Fiscal Consolidation in America: the Policy Options

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Abstract

This paper is focused on the options for reducing the U.S. fiscal deficit in the aftermath of the financial crisis. The first part of the paper is devoted to an assessment of the economic outlook and the impact of the financial crisis on the medium-term fiscal balance of the federal government. Is there a short-term trade-off between the need for further fiscal stimulus and deficit reduction and how should it be managed? The second part of the paper examines the options for fiscal consolidation on both the expenditure and revenue sides of the budget.

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Fiscal Consolidation in America: the Policy Options

Rosanne Altshuler and Barry Bosworth

The 2008-09 financial crisis has had a devastating impact on both the U.S. economy and the fiscal position of its government. The loss of output and jobs also radiated throughout the global economy by means of both a crisis-induced contraction of international trade and sharply reduced financial flows. While the recession has ended, the recovery has been unusually weak and lags far behind the experience of prior business cycles. The United States, in particular, is beset by an incomplete recovery and a splintering of any consensus among its political leadership about how to deal with the economic problems. This is especially apparent with respect to budget policy where deficits are now projected in excess of $1 trillion per year for the foreseeable future; yet both political parties continue to advocate permanent tax reductions for their constituents, and a hands-off approach to major expenditure programs.

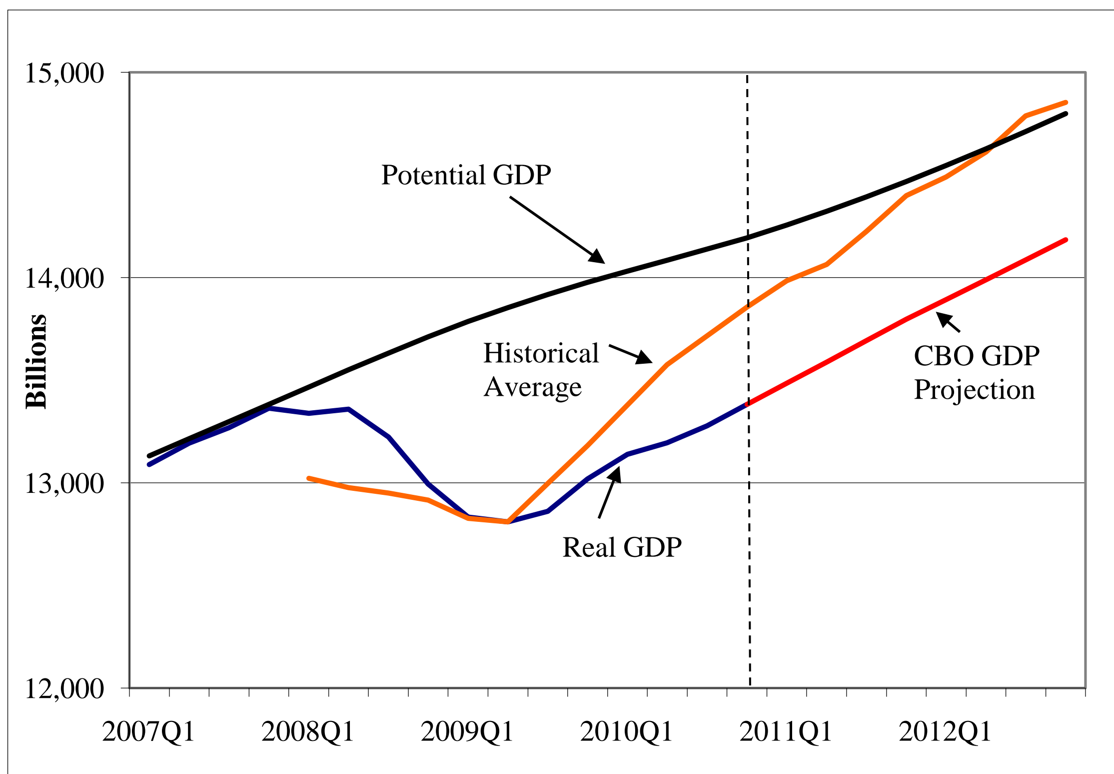
The primary objective of this paper is to evaluate the options for fiscal consolidation in future years. However, those options also need to be placed within the context of a continuing tradeoff between the objective of an improved fiscal balance and desires to restore the economy to high levels of employment. Thus, the paper begins with a discussion of the economic outlook and the challenges that it raises for fiscal and monetary policy. The focus is on a question that is at the center of the policy debate in many countries: how should we balance conflicting claims between additional fiscal stimulus to accelerate the economic recovery and restrictive actions to reduce the budget deficit? Section 3 considers some lessons from the international experience with fiscal consolidation programs. A baseline projection for the U.S. budget outlook is provided in section 4, and sections 5 - 7 are devoted to a discussion of the options for fiscal consolidation over the medium term, first for expenditure reductions and then for revenue increases. Section 8 concludes.

1. Economic Outlook

The crisis generated a severe fall in economic activity; and despite unprecedented magnitudes of monetary and fiscal policy intervention, the declines in production and employment have been among the largest and longest lasting of the past half century. An economy that was operating at full employment before the crisis currently has a shortfall of

about 6 percent of potential output, and unemployment has leveled out at 9½ percent of the labor force. While the economy has typically recovered rapidly from past recessions, that is not expected to be the case in the present situation. GDP growth averaged 2.5 percent during 2010 (4th quarter to 4th quarter), and the consensus is that growth will be 3-3.5 percent in 2011 and about 3 percent in 2012. As shown in figure 1, the growth of potential GDP (capacity) is projected to slow down slightly due to slower rates of investment. We also show a typical rate of recovery based on the average experience of past business cycles. On that basis the United States would be back to full employment by the end of 2011. However, the rate of growth forecast by the Congressional Budget Office (CBO) for 2011 is less than half the historical average. It barely exceeds the growth of potential output and unemployment is expected to remain at or above nine percent for several more years.

Figure 1. Alternative Paths to Recovery, 2007-2012



Source: CBO and authors' calculations as explained in text.

There are several reasons for anticipating a continued weak recovery. As illustrated by the experience of other countries, recoveries from financial crises tend to be slower than average as financial institutions go through an extended period of deleveraging to rebuild their balance sheets and capital positions. Similarly, households have suffered a major loss of wealth, and the rebuilding of their balance sheets will require higher rates of saving–and less consumption–in future years. Excess capacity in housing and commercial real estate will keep construction activity below trend for several years.

Table 1. United States Net Saving and Investment by Sector, 1960-2010

Percent of national income

Item	1980-89	1990-99	2000-07	2008	2009	2010
Gross domestic investment	23.4	21.2	22.2	20.6	17.1	18.3
Less: capital consumption allowances	14.1	13.3	13.7	14.7	15.2	14.6
Net investment	9.4	7.9	8.4	5.9	1.9	3.6
Net national saving	6.5	5.4	3.6	-0.5	-2.7	-1.3
Government saving	-3.6	-2.4	-1.7	-5.3	-10.4	-10.2
Federal	-3.9	-2.6	-1.7	-4.9	-10.2	-10.4
State and local	-0.4	0.0	-0.2	-0.4	0.1	-0.2
Private Saving	10.0	7.8	5.3	4.8	7.7	8.9
Personal (household) saving	7.2	4.7	2.3	3.5	5.4	5.1
Corporate retained earnings	2.9	3.2	3.0	1.2	2.3	3.6
Net foreign lending (current account)	-1.8	-1.7	-5.4	-5.3	-3.1	-3.8
Statistical discrepancy	1.1	0.8	-0.6	1.1	1.5	1.3

Source: Bureau of Economic Anaysis web site, national income accounts tables 1.7.5 and 5.1.

The U.S. recovery will also be inhibited by the fact that it entered the crisis with a severely distorted economy that had become extremely reliant on domestic consumption. The imbalances were reflected in a sustained decline in household saving rates to an average of only 2.3 percent of GDP in 2000-07 (table 1), large government budget deficits, and an external deficit with the rest of the world that peaked at 7 percent of GDP in mid-2006. In the years just prior to the crisis, the United States financed less than half of its net investment from domestic saving. Despite its overall wealth, the United States is the largest debtor nation at the international level with foreign liabilities that exceed its assets by $2.7 trillion (20 percent of GDP). That pattern of spending could not have been sustained in future years even in the

absence of the crisis. Its correction requires a major shift in the structure of the economy away from domestic consumption toward a devotion of a greater proportion of resources to the production of exportable products.

An illustration of the challenges that this imbalance creates in the current context is provided in table 2, which compares the utilization of the economy's productive capacity in 2010 compared with 2007 when the U.S. was last at full employment. The total output loss represents about six percent of potential GDP and it is distributed equally between private consumption and fixed investment, with each experiencing a decline equivalent to four percent of potential output, and there has been an offsetting two percent gain in net exports. It is interesting to note that, because the United States began with a large trade deficit, the collapse of global trade in 2008-09 was actually a stabilizing influence as the absolute value of imports fell much more than exports. Government purchases have been an unchanged share of final demand throughout the crisis because most of the government's stimulus program took the form of tax reductions and transfer payments rather than purchases of goods and services

Table 2. Illustrative Rebalancing
Percent of potential GDP

Demand Component	2010 Shortfall from Potential	Alternative Recovery Paths: Pre-Crisis Economy	Alternative Recovery Paths: Economic Rebalance
Consumption	-4.0	4.0	1.0
Investment	-4.0	4.0	2.0
Net Exports	2.0	-2.0	3.0
Government	0.0	0.0	0.0
Total GDP	-6.0	6.0	6.0

Source: Authors' calculations as described in text.

