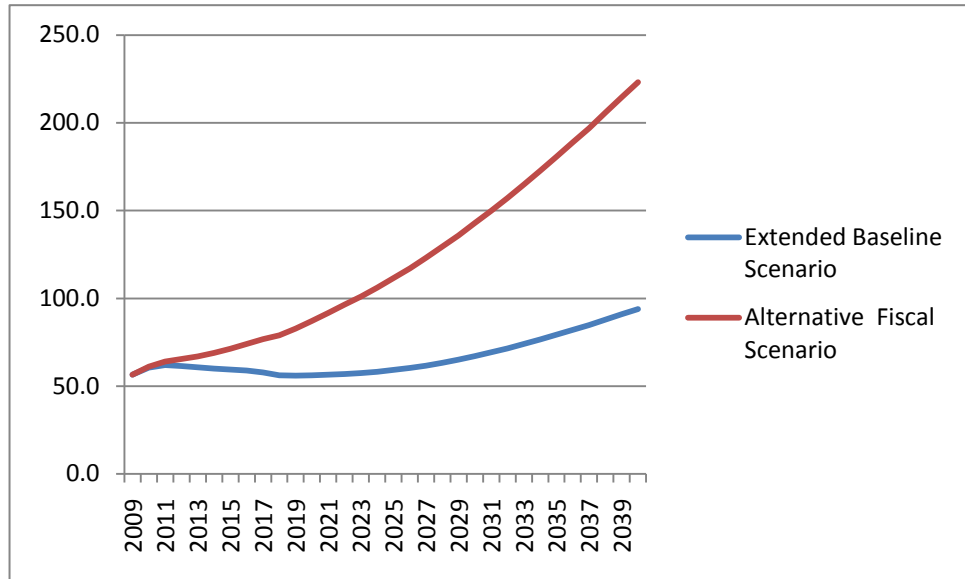


Figure 4A: Frequency Distribution of the Annual Improvement of the CAPB during consolidation years