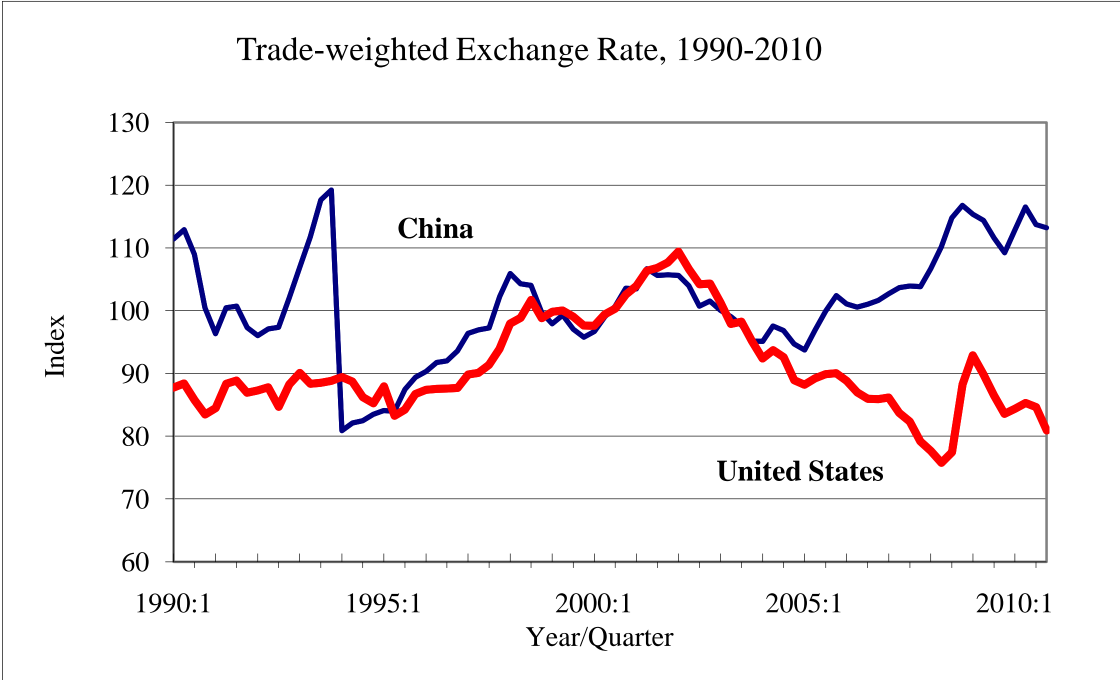
The table highlights two potential recovery outcomes. In the first (column 2), the United States simply returns to the same consumption-driven pattern of demand that existed before the crisis. That has been the focus of policy to-date as government programs are directed toward stimulating household consumption. It also implies a return to large trade deficits because consumption has a large import component. However, it is doubtful that total investment can return to pre-crisis levels because of the depressed demand for housing and commercial real estate.

The alternative policy (column 3) emphasizes a rebalancing of the economy with a shift of production away from consumption toward the expansion of exports. It would require a further three percentage point reduction in the trade deficit, leading to balance in the external account. Limiting the increase in consumption provides the saving necessary to finance a partial recovery of domestic investment while reducing the reliance on net foreign financial inflows. The expansion of export markets would also encourage increased capacity-creating investment in the export sector.

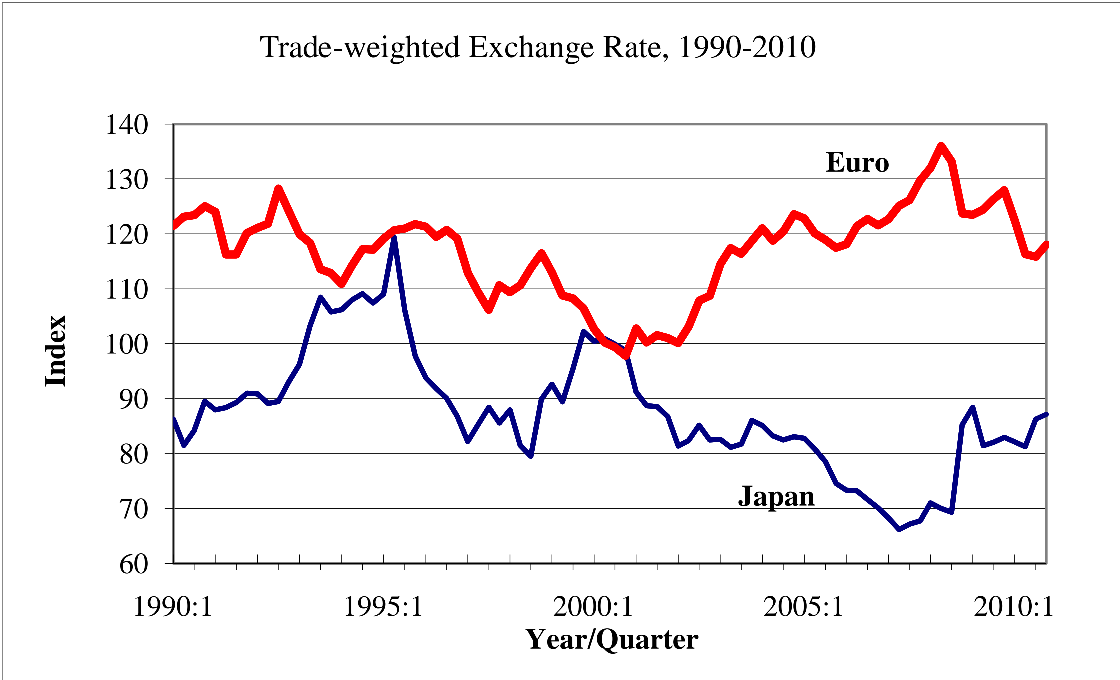
The difficulty with adopting policies directed toward an export-led recovery is that it is the preferred option of most of those countries trying to find a way out of the recession. Also, the government has few tools by which it can directly affect trade flows. In the short-run, the promotion of exports is largely limited to a lower price through a fall in the exchange rate, but that is not at the direct control of the government. A lower value of the dollar was part of an adjustment process that seemed underway prior to the crisis: the trade-weighted value of the dollar had declined by about 30 percent from its peak in 2002 (see figure 2) and exports were growing rapidly. However, the financial crisis interrupted the process as many investors turned to dollar-denominated assets as a safe haven and the dollar increased sharply in value. Most recently, the dollar has again fallen relative to some currencies, but the net change has been limited by a major decline in the value of the Euro in response to concerns about the fiscal condition of some of its member states. In addition, growing awareness of the benefits of increased exports as a path out of the recession has resulted in increased interventions in exchange rate markets by countries seeking a means of enhancing their competitiveness. While the bilateral exchange rate between the dollar and the Chinese RMB has been the focus of much public discussion, the determination of trade competitiveness depends on broader trade-weighted measures of the real exchange rate and particularly the relative position with Japan and the Euro Zone, countries whose exports are similar to those of the United States.

Figure 2. Trade-weighted Exchange Rates, 1990-2010

Panel A



Panel B



Source: JPMorgan.

2. The Policy Options

The weakness of the recovery is strongly suggestive of the need for additional stimulus. The difficulty is that the options for additional monetary and fiscal policy are limited. On the monetary side, short-term interest rates have been pushed to the lower bound, making it difficult to undertake further stimulus through the purchase of short-term securities. The Federal Reserve has acted to extend its purchases to government securities of longer maturity (quantitative easing) to further promote an expansion of money and credit. The problem lies with the lack of evidence that such measures can have a major impact on the economy. Attempts by the Japanese authorities to expand the monetary base with central bank purchases of securities after 2000 largely translated into higher levels of excess bank reserves with little evidence of an increase in bank lending or a measurable impact on the economy.

On the fiscal side, the constraints primarily revolve around political concerns. In the summer of 2010, the consensus among the G-20 countries to pursue stimulus through coordinated fiscal actions broke down, and they left the Toronto meeting in a state of some policy disarray. The European governments, in particular, announced intentions to reverse the stimulus measures in response to domestic opposition to the large budget deficits, investor concerns over some national bond markets, and pressures from organizations such as the IMF for the early adoption of deficit-reduction programs. In such a situation, a go-it-alone policy of further fiscal stimulus by the United States involves the risk that a considerable portion of any stimulus would be diluted in the global economy through additional imports. Furthermore, the government and many of the economic forecasts underestimated the severity of the financial collapse; and, despite an unprecedented magnitude of stimulus, the government could not prevent a severe economic contraction and large job losses. The result has been a public perception that the policies have failed to achieve their objectives, and the emergence of a pronounced lack of support for the government's fiscal program. Despite this, the Administration was able to reach a political bargain with the opposition that extended the Bush-era tax cuts for two more years, maintained the current level of unemployment benefits, temporarily restored the estate tax, extended the exemption amount for the alternative minimum tax (AMT) for 2011, and enacted an additional cut in employment taxes . The compromise amounts to a postponement of actions to reduce the budget deficit in the hopes of a stronger future economy.

To a large extent, policymakers have exhausted many of the available policy actions and may now need to wait for the private sector to cure itself and provide a stronger basis for future growth The projected growth is insufficient to reduce unemployment and there is an increasing risk that the United States will become mired in the stagnate economy that beset Japan after its financial crisis of the 1990s. Furthermore, a weak recovery will greatly complicate efforts to reduce future fiscal deficits. For example, strong economic growth–and the end of the cold war–was critical to the easy elimination of the budget deficit in the late 1990s. There is also no inherent contradiction between short-term stimulus in an economy beset by idle resources, and the longer-term need to reverse those policies to move toward a sustainable budget policy when the economy has returned to full utilization.

It is difficult, however, to coordinate the budgetary changes and maintain their credibility in a highly charged political atmosphere. Moreover, the stimulus measures need to be temporary in nature and fully integrated with a coherent and detailed plan for moving back to fiscal balance over the longer term.[1] Some of the concerns about the long term implications of fiscal stimulus could be addressed if the government focused on the development of a detailed plan for restoring budget balance even if the specific date of its enactment was made to depend upon unemployment or other measures of economic recovery. It would help reduce the uncertainty surrounding government policies and raise confidence levels. It would also involve recognizing that the budget changes will be large and controversial, requiring time to achieve a consensus.

3. International Experience and Lessons

In recent years, a significant number of countries have undertaken programs aimed at reducing their fiscal deficits with varying degrees of success. Several studies have reviewed that experience to discern if there were any common features that distinguish successful and failed programs. An OECD study focused on the experiences within 24 advanced economies since 1978–a total of 85 episodes (Guichard and others, 2007). They argue that programs that emphasize reductions in current expenditures, as opposed to tax increases or reductions in capital outlays, are more likely to succeed in terms of stabilizing the debt to GDP ratio. They also

[1] As an illustration of the type of fiscal plan that combines short-term stimulus with a certainty of long-term financing, consider an increase in the gasoline tax of 25 cents per gallon for 10 years, the proceeds of which are placed in a dedicated trust fund. Revenues would be $25-30 billion per year for a total of $250-300 billion. Given the assurance of future revenues, the administrator of the trust fund could immediately issue $250 billion in bonds to finance various infrastructure projects without the threat that the debt would never be repaid.

concluded that in many cases fiscal rules in the form of deficit targets or expenditure limits also had a favorable effect on outcomes. Much of this result appears to be associated with the emphasis placed on a fiscal deficit of less than three percent in qualifying for admission to the Eurozone. Anderson and Minarik (2006) argue that expenditure rules are more successful than deficit targets because they exclude more of the uncontrollable business cycle effects on revenues and deficits.

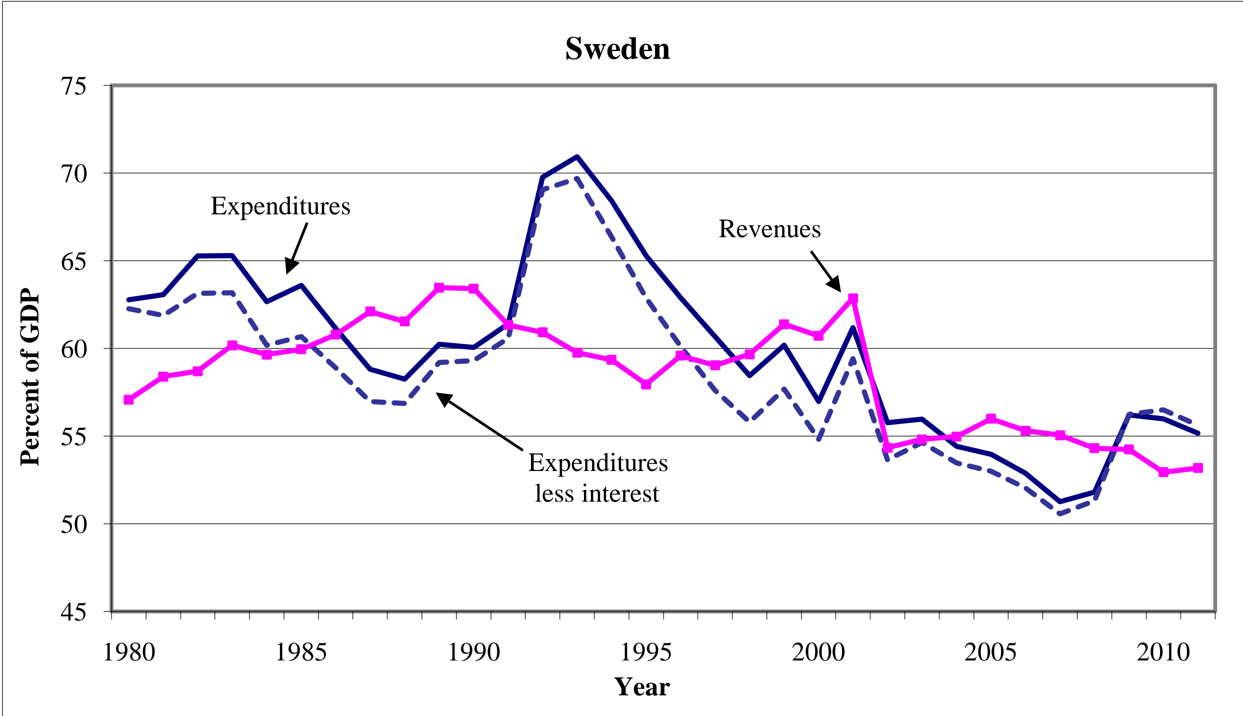
Two countries, Sweden and Canada, are interesting case studies of successful large consolidation programs; we also review what appears to be a successful United States effort to deal with its budget deficit in the 1990s. The Swedish program began in the aftermath of a financial crisis that had greatly inflated the government sector and resulted in a budget deficit of 11 percent of GDP. The government relied on a set of detailed expenditure ceilings, which distinguished 27 categories of spending and were phased in over a three-year period. Within that period, expenditures were reduced by over ten percent of GDP and the budget was shifted to a substantial surplus that was maintained up to the 2008-09 financial crisis (top panel of figure 3). Sweden is an example of the successful use of expenditure ceilings, but the task was made easier by the highly inflated level of expenditures at the beginning of the process.

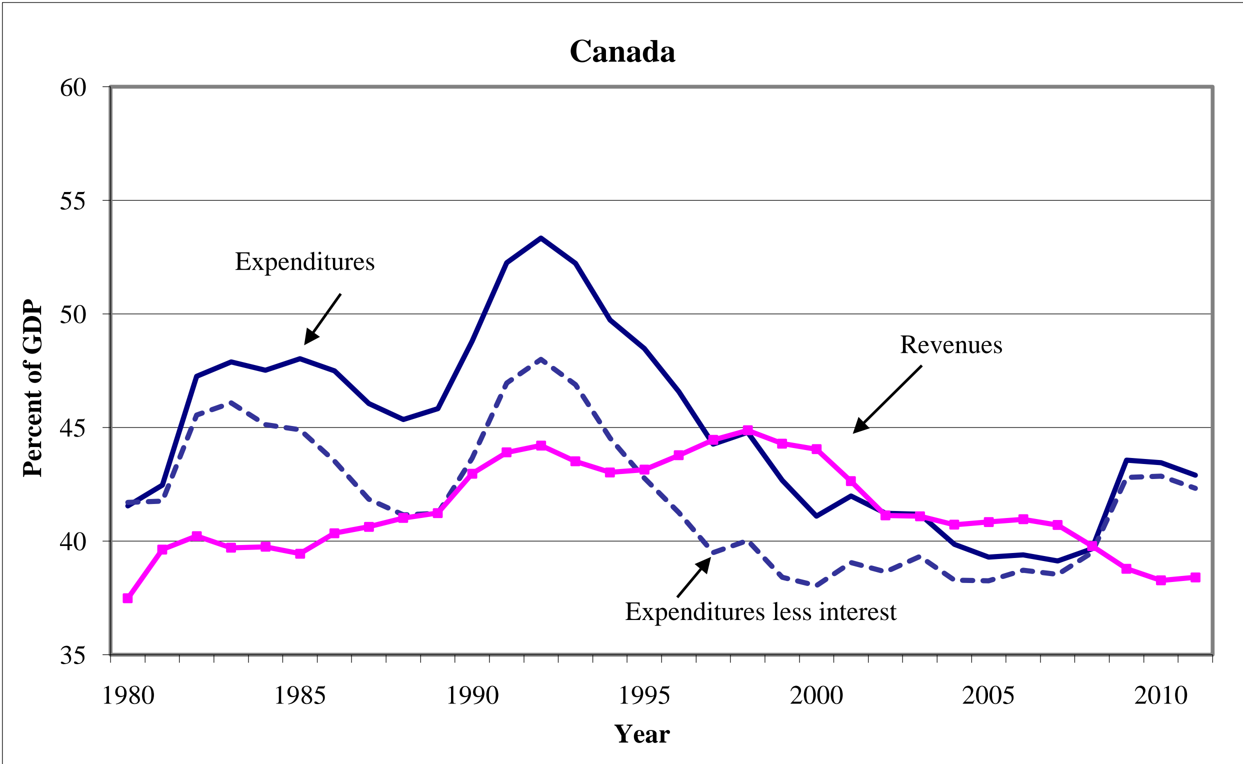
Canada's program was initiated in the mid-1990s against the backdrop of a stagnant economy with unemployment in excess of ten percent. It had a sustained budget deficit near ten percent of GDP and the public debt had risen to 70 percent of GDP. It did not use expenditure ceilings, but a comprehensive budget review–similar in some respects to "zero-based budgeting"–provided the basis for expenditure reductions across a broad range of programs.[2] Over 3 years, outlays were reduced by nearly ten percent of GDP, the revenue share remained constant and Canada entered an extended period of budget surpluses and the public debt was cut to less than 25 percent of GDP by 2007 (the lower panel of figure 3). Both Canada and Sweden removed the public pension programs from the regular budget and instituted a series of reforms aimed at stabilizing the programs' long-run finances.