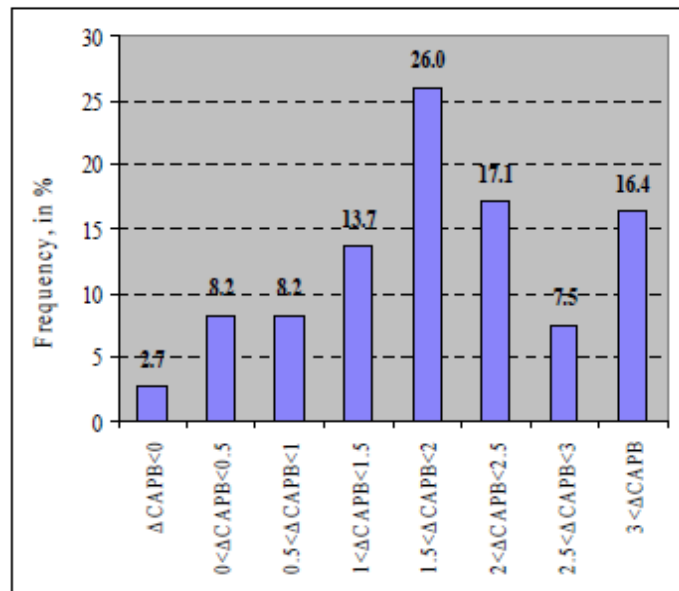


Figure 4B: Distribution of Consolidation Episodes, By Year

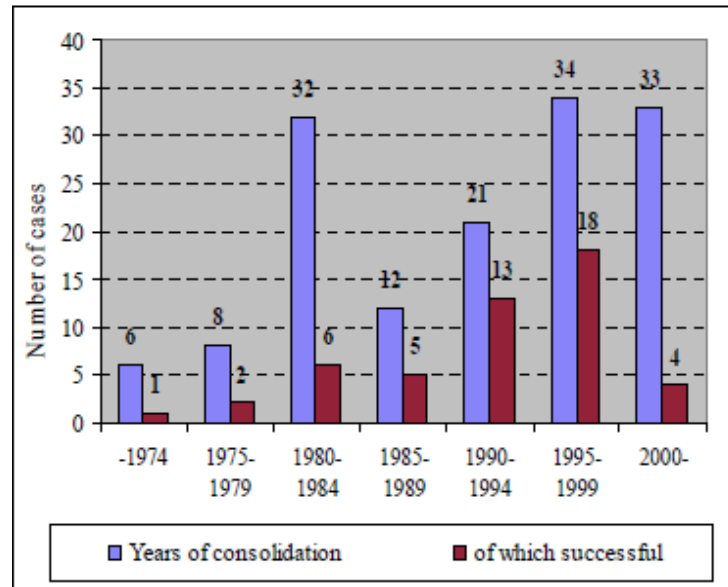


Figure 5A: Standard and Poor's Rating, by Size of Debt

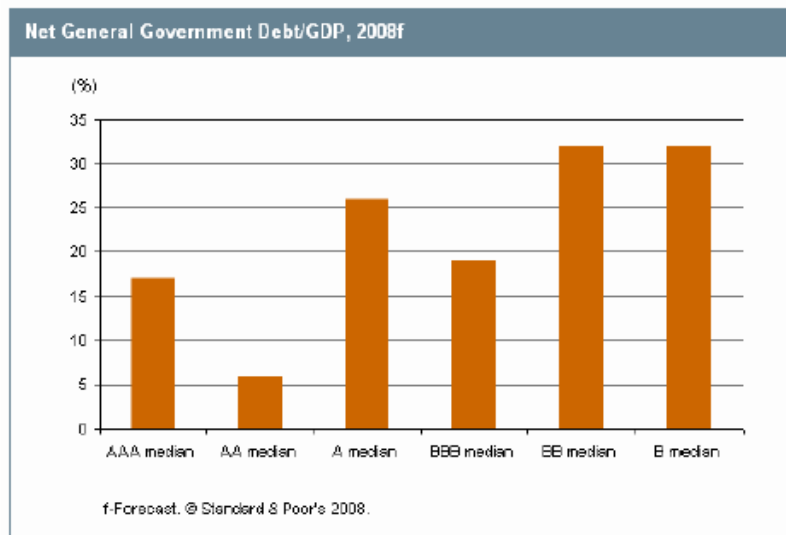


Figure 5B: Standard and Poor's Rating, by Size of Deficit

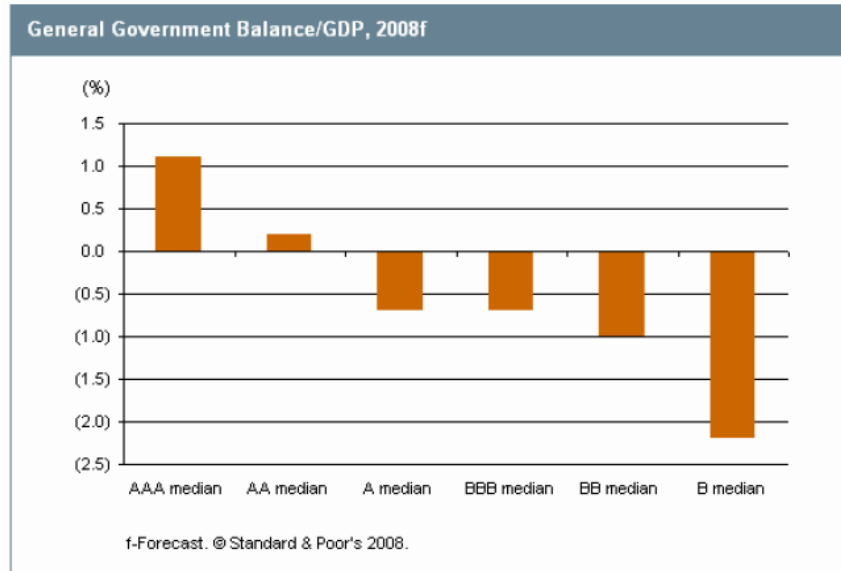


Figure 6: Foreign Country Holdings of U.S. Debt

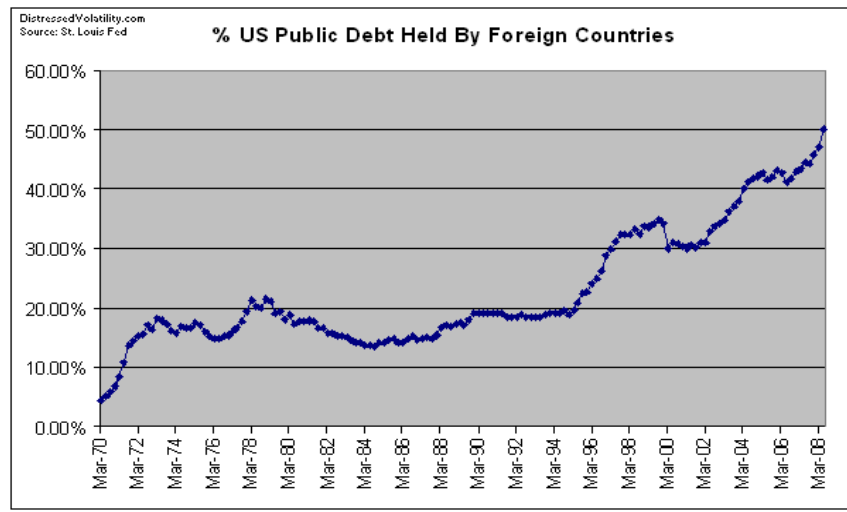
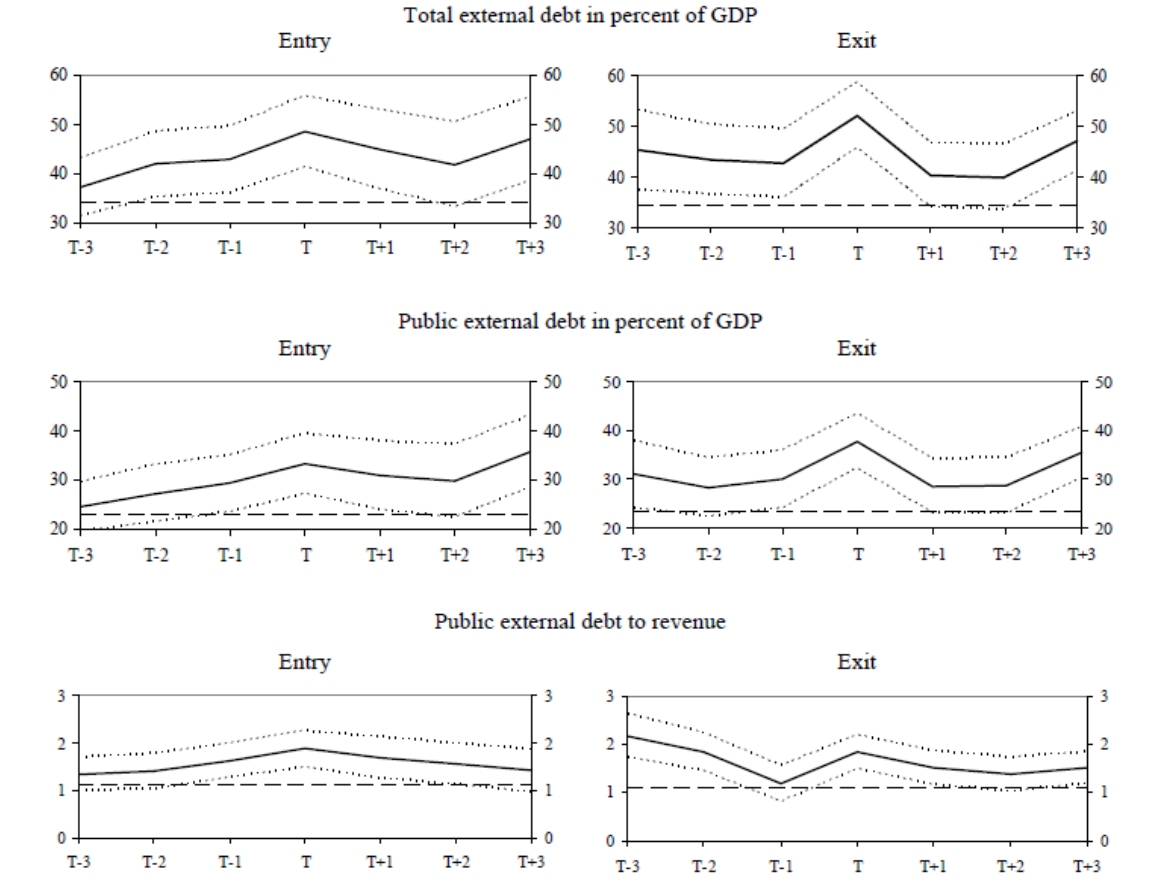


Figure 7: Event Study Analysis: Total Debt Prior to Default



Source: Manasse, Roubini and Schimmpfennig (2003).

Notes: Bold broken line represents the average of observations outside a +/- 3 year interval around default episodes. Bold solid lines represent the average of observations for the years falling in the +/- 3 years interval around entry into default. Broken lines around the solid lines represent the 95 percent confidence level.