The reviews of international experiences highlight the importance of three common themes: (1) credible and transparent rules, (2) the need for an enforcement mechanism, and (3) flexibility and robustness in the response to unforeseen shocks. Many have used the issue of

[2] In zero-based budgeting, every program is subject to a comprehensive review rather than focusing on the increase over the prior year's level. While the Canadian actions were focused on the expenditure side, concerns about budget deficits were a motivation for introducing a value-added tax in 1991 to replace the manufacturing sales tax.

Figure 3. General Government Expenditures and Revenues, 1980-2011
Percent of GDP





Source: OECD Economic Outlook Data Bank

credibility and transparency to promote an emphasis on expenditure caps rather than a deficit rule because of the uncertainty of short-run revenue yields. Officials in Sweden and Canada have also stressed the importance of not promising too much, since a failure to meet intermediate goals can quickly destroy the credibility of the overall program. Fiscal consolidation is as much a political as an economic task, and the successful countries are also identified by the high degree of public support that the effort generated.

Table 3. General Government Outlays by Function, 2007

Percent of GDP

	EU-15	EU-4	USA	Japan
General public services	6.3	6.4	5.1	4.7
Defense	1.5	1.6	4.3	0.9
Public order and safety	1.7	1.8	2.2	1.4
Economic affairs	3.7	3.2	3.7	3.8
Environmental protection	0.7	0.8	0.0	1.2
Housing and community amenities	1.0	1.1	0.7	0.6
Health	6.7	6.9	7.7	7.2
Recreation; culture and religion	1.1	1.0	0.3	0.1
Education	5.1	5.1	6.3	3.9
Social protection	18.0	18.9	7.1	12.4
Total general government	45.9	46.7	37.4	36.3
Total less social protection	27.8	27.8	30.3	23.9
Gross Fixed Capital Formation	2.5	2.2	2.5	3.1

Source: OECD National Accounts and author's calculations.

It is sometimes argued that comparison to other high-income countries is of limited relevancy to the United States because of a perception that the latter has a much smaller government sector. This comparison with other OECD countries is shown in table 3 for expenditures at all levels of government allocated by major function. Government outlays are a lower share of GDP in the United States and Japan. It is noteworthy, however, that the differences are largely concentrated in the category of social protection, where Europe spends much more on pensions, disability, unemployment and welfare programs. Excluding social protection, the United States actually devotes a larger share of GDP to the government sector because of a higher than average level of defense spending. The patterns of other expenditures in the United States and Europe are surprisingly alike. The similarity of healthcare spending is

particularly striking because the U.S. number only includes health care for the elderly and poor, whereas it covers a much larger share of the population in the other countries.[3]

The United States had a successful episode of deficit reduction in the last half of the 1990s, after more than a decade of fruitless debate, reform of the budget process, and efforts to impose various fiscal rules. The 1980s marked the start of a sharp ideological split as Republicans, under the leadership of Ronald Reagan, shifted their focus from a traditional opposition to budget deficits toward a sustained advocacy of tax reductions–leaving the problem of the deficits to be raised by others. Democrats were unwilling to cut domestic programs and Republicans opposed tax increases; and, as shown in figure 5, the stalemate persisted throughout the 1980s and early 1990s.

The Gramm-Rudman-Hollings (GRH) Act of 1985 set annual deficit targets and called for the sequestration of discretionary spending if those overall targets were not achieved. Mandatory spending programs, which represented over half of the budget, were exempt from the sequestration process. However, GRH never worked because the Congress and the Administration could avoid the constraints by adopting optimistic economic and technical assumptions to project deficits that complied with the targets without the need to actually achieve them in practice. The Budget Enforcement Act (BEA) replaced GRH in 1990 and introduced pay-as-you-go (PAYGO) rules that prevented legislation that would lower taxes, create new entitlement programs, or expand existing programs unless the costs were offset by other legislative action. However, it largely served as a mandate in support of the status quo.

Over the last half of the 1990s, the budget situation turned highly favorable for other reasons. The end of the cold war provided the United States with a substantial fiscal dividend in the form of reduced defense spending; combined with lower interest rates; this led to a reduction of overall spending of about two percent of GDP. At the same time, the economic boom raised revenues by another two percent of GDP between 1995 and 2000, primarily due to increased capital gain tax receipts. Both effects are very evident in figure 5, which shows the decline in expenditures and rise in revenues relative to GDP. At times a political stalemate and the passage of time can provide a solution, but that is unlikely to be the case for the United States going

[3] If private health care expenditures are included on the grounds that they are little different from those funded through the government, U.S. outlays would be increased by about six percent of GDP and would be well above those of the other countries.

forward: resolution of the deficit problem is more likely to require specific actions to change policies.

4. Budget Outlook

The stimulus program enacted in March of 2009 was designed as a temporary measure in which the expenditure and tax measures were designed to expire after a few years. Many of the revenue measures were again extended for two years in December of 2010, but again the changes are scheduled to expire after 2012. Most of the revenue losses can be attributed to extension of the Bush-era tax cuts and prior corporate tax provisions for two years, a one-year reduction in the employment tax equal to two percent of payroll, and an increase in the exemption amount for the AMT for 2011. In total, estimated revenues have been lowered, relative to mid-2010 projections, by $-409 billion in FY 2011, $335 billion in FY 2012, and $68 billion in FY 2013.

Despite the focus on the discussion on short-term stimulus, the reality has been a large sustained deterioration in the underlying budget situation. It is demonstrated in the top panel of figure 4, which compares the 10-year budget outlook compiled by the Congressional Budget Office (CBO) in August of 2008 with the CBO outlook as published in January of 2011. In both cases, the Bush-era tax reductions were assumed to expire in line with current law; but, whereas the early 2008 projections indicated a small surplus by mid-decade, the current projections show a sustained deficit in excess of three percent of GDP. The outlook for the public debt in the lower panel shows an even more dramatic shift from a debt-GDP ratio below 40 percent and falling to over 75 percent.

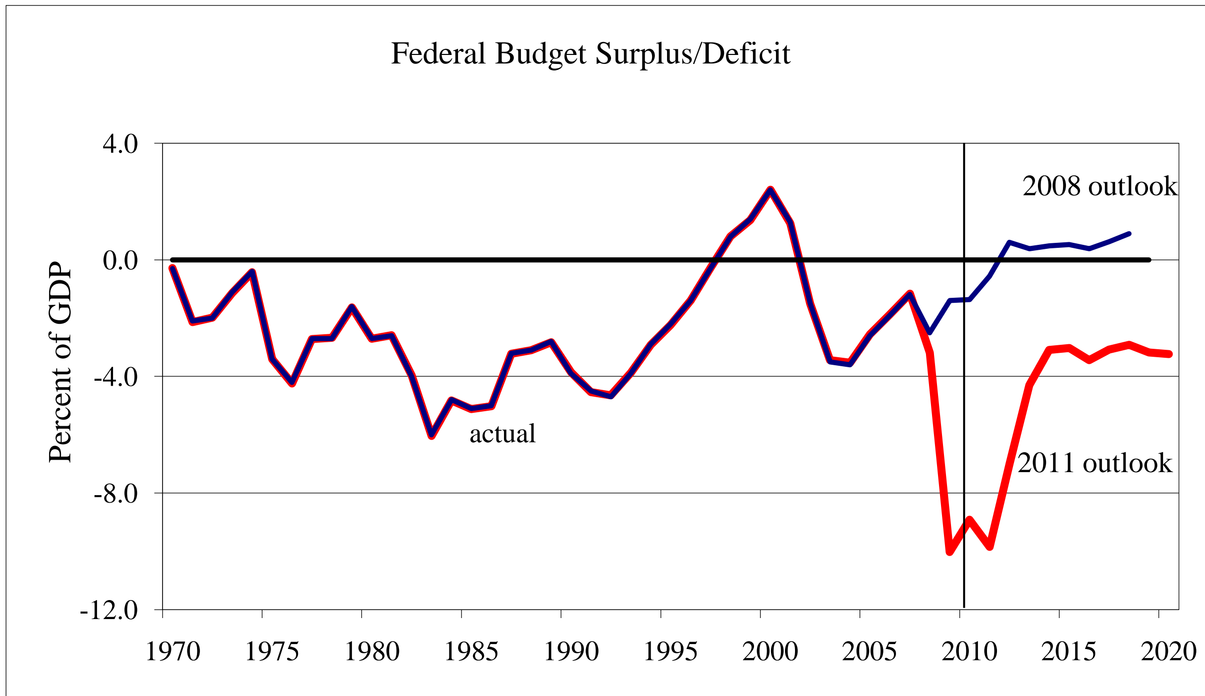
Even so, the CBO numbers provide an overly optimistic picture and understate the magnitude of the budget problems. They assume a return to full employment by 2015 and expiration of the Bush-era tax cuts after 2012. In addition, prior Congresses have always acted to extend the inflation adjustments to the AMT, which prevent an increase in the proportion of incomes covered by the tax. If current policy is sustained through extension of the tax cuts and indexation of the AMT after 2012, the budget deficit would increase by an additional four percent of GDP. In addition, while CBO forecasts an average annual growth of only 3 percent for 2011 and 2012, it assumes that growth will accelerate in subsequent years to an average of 3.4 percent, eliminating the current 6 percent shortfall to potential GDP by 2015. Alternatively, if economic growth continues to simply parallel the growth of potential GDP, revenues would be

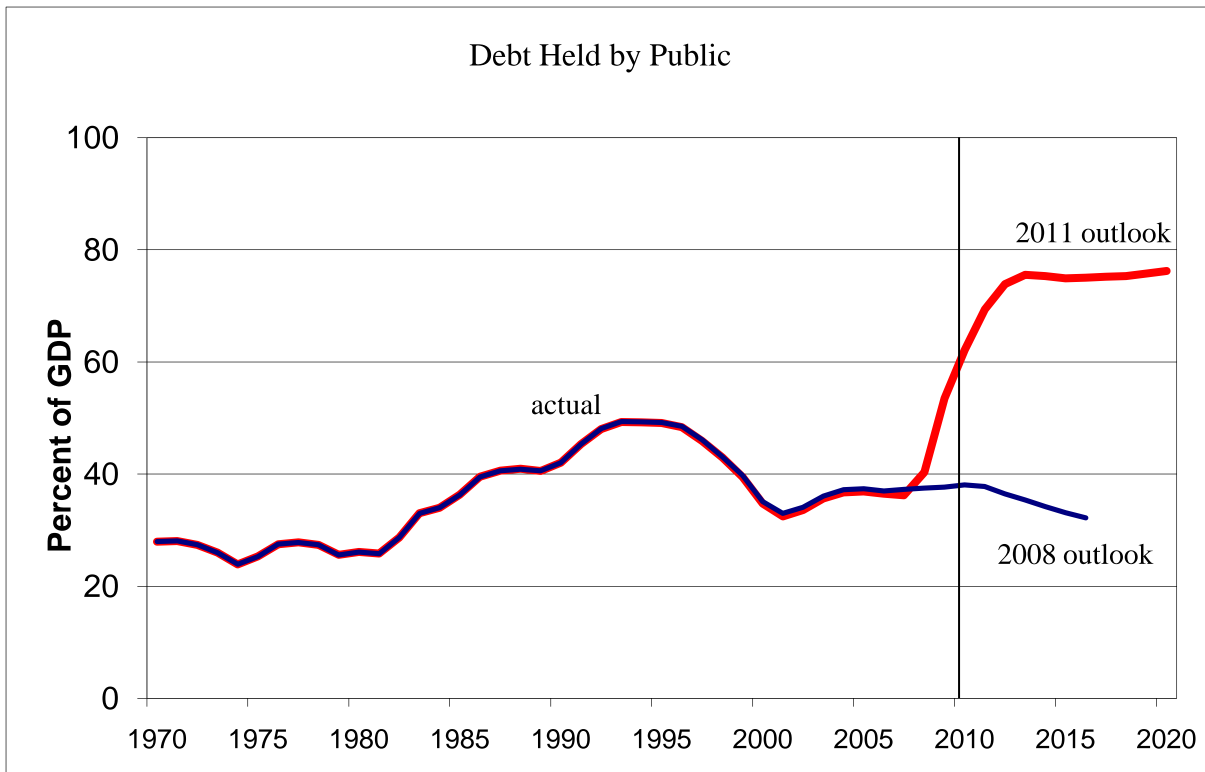
substantially reduced. Current estimates of CBO suggest that revenues would decline by 1-1¼ percent for each one percent reduction in the level of GDP. That is, a continuation of the current output shortfall would lower revenues by 6-8 percent in the middle of the decade and widen the deficit by 1-1½ percent of GDP.

On the expenditure side, the CBO projections incorporate the expiration of the various stimulus programs and the assumption that future growth in discretionary spending will be limited to adjustments for price inflation. The latter assumption alone implies that spending will decline by about 2½ percent of GDP over the next decade compared to an increase of three percentage points over the prior ten years. Perhaps, the war spending will wind down in future years, but it accounts for only a little more than one percent of GDP. The projection of a return to full employment by 2015 also contributes to a large reduction in unemployment insurance payment. Finally, the projections incorporate a legislated requirement to reduce physician payments under Medicare, but in prior years the Congress has always waived the provision.[4]

[4] Beginning in 1997, the congress has sought to limit the growth in physician services to a sustainable rate based on increases in GDP per capita and the growth in beneficiaries. Actual payments began to exceed the sustainable rate in 2002, but the congress has always passed waivers that prevented the payment reductions. The difference between the actual payments and the allowable amount has cumulated over the years to imply about a 20 percent cut in physician payments.

Figure 4. The Federal Budget Balance and the Public Debt, 1970-2021.
Percent of GDP





Source: Congressional Budget Office, Budget and EconomicUpdate, January, 2011 and August 2008. Baseline Projections

A. The Short-run Challenge

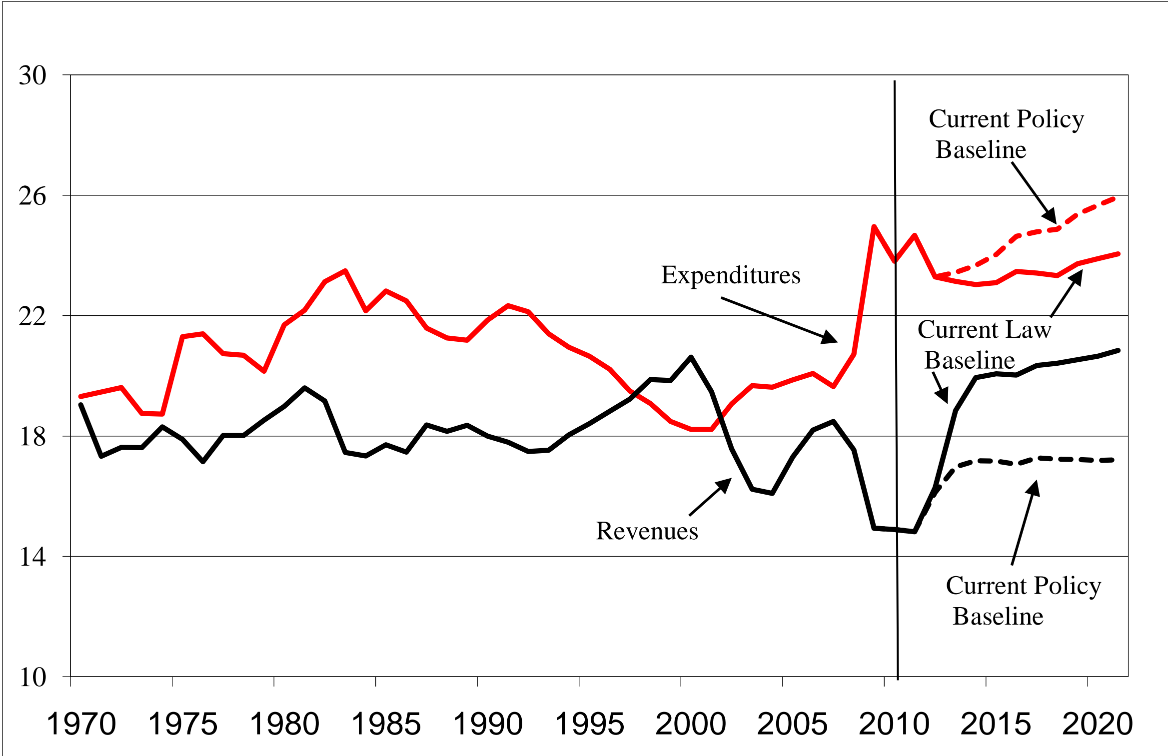
Two alternative policy baselines are illustrated in figure 5. The first is the standard CBO *current-law* baseline that assumes tax policy evolves in line with existing legislation–that is, expiration of all of the temporary tax reductions. In addition, future increases in discretionary expenditures are limited to adjustments for price inflation. The alternative is a *current-policy* baseline that assumes continuation of the Bush-era tax cuts, inflation adjustments for the AMT, and increases in discretionary spending in line with the growth of GDP. In both cases, the temporary measures of the American Recovery and Reinvestment Act (ARRA) of 2009 are largely complete in 2011 with few future budget implications.[5] The tax aspects of the two alternative baselines are discussed more fully in a later section.