Table 1: The Long-Term Outlook: Projected Spending and Revenues Under CBO's Alternative Fiscal Scenario

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Average 2031- 2035	Average 2036- 2040
Spending																								
Social Security	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.4	5.5	5.5	5.6	5.7	5.7	5.8	5.9	6.0	6.0	6.0
Net Medicare + Federal Medicaid	4.9	5.0	5.0	5.1	5.2	5.3	5.4	5.6	5.7	5.9	6.1	6.4	6.6	6.8	7.1	7.3	7.5	7.8	8.0	8.3	8.6	8.8	9.5	10.7
Other Primary	15.9	12.9	11.6	10.5	10.5	10.5	10.6	10.5	10.5	10.5	10.5	10.4	10.4	10.5	10.4	10.4	10.5	10.4	10.5	10.4	10.3	10.4	10.4	10.3
Other	25.6	22.7	21.4	20.4	20.5	20.6	20.8	21.0	21.2	21.5	21.8	22.1	22.4	22.7	23.0	23.2	23.6	23.9	24.2	24.5	24.8	25.2	25.9	27.0
Net Interest	1.1	1.2	1.5	1.8	2.2	2.5	2.8	3.0	3.2	3.5	3.8	3.9	4.0	4.1	4.3	4.4	4.6	4.8	5.1	5.3	5.6	5.9	6.8	8.5
Total Spending	26.7	23.9	22.9	22.2	22.7	23.1	23.6	24.0	24.4	25.0	25.6	26.0	26.4	26.8	27.3	27.6	28.2	28.7	29.3	29.8	30.4	31.1	32.7	35.5
Revenues																								
Income Tax Revenue	6.9	7.4	8.0	8.4	8.6	8.8	9.0	9.1	9.3	9.3	9.4	9.5	9.6	9.6	9.7	9.7	9.8	9.8	9.9	9.9	10.0	10.0	10.2	10.4
Other Revenues	2.9	2.9	3.4	3.8	3.8	3.6	3.5	3.4	3.3	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Payroll Taxes	6.0	6.0	6.0	5.9	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.7
Total Revenues	15.8	16.3	17.3	18.1	18.3	18.4	18.5	18.6	18.6	18.5	18.6	18.6	18.7	18.7	18.7	18.8	18.8	18.9	18.9	18.9	19.0	19.0	19.1	19.3
Deficit/GDP	10.9	7.6	5.6	4.1	4.4	4.7	5.1	5.4	5.8	6.5	7.0	7.4	7.7	8.1	8.6	8.8	9.4	9.8	10.4	10.9	11.4	12.1	13.6	16.2
Debt/GDP	56.6	61.1	64.0	65.4	67.0	69.0	71.4	74.1	76.7	78.9	82.8	87.1	91.7	96.4	101.1	106.1	111.5	117.1	123.1	129.4	135.9	142.9	165.0	205.9