If the Congress and the administration simply adhered to the *current-law* baseline budget of the CBO, much of the work of moving toward fiscal balance would be done and the deficit would be cut from 9 percent in fiscal year 2010 to less than 3 percent in 2015 and thereafter. That is, much of the fiscal problem could be resolved if the President and Congress agreed to do nothing. In that sense, a solution to the deficit does not require a "grand bargain". However, neither the Administration nor the Republicans are willing to accept an expriation of the tax cuts.

The alternative of a continuation of present policies implies a budget deficit that remains in the range of 7-8 percent of GDP. Measured as a share of GDP, expenditures are well beyond their historical norm under both alternatives: at 23-24 percent of GDP. In the current law alternative, expenditures are higher than at any time since World War II. Under the continuation of current policies, they would reach 26 percent of GDP in 2021. If the Bush-era tax reductions are allowed to expire, the effective tax rate would also be above its prior peak reached in 2000. On the other hand, continuation of current tax policies would put the effective tax rate at 17 percent, well below its historical average.

[5] A more detailed consideration of alternative budget baselines with respect to various Administration proposals is available in Auerbach and Gale (2010).

Figure 5. Federal Revenue and Expenditures, 1970-2021
Percent of GDP



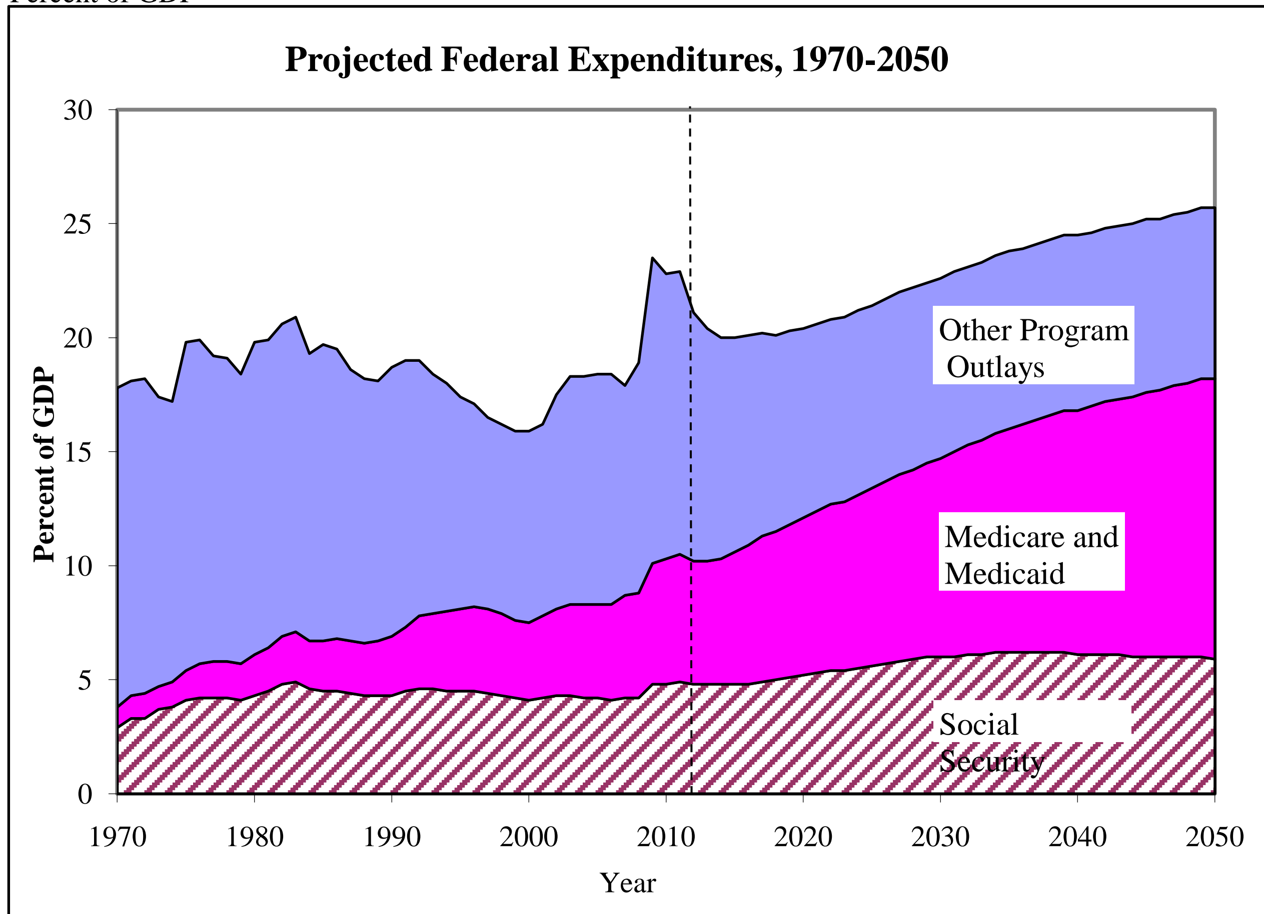
Source: Congressional Budget Office. 2011.

B. Long-term Budget Outlook

Less than 40 percent of federal outlays are subject to annual appropriations and control, and that percentage is projected to fall to about 30 percent by 2020. Instead, most programs operate under fixed eligibility rules that are infrequently changed and the government commits to providing payments for all who qualify. These mandatory or entitlement-based programs include Social Security, Medicare and Medicaid, other income support programs, and interest on the public debt. The CBO (CBO, 2010a) prepares long-term projections of the health and retirement programs under the assumption that the program rules will remain unchanged. For other programs, spending is basically held constant as a share of GDP beyond 2020 except for some offsetting Medicare receipts and payments for the earned-income tax credit. Those projections are summarized in figure 6. The primary value of the projections is to show the extent to which rising health care costs and Social Security dominate the long-run budget outlook. Their growth is governed in turn by the aging of the population, and in the case of Medicare, by the additional increase in costs per enrollee in excess of the growth in GDP per

capita. Total program outlays are projected to expand from 20 percent of GDP in 2020 to about 25 percent by 2050, with nearly all of the increase being accounted for by the rise in spending on medical care.

Figure 6. Projected Federal Program Outlays, 1970-2050.
Percent of GDP



Source: CBO, 2010a.

5. Options for Fiscal Consolidation - Expenditures

The long-run budget review highlights the importance of population aging and health care costs as the driving forces behind the budget challenge. Population aging in particular illustrates some of the inevitable changes that suggest that it will be difficult to keep government spending at or below historical levels. Yet, aging and increased health care costs were not the primary sources of growth of federal spending over the past decade. Instead, the expansion of spending can be traced to increases in discretionary spending (primarily defense), and new initiatives such as the prescription drug program. Most important, the financial crisis and the

legislation enacted to contain it drove up the deficit in the short run, and added permanently to the debt and thereby projected interest costs. Between 2008 and 2010, the CBO raised its projections of interest costs at the end of the decade by $400 billion or two percent of GDP.

The major categories of expenditures and their growth are outlined in table 4. Expenditures are shown as a percent of GDP with the expectation that a constant share would represent an unchanged burden. Also, the historical data are included to give some sense of long-term growth in the major program areas. The inclusion of data for 2000 refers to the last episode of a balanced budget, and 2008 precedes the outbreak of the financial crisis. The projected data refer to the *current law* baseline of CBO, and both 2015 and 2020 reflect the CBO assumption that the economy will have returned to full employment and short-term interest rates will rise back to a five percent rate. The major program groupings provide a framework for the following discussion of the budget options.

A. Social Security

After remaining constant as a share of GDP for several decades, spending on public pensions will begin to rise as the baby boom generation moves into retirement. However, the system currently operates with a small financial surplus and will continue to do so until about 2025.[6] In that sense, it is not a contributor to the medium-term fiscal problems. However, it does face a long-run financing deficit equal to nearly two percent of taxable payroll; and given the limited options that individuals face once they reach retirement age, early actions to resolve the financing problems are preferable to waiting until the crisis is realized. Moreover, given the complexity of the tradeoffs involved in implementing any reforms, a case can be made for addressing efforts to put the system on a sound long-run financial base outside of the current efforts to resolve the broader budget imbalances. This is the approach chosen in both Sweden and Canada, and it helped build support for a comprehensive set of reforms to achieve long-run solvency.