Table 2
CBO's Estimate of the Effect of the President's Budget on Baseline Deficits (Billions of dollars)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2010-2014	2010-2019
Total Deficit as Projected in CBO's March 2009 Baseline	-1,667	-1,139	-693	-331	-300	-310	-282	-327	-312	-325	-423	-2,772	-4,441
Effect of the President's Proposals													
Revenues													
Provisions related to EGTRRA and JGTRRA													
Modify individual income tax rates ^a	0	0	-69	-100	-105	-111	-116	-121	-126	-131	-137	-385	-1,016
Provide relief from the marriage penalty	0	0	-18	-25	-27	-28	-29	-31	-32	-33	-34	-98	-258
Modify capital gains and dividend tax rates ^b	0	*	-5	-20	-25	-26	-28	-29	-30	-31	-31	-76	-224
Modify estate and gift tax rates	0	*	-1	-18	-22	-25	-29	-31	-34	-36	-38	-66	-234
Other provisions	0	*	-10	-21	-20	-20	-19	-19	-19	-19	-19	-70	-166
Subtotal, proposed extensions	0	0	-102	-185	-199	-210	-221	-230	-240	-250	-260	-696	-1,897
Permanently extend Making Work Pay credit													
Index the AMT starting from 2009 levels	0	-7	-69	-31	-34	-37	-41	-46	-52	-60	-70	-177	-447
Revenues from climate policy	0	0	0	77	78	78	79	79	80	80	80	233	632
Reform the U.S. international tax system	0	0	10	17	16	17	18	19	20	21	22	61	161
Expand net operating loss carryback	0	-60	10	10	7	5	4	3	2	1	1	-27	-18
Other proposals	*	-5	-11	*	3	2	1	*	*	-1	-1	-11	-12
Total Effect on Revenues	0	-71	-191	-153	-171	-188	-205	-220	-236	-254	-273	-775	-1,962
Outlays													
Mandatory													
Expand earned income and child tax credits	0	*	*	35	37	37	38	38	38	38	39	110	301
Provide Making Work Pay and other tax proposals	0	0	0	23	23	23	23	23	23	23	23	69	184
Freeze Medicare physician payment rates	0	7	17	22	18	23	28	35	42	45	47	87	285
Support financial stabilization	125	125	0	0	0	0	0	0	0	0	0	125	125
Modify the Family Federal Education Loan Program	0	-3	-9	-11	-10	-9	-9	-9	-9	-9	-9	-42	-87
Modify Pell grants ^c	0	5	20	28	30	33	32	33	35	37	39	116	293
Other proposals	6	8	8	1	*	*	1	1	4	5	5	17	33
Subtotal, mandatory	131	142	36	98	98	108	113	121	133	139	145	483	1,134
Discretionary													
Defense	23	60	35	6	*	3	6	7	8	9	10	103	143
Nondefense	2	15	6	18	31	44	56	65	70	75	79	113	458
Subtotal, discretionary	25	75	41	24	30	46	62	72	78	84	90	216	601
Net interest	1	6	14	27	47	74	102	133	167	198	232	167	1,000
Total Effect on Outlays	157	223	91	149	176	228	277	326	379	421	466	866	2,735
Total Effect on the Deficit	-157	-294	-281	-302	-347	-416	-481	-546	-615	-675	-739	-1,640	-4,697
Total Deficit Under the President's Proposals as Estimated by CBO													
As % of GDP	-13.0	-9.8	-6.4	-4.0	-3.9	-4.2	-4.2	-4.6	-4.7	-4.9	-5.5		
Memorandum:													
Health Care Reform^d													
Increased revenues from limiting itemized deductions and other revenue proposals	0	2	11	29	31	33	35	37	39	41	43	106	300
Reduced spending from specified health proposals	0	2	5	14	20	39	36	36	42	48	55	79	296
New, unspecified benefits from health reforms ^e	0	-3	-16	-43	-51	-72	-71	-73	-81	-89	-98	-184	-595
Net deficit effect of healthcare reform proposal	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Deficit Under the President's Proposals as Estimated by OMB													
Nominal GDP	14,047	14,576	15,233	15,950	16,684	17,421	18,138	18,873	19,624	20,381	21,164		
As % of GDP	-13.1	-8.6	-6.1	-3.5	-3.1	-3.1	-2.9	-3.4	-3.4	-3.4	-3.7		

* = between -\$500 million and \$500 million; EGTRRA = Economic Growth and Tax Relief Reconciliation Act of 2001; JGTRRA = Jobs and Growth Tax Relief Reconciliation Act of 2003; AMT = alternative minimum tax; OMB = Office of Management and Budget.

a. The estimates include the effects of maintaining, for taxpayers with income above certain levels, the income tax rates of 36 percent and 39.6 percent scheduled to go into effect in 2011 under current law. For the remaining taxpayers, tax rates would be at 2010 levels specified in EGTRRA.

b. The estimates include the effects of imposing a 20 percent tax rate on capital gains and dividends for taxpayers with income above certain levels, starting in 2011. Tax rates for the remaining taxpayers would be at the 2010 levels specified in JGTRRA.

c. The current Pell Grant program has both discretionary and mandatory components. CBO's estimate of the costs of modifying Pell grants includes the costs of setting the maximum award at \$5,550 in 2010, indexing that award level for future years, and reclassifying the entire program as mandatory spending. That reclassification would result in eliminating spending for Pell grants in CBO's discretionary baseline, which currently includes \$195 billion in outlays for new grant awards over the 2010–2019 period.

d. Negative numbers indicate an increase in the deficit.

e. Health reform benefits may be a combination of revenue reductions and spending increases and are assumed to exactly offset the savings dedicated to the proposed fund on both the revenue and outlay sides of the budget.

Table 3
President's Adjusted Budget (Billions of dollars)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2009-2014	2009-2019	
Projected Total Deficit in CBO's March 2009 Baseline	-1,667	-1,139	-693	-331	-300	-310	-282	-327	-312	-325	-423	-2,772	-4,441
As percent of nominal GDP	-12	-8	-5	-2	-2	-2	-2	-2	-2	-2	-2		
Effect of the President's Proposals													
Revenues													
Provisions related to EGTRRA and JGTRRA													
Modify individual income tax rates ^a	0	0	-69	-100	-105	-111	-116	-121	-126	-131	-137	-385	-1,016
Provide relief from the marriage penalty	0	0	-18	-25	-27	-28	-29	-31	-32	-33	-34	-98	-258
Modify capital gains and dividend tax rates ^b	0	*	-5	-20	-25	-26	-28	-29	-30	-31	-31	-76	-224
Modify estate and gift tax rates	0	*	-1	-18	-22	-25	-29	-31	-34	-36	-38	-66	-234
Other provisions	0	*	-10	-21	-20	-20	-19	-19	-19	-19	-19	-70	-166
Subtotal, proposed extensions	0	0	-102	-185	-199	-210	-221	-230	-240	-250	-260	-696	-1,897
Permanently extend Making Work Pay credit	0	0	-29	-42	-43	-43	-44	-44	-45	-45	-46	-158	-381
Index the AMT starting from 2009 levels	0	-7	-69	-31	-34	-37	-41	-46	-52	-60	-70	-177	-447
Expand net operating loss carryback	0	-60	10	10	7	5	4	3	2	1	1	-27	-18
Other proposals	*	-5	-11	*	3	2	1	*	*	-1	-1	-11	-12
Total Effect on Revenues	0	-71	-201	-248	-265	-284	-302	-318	-336	-355	-376	-1,069	-2,755
Outlays													
Mandatory													
Expand earned income and child tax credits	0	*	*	35	37	37	38	38	38	38	39	110	301
Provide Making Work Pay and other tax proposals	0	0	0	23	23	23	23	23	23	23	23	69	184
Freeze Medicare physician payment rates	0	7	17	22	18	23	28	35	42	45	47	87	285
Support financial stabilization	125	125	0	0	0	0	0	0	0	0	0	125	125
Modify the Family Federal Education Loan Program	0	-3	-9	-11	-10	-9	-9	-9	-9	-9	-9	-42	-87
Modify Pell grants ^c	0	5	20	28	30	33	32	33	35	37	39	116	293
Other proposals	6	8	8	1	*	*	1	1	4	5	5	17	33
Subtotal, mandatory	131	142	36	98	98	108	113	121	133	139	145	483	1,134
Discretionary													
Defense	23	60	35	6	*	3	6	7	8	9	10	103	143
Nondefense	2	15	6	18	31	44	56	65	70	75	79	113	458
Subtotal, discretionary	25	75	41	24	30	46	62	72	78	84	90	216	601
Net interest	1	6	14	27	47	74	102	133	167	198	232	167	1,000
Total Effect on Outlays	157	223	91	149	176	228	277	326	379	421	466	866	2,735
Total Effect on the Deficit	-157	-294	-291	-397	-441	-512	-578	-645	-715	-776	-842	-1,935	-5,490
Total Deficit Under the President's Proposals	-1,824	-1,432	-984	-728	-741	-822	-860	-972	-1,027	-1,100	-1,266	-4,707	-9,932
Health Care Reform													
Net effect on the deficit of the healthcare plan (CBO/JCT)	0	-11	24	36	1	-5	-40	-58	-58	-62	-65	44	-239
Total Deficit Under the President's Proposals	-1,824	-1,443	-960	-692	-740	-827	-900	-1,030	-1,085	-1,162	-1,331	-4,663	-10,171
Nominal GDP	14,047	14,576	15,233	15,950	16,684	17,421	18,138	18,873	19,624	20,381	21,164		
Deficit as percent of GDP	-13	-10	-6	-4	-4	-5	-5	-5	-6	-6	-6		

Sources: Congressional Budget Office; Joint Committee on Taxation.

Note * = between -\$500 million and \$500 million; EGTRRA = Economic Growth and Tax Relief Reconciliation Act of 2003; JGTRRA = Jobs and Growth Tax Relief Reconciliation Act of 2001; AMT = alternative minimum tax; OMB = Office of Management and Budget.

- The estimates include the effects of maintaining, for taxpayers with income above certain levels, the income tax rates of 36 percent and 39.6 percent scheduled to go into effect in 2011 under current law. For the remaining taxpayers, tax rates would be at 2010 levels specified in EGTRRA.
- The estimates include the effects of imposing a 20 percent tax rate on capital gains and dividends for taxpayers with income above certain levels, starting in 2011. Tax rates for the remaining taxpayers would be at the 2010 levels specified in JGTRRA.
- The current Pell Grant program has both discretionary and mandatory components. CBO's estimate of the costs of modifying Pell grants includes the costs of setting the maximum award at \$5,550 in 2010, indexing that award level for future years, and reclassifying the entire program as mandatory spending. That reclassification would result in eliminating spending for Pell grants in CBO's discretionary baseline, which currently includes \$195 billion in outlays for new grant awards over the 2010-2019 period.
- Negative numbers indicate an increase in the deficit.
- Health reform benefits may be a combination of revenue reductions and spending increases and are assumed to exactly offset the savings dedicated to the proposed fund on both the revenue and outlay sides of the budget.