The U.S. system has been highly successful in providing a minimal level of income for retirees, reducing poverty among the elderly to low rates–below those of the general population, but there is a pronounced clustering of beneficiaries at income levels only slightly above the

[6] According to the 2010 Trustees Report, the system can draw on its reserves to maintain benefits until 2037, when it will have to cut benefits by 22 percent to stay within the limits of its annual revenues.

poverty line. Benefits are based on average lifetime earnings. The formula used to translate past earnings into the initial benefit is highly progressive; that is, the replacement rate–the ratio of benefits received to a worker's past earnings–is higher for people with lower average earnings than for people with higher earnings.[7] In computing average earnings, past earnings are converted to current levels based on changes in the economy-wide average wage, a form of wage indexation. After retirement, subsequent benefits are adjusted annually in line with changes in consumer prices. The normal retirement age is 66, but workers can retire earlier with an actuarially reduced benefit. The contribution rate is 12.4 percent of taxable wages. The ceiling on taxable wages is adjusted annually in line with average wage inflation and is currently about $108 thousand. The dedicated tax revenues are credited to a trust fund to pay current and future benefits and the fund also is credited with the interest on its balances. The trust fund is projected to be exhausted in 2037.

Since the 1983 reforms, which resulted in an increase in the contribution rate and a gradual increase in the retirement age, payments into the fund by new young workers have been sufficient to finance their expected pension cost, but since its inception the system provided a subsidy to several generations of older workers who had either contributed to the system at low rates or for only a portion of their work life.[8] Their benefits were financed out of the contributions of younger workers, but the system was left with a funding deficit that continues to grow. It is these legacy costs that are the fundamental source of the system's financial difficulties.

A recent CBO report (CBO, 2010b) summarized the implications of a large number of alternative Social Security reforms, affecting both the benefit and contribution sides of the system's finances that could be used to resolve the funding problems. At one level, the choices are simple as they involve either an increase in the contribution, a benefit reduction or a combination of the two. But the issues become more complex when it comes to deciding on the timing of the changes and their influence of current versus future participants: current retirees are active voters with a singular focus on their own benefits. In addition, proposals to

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[7] Average benefits are about 40 percent of average wages, but the replacement rate is higher at lower wages and workers are eligible for a 50 percent spousal benefit. The system is somewhat less progressive than implied by the benefit formula because low-wage workers tend to die at an earlier age. On the other hand, they are also more likely to make use of the disability program prior to reaching retirement.

[8] The extent of the cross-subsidy between the young and current and past generations is measured by the actuarial costs as reported in table IV.B7 of the OASDI Trustees Report (2010).

progressively scale back benefits over time raise questions about their long-run sustainability. There are also concerns about the effects of benefit reductions at the bottom of the distribution versus the need to maintain the support of higher-wage workers for whom the system already implies a low return.

All of these issues are both technically complex and intensely political, and it might be better to address them within a separate process subject to a clear requirement to establish and maintain long-run solvency. Thus, the system's problems might be best dealt with by creating a bipartisan commission to develop a set of measures that would establish long-run actuarial balance and then submit them to the Congress with the requirement of a straight up-or-down vote without amendment. This is basically the approach that was employed to resolve the funding crisis in 1983.

B. Medical Care Programs

Medicare and Medicaid are subject to the same demographic factors that will increase Social Security benefits in future years; but additional pressures result from a historic trend of increases in costs per enrollee in excess of the average growth in per capita incomes. In past decades, this excess cost growth has averaged about two percent per year. CBO projects the excess cost to grow at a slightly lower rate of about 1.7 percent per year over the next decade, and to gradually slow further in the extended long-run projections. As shown in table 4, medical care is the dominant source of the rise in budget outlays: as a share of GDP it will more than double between 2000 and 2020.

Table 4. Budget Expenditures and Revenues By Major Category, 1980-2020

Percent of GDP

	Discretionary spending				
	Defense			Non-defense	Subtotal
	Total	Afg-Iraq	Other		
1980	4.9	0.0	4.9	5.2	10.1
1990	6.1	0.0	6.1	3.9	10.0
2000	5.2	0.0	5.2	3.5	8.7
2008	4.3	1.3	3.0	3.6	7.9
2010	4.7	1.2	3.6	4.5	9.3
2015	4.1	0.9	3.2	3.5	7.7
2020	3.7	0.8	2.9	3.1	6.8

	Mandatory Spending				
	Social Security	Health Care	Other Mandatory	Offsetting Receipts	Subtotal
1980	4.3	1.8	4.6	-1.1	9.6
1990	4.3	2.6	4.0	-1.0	9.9
2000	4.1	3.4	3.0	-0.8	9.7
2008	4.3	4.6	3.6	-1.3	11.1
2010	4.8	5.5	4.1	-1.3	13.2
2015	4.9	5.8	3.6	-1.3	12.9
2020	5.2	6.5	3.4	-1.4	13.8

	Discretionary Spending	Mandatory Spending	Net Interest	Total Outlays
1980	10.1	9.6	1.9	21.7
1990	10.0	9.9	3.2	23.1
2000	8.7	9.7	2.3	20.7
2008	7.9	11.1	1.8	20.7
2010	9.3	13.2	1.4	23.8
2015	7.7	12.9	2.5	23.1
2020	6.8	13.8	3.3	23.9

Source: CBO 2011, Current Law Baseline

Increases in the age of eligibility for Medicare (65) in line with those for Social Security would have a transitory effect of reducing cost increases; but the key to achieving large budget saving within the health care programs requires slowing the rate of excess cost growth. Unfortunately, the basic source of that growth is subject to dispute. Some studies emphasize the dominant influence of new cost-increasing technologies, whereas others point to excessive utilization of some treatments, slower rates of productivity improvement than in the economy as a whole, malpractice insurance costs, or other forms of inefficiencies. While the government could lower its costs by introducing more restrictive payment controls, there is a concern about the interactions and potential for cost shifting with private-sector insurance programs, which are trying to achieve the same objectives. In addition, having gone through a bitter debate over the 2010 health care legislation, which focused on expanding coverage, the President and the Congress may be reluctant to return to the subject to address cost containment.[9] Effective cost containment will require increased incentives for doctors, hospitals, and patients to control costs; and those measures will be highly unpopular among the affected population. Moreover, many of the past efforts to introduce incentives for the efficient use of health care services, such as co-payments and other forms of cost-sharing, have been systematically circumvented. The CBO published an extensive list of suggestions for reform of the public health care systems (CBO, 2008), but most of those proposals revolved around various means of increasing the share of costs charged to the pool of potential beneficiaries without a clear idea of how to alter the rate of underlying cost growth.

A fundamental problem with the system is that the opportunities for medical interventions are continually increasing, yet the marginal price for even day-to-day care is far below its costs and for some, nearly zero. Without an effective price for services, the system generates excess demand and inefficiencies. Other countries have responded by introducing various forms of rationing to control costs, but such measures have been strongly opposed by both providers and beneficiaries in the United States. Uncertainties about how to best redesign the program in the 2010 health legislation led to delay of action on cost containment and a limited focus on pilot programs.

[9] There have already been suggestions that the government should delay further actions to allow time to observe the effect of some of the new pilot programs incorporated in the 2010 legislation.

C. Other Spending Programs

The CBO projections in the *current law* option already include ambitious targets for reducing the share of GDP devoted to the discretionary programs. Limiting the growth in these programs to the rate of inflation after 2011 results in a decline of two percentage points in spending relative to GDP by 2020 (table 4). However, that 2011 baseline is inflated by the full inclusion of spending on military operations in Afghanistan and Iraq. If these military theater operations were sharply reduced over the next ten years, discretionary spending could be cut back by an additional ½-¾ percent of GDP. Table 4 also shows that defense spending outside of the war theaters has grown in line with GDP since 2000. Nondefense discretionary spending has also risen slightly as a share of GDP. Both forms of discretionary spending are projected to in future years to shrink relative to GDP under the assumption that they will be limited to the increase in prices. Similarly, the share of GDP devoted to mandatory expenditure programs, other than health and social security, is projected to shrink substantially in future years. That is largely due to the CBO projection of an economic recovery leading to lower rates of spending within the income security programs, such as unemployment insurance and the earned income tax credit.

The CBO has published a volume (CBO, 2009) with a wide range of budget options as a complement to its earlier evaluation of options for health care spending. While a large number of options for expenditure reductions are identified, most of the individual proposals result in small cost savings. It highlights the need, as in the example of the Canadian fiscal consolidation, for a wide-ranging budget review mechanism to generate cost savings across a range of programs. Over many years, the budget has accumulated a significant number of programs whose costs significantly outweigh their benefits. A detailed analysis of the hundreds of existing programs is beyond the scope of this paper. However, prior analysis by CBO and others suggests that the low-value programs are those that are concentrated in the areas of federal subsidies, overlap with state programs, and could be performed in the private sector (Sawhill and Schultze, 2004).

6. Current Revenue Outlook

Before evaluating revenue options that would move the U.S. towards fiscal balance it makes sense to look closely at the revenue outlook. As explained earlier, official Congressional

budget and revenue projections are prepared in relation to a “current law” baseline, which assumes that provisions of law that are scheduled to expire will in fact do so, notwithstanding the fact that Congress regularly has extended those provisions in the past, and/or is expected to do so in the future. Analysts often develop alternative “policy” baselines that reflect more realistic predictions of Congressional behavior.