Table 4: CBO August Baseline Projections (Billions of Dollars)

	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>Total 2010- 2019</u>
<u>Nominal GDP</u>	14,163	14,570	15,146	15,965	16,799	17,488	18,201	18,949	19,718	20,507	21,320	
<u>(A) Total Deficit</u>	-1,587	-1,381	-921	-590	-538	-558	-558	-620	-626	-622	-722	-7,137
<u>As % of GDP</u>	-11.21	-9.48	-6.08	-3.70	-3.20	-3.19	-3.07	-3.27	-3.17	-3.03	-3.39	
<u>Debt/GDP(%)</u>	53.8	61.4	65.2	65.9	65.5	66	66.5	67.1	67.5	67	67.8	
<u>(B) CBO Estimate of President's Budget Deficit</u>												
	-157	-294	-281	-302	-347	-416	-481	-546	-615	-675	-739	-4,697
<u>Total Deficit</u>	-1,744	-1,675	-1,202	-892	-885	-974	-1,039	-1,166	-1,241	-1,297	-1,461	-11,834
<u>As % of GDP</u>	-12.31	-11.50	-7.94	-5.59	-5.27	-5.57	-5.71	-6.15	-6.29	-6.32	-6.85	
<u>(C) Adjusted Deficit Estimate</u>												
	-157	-294	-291	-397	-441	-512	-578	-645	-715	-776	-842	
<u>Total Deficit</u>	-1,744	-1,675	-1,212	-987	-979	-1,070	-1,136	-1,265	-1,341	-1,398	-1,564	-14,371
<u>As % of GDP</u>	-12.31	-11.50	-8.00	-6.18	-5.83	-6.12	-6.24	-6.68	-6.80	-6.82	-7.34	

Table 5: Projected Deficits Under Alternative Assumptions (as % of GDP)

	<u>2009</u>	<u>2019</u>
AFS	11	7
CBO March Baseline	12	2
CBO August Baseline	11	3.4
President's Budget (OMB)	13	4
President's Budget (CBO)	13	5.5
Adjusted President's Budget		
(1) + cost of health reform	13	5.8
(2) - climate change revenues	13	5.9
(3) - international tax reform revenues	13	5.6
(4) Total, March Baseline (1+2+3)	13	6.3
(5) Total, August Baseline (1+2+3)	12	7.3

Notes:

(1) AFS is the alternative fiscal scenario. It deviates from the CBO baseline from 2010 by incorporating some changes in policy that are widely expected to occur.

(2) The Adjusted president's budget assesses the individual impact of some new policy proposals whose passage is uncertain. For instance, it shows the impact of adding health care reform costs on the CBO estimate of the President's budget, the effect of dropping the climate change bill as well as dropping the international tax reform proposals. The total shows the cumulative impact of all three eventualities.

Table 6: Historical Trends in Deficits and Debts (as a percent of GDP)

Year	Deficit/GDP	Debt/GDP
1945	-21.5	117.5
1946	-7.2	121.7
1947	1.7	110.3
1948	4.6	98.2
1949	0.2	93.1
1950	-1.1	94.0
1951	1.9	79.7
1952	-0.4	74.3
1953	-1.7	71.4
1954	-0.3	71.8
1955	-0.8	69.3
1956	0.9	63.9
1957	0.8	60.4
1958	-0.6	60.8
1959	-2.6	58.6
1960	0.1	56.0
1961	-0.6	55.2
1962	-1.3	53.4
1963	-0.8	51.8
1964	-0.9	49.3
1965	-0.2	46.9
1966	-0.5	43.5
1967	-1.1	42.0
1968	-2.9	42.5
1969	0.3	38.6
1970	-0.3	37.6
1971	-2.1	37.8
1972	-2.0	37.0
1973	-1.1	35.6
1974	-0.4	33.6
1975	-3.4	34.7
1976	-4.2	36.2
1977	-2.7	35.8
1978	-2.7	35.0
1979	-1.6	33.1
1980	-2.7	33.4

Source: U.S. Government Printing Office
(<http://www.gpoaccess.gov/usbudget/fy10/hist.html>)

Table 7: Type of Fiscal Consolidation Episodes in the EU

Country	Cold Shower	Gradual
Belgium	1977,1982,1984,1993,2006	1985,1986,1987,1996,1997,1998
Bulgaria		
Czech Republic	2004	
Denmark	1983,1984,1986	2003,2004,2005
Germany	1982,1989,2000	1983,1984,1985,1992,1993,1994
Estonia	2000,2003	
Ireland	1976,1983,1988,2004	1991,1992,1993,1994
Greece	1974,1982,1986,1987,1991,1994,1996,2005,2006	
Spain	1986,1992,1996	
France	1996	2004,2005,2006
Italy	1976,1982,1983,1991,1992,1993,1997	
Cyprus	2000,2004,2005	
Latvia	1996,2000	2003,2004,2005
Lithuania	19989,1999	
Luxembourg	1983,1985,1993,1997	1994,1995,1996
Hungary	1999,2003	
Malta	1999,2004,2005	2000,2001,2002
Netherlands	1985,1991,1993,1996,2005	1971,1972,1973,1981,1982,1983,1984
Austria	1984,1996,1997,2001	
Poland	2005	
Portugal	1977,1982,1983,1984,1986,1992,2002,2006	
Romania	1997,1998,1999	
Slovenia	2002	
Slovakia	1998,2001,2003	
Finland	1976,1981,1984,1988,1996,1998,2000	
Sweden	1971,1976,1983,1987,1995,1996	1980,1981,1982,1984,1985,1986,2003,2004,2005
United Kingdom	1974,1980,1982,1996,1997,1998,2000	
Total Years	99	47

Source: Table 2, Larch and Turrini (2008)

Table 8: Inflation and Domestic Debt, Selected Episodes, 1917-1995

Country	Years	Inflation	Domestic Debt/GDP	Base Money/GDP	Domestic Debt/Base Money
Argentina	1989	3079.5	25.6	16.4	1.6
Brazil	1987,1990	228.3, 2947.7	164.9, 155.1	9.8,7.1	16.8, 21.8
Germany	1920, 1923	66.5,2222014922.37	52.6,0	19.4,0	2.7
Greece	1922,1923	54.2,72.6	53,41.3	34.3,32.7	1.5,1.3
Italy	1917,1920	43.8,56.2	79.1,78.6	24.1,23.5	3.3,3.3
Japan	1944,1945	26.6,568.1	236.7,266.5	27.8,74.4	8.5,3.6
Norway	1918,1920	32.5,18.1	79.3,106.9	86.4,65.6	0.92,1.6
Philippines	1981,1984	13.1,46.2	10.4,11	6.6,13.9	1.6,0.8
Turkey	1990,1994	60.3,106.3	14.7,20.2	7.4,7.1	2,2.8

Source: Reinhart and Rogoff (2008a)

Table 9A: External Debt At Time of Default, 1970-2001

Country	Year of Default	External Debt to GNP in year of Default or Restructuring
Albania	1990	16.6
Argentina	1982, 2001	55.1,50.8
Bolivia	1980	92.5
Brazil	1983	50.1
Bulgaria	1990	57.1
Chile	1972,1983	31.1,96.4
Costa Rica	1981	136.9
Dominican Republic	1982	31.8
Ecuador	1984,2000	68.2,106.1
Egypt	1984	112
Guyana	1982	214.3
Honduras	1981	61.5
Iran	1992	41.8
Iraq	1990	n.a.
Jamaica	1978	48.5
Jordan	1989	179.5
Mexico	1982	46.7
Morocco	1983	87
Panama	1983	88.1
Peru	1978,1984	80.9,62
Philippines	1983	70.6
Poland	1981	n.a.
Romania	1982	n.a.
Russian Federation	1991,1998	12.5, 58.5
South Africa	1985	n.a.
Trinidad and Tobago	1989	49.4
Turkey	1978	21
Uruguay	1983	63.7
Venezuela	1982	41.4
Yugoslavia	1983	n.a.

Source: Reinhart, Rogoff and Savastano (2003)

Table 9B: Debt Ratios at Time of Default: Selected Episodes

	Year	Public Debt to Revenue
Germany	1932	2.43
China	1939	8.96
Turkey	1978	2.69
Mexico	1982	5.06
Brazil	1983	1.98
Philippines	1983	1.25
South Africa	1985	1.32
Russia	1998	4.95
Pakistan	1998	6.28
Argentina	2001	2.62

Source: Reinhart and Rogoff (2008a)

Table 9C: Projected Debt to Revenue Ratios, U.S.: 2009-2019

Year	CBO Baseline (August)
2009	3.62
2010	3.92
2011	3.60
2012	3.45
2013	3.37
2014	3.36
2015	3.35
2016	3.37
2017	3.37
2018	3.34
2019	3.36