A. *Current law baseline*

Under the *current law* baseline, CBO forecasts that revenues will increase rapidly climbing from 14.8 percent of GDP in 2011 to 17 percent in 2012 and 20.8 percent in 2021 (see figure 5). If revenues were to reach this level in 2021 it would be a historic high. Since the end of World War II, revenues as a percent of GDP have averaged about 18 percent. If revenues were to follow the current law baseline projections, the deficit would fall from 9.8 percent of GDP in 2011 to 3.1 percent of GDP in 2014 and average less than 3.5 percent of GDP for the rest of the current ten-year budget window.

Underlying the forecasted growth in revenues in the current law baseline is an almost doubling in proceeds from the individual income tax from 6.2 percent of GDP to a high of 11.2 percent of GDP in 2021. The rapid growth in revenues is due to a variety of factors. The most important are the scheduled expiration of the 2001 and 2003 tax cuts (the "Bush tax cuts") at the end of 2012, the expansion of the AMT, real bracket creep,[10] a projected increase in taxable retirement income, the recent health care legislation, and the increase in revenues associated with the projected economic recovery.

CBO also has projected the revenue consequences of alternative baselines that are more in line with current policy. The ten-year cost of simply extending the Bush tax cuts is $2.5 trillion not counting the interest payments on the increased debt (see table 5). Extending several provisions expiring at the end of 2011 and 2012 (many of which Congress has extended in previous years) adds an additional $.8 trillion to the deficit (not counting debt service).

[10] ‘Real bracket creep’ refers to the increase in revenues when income growth pushes taxpayers into higher tax brackets, even when the brackets are adjusted for price inflation.

Table 5. Deficit Forecast under Current Law and Current Policy Baselines
(dollar amounts in billions)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total, 2012–2021
Current law baseline											
Deficit	-1,100	-704	-533	-551	-659	-617	-610	-696	-739	-763	6,971
As a percent of GDP	-7.0	-4.3	-3.1	-3.0	-3.4	-3.1	-2.9	-3.2	-3.2	-3.2	-3.6
Extend Bush tax cuts											
Effect on the deficit	-2	-118	-245	-276	-287	-297	-306	-314	-323	-333	2,502
Debt service	0	-2	-9	-21	-36	-53	-71	-91	-112	-134	-68
As a percent of GDP	0.0	-0.7	-1.5	-1.6	-1.7	-1.7	-1.8	-1.9	-1.9	-2.0	-1.3
Extend other expiring tax provisions											
Effect on the deficit	-12	-77	-113	-100	-87	-80	-75	-72	-71	-73	-759
Debt service	0	-2	-5	-10	-16	-21	-26	-31	-37	-42	-33
As a percent of GDP	-0.1	-0.5	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4
Index the AMT											
Effect on the deficit	-9	-94	-46	-51	-56	-63	-70	-80	-90	-102	-661
Debt service	0	-2	-4	-7	-10	-14	-18	-23	-29	-35	-24
As a percent of GDP	-0.1	-0.6	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.6	-0.3
Extend Bush tax cuts and index AMT											
Effect on the deficit	-12	-223	-344	-386	-410	-435	-460	-487	-515	-546	3,820
Debt service	0	-5	-15	-32	-53	-78	-106	-135	-168	-203	-105
As a percent of GDP	-0.1	-1.4	-2.1	-2.3	-2.4	-2.6	-2.7	-2.8	-3.0	-3.1	-2.0
Current policy baseline: Extend Bush tax cuts, index AMT and extend other expiring tax provision											
Effect on the deficit	-24	-300	-457	-486	-498	-515	-534	-559	-587	-619	4,579
Debt service	0	-6	-20	-42	-69	-99	-132	-167	-205	-246	-138
As a percent of GDP	-0.2	-1.9	-2.8	-2.9	-3.0	-3.1	-3.2	-3.3	-3.5	-3.6	-2.4

Source: CBO (2011), Table 1-7.

There are important revenue implications of the interaction of current income tax policy and the AMT. The AMT functions as a parallel income tax to the regular income tax; taxpayers pay the greater of their regular income tax or AMT liability. The AMT base is considerably broader than the regular income tax measure of taxable income, and the maximum AMT rate is 28 percent (compared with the regular income tax's maximum rate for 2010 of 35 percent). The combination of the Bush tax cuts (which applied only to the regular income tax) and the many personal and other deductions available for the regular tax but not the AMT would without further adjustment lead to 28.5 million taxpayers being subject to the AMT in 2010.[11] Congress has responded to date by "patching" the AMT; this term refers to a political accommodation under which the AMT is adjusted through temporary provisions to keep the number of affected taxpayers constant at an arbitrary level of about 4.4 million taxpayers.

The expiration of all the Bush tax cuts would by itself reduce the scope of the AMT; conversely, extending all the Bush tax cuts would either dramatically increase the scope of the AMT or require an ever-increasing revenue cost to "patch" it. The ten-year cost of extending the Bush tax cuts and "patching" the AMT is $3.8 trillion, not including interest payments on the resulting increase in debt. What we call the "current policy" baseline --- extending the Bush tax cuts, "patching" the AMT, and extending expiring provisions --- adds a cumulative $4.6 trillion to the deficit. Including interest payments on the increased debt, the cost of current policy relative to current law grows from 1.9 percent of GDP in 2013 to 3.6 percent of GDP by 2021.

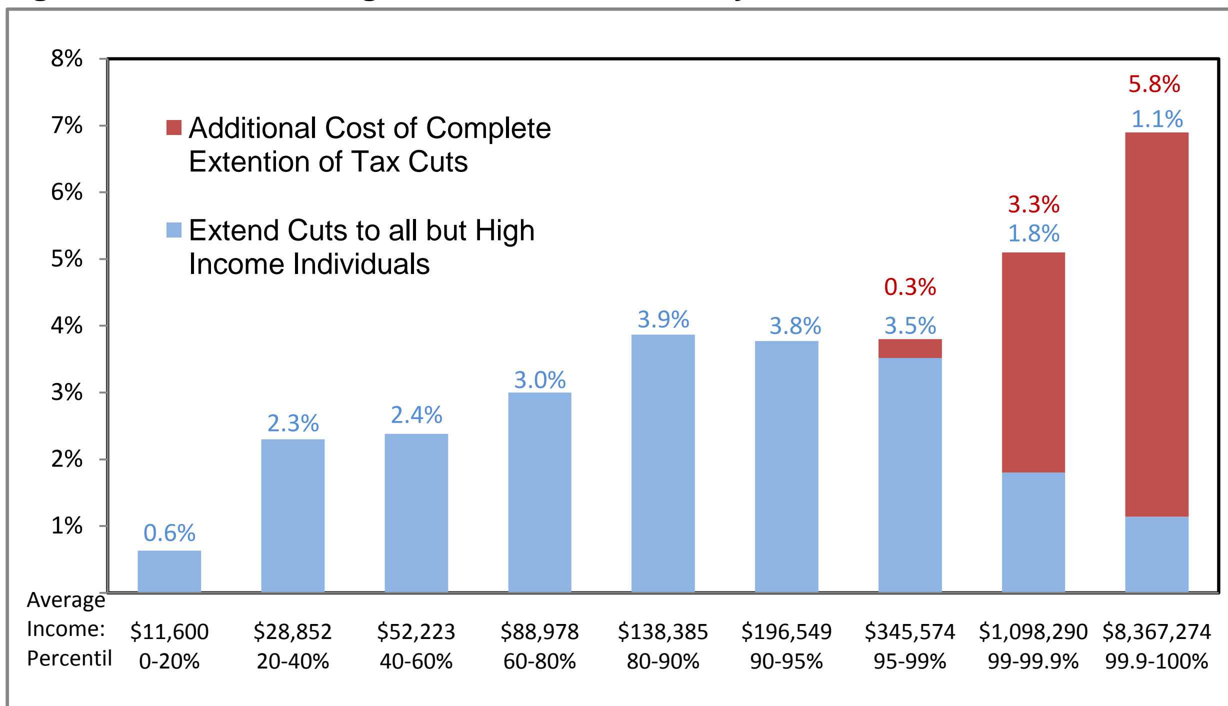
B. The Bush Tax Cuts

The starting point for fiscal consolidation on the revenue side is the decision of whether the Bush tax cuts should be extended on a permanent basis. While the President and the Republican leadership opted to delay a final decision, it will reemerge in 2012 . President Obama has already proposed a permanent extension for all except the highest-income taxpayers (families with income below $250,000 and singles with income below $200,000). Republican leaders generally have argued for permanently extending all the Bush tax cuts without exception. Thus, it can be argued that very little of significance remains under dispute from the perspective of their contribution to fiscal balance. Obama's proposal is for extension of 75 percent of the Bush tax cuts, and the difference between the two positions is less than 0.5 percent of GDP. Instead

[11] See Lim and Rohaly (2009) for an analysis of the reach and revenue consequences of the AMT.

the debate is largely about the distributional affects. As shown in an earlier analysis (Looney, 2010), the distributional effects of partial or full extension differ only for the taxpayers at the very top of the income distribution.

Figure 7. Percent Change in After-Tax Income by Income Class, 2012



Source: Urban-Brookings Tax Policy Center Microsimulation Model (Version 0509-5)

The Bush tax cuts lowered rates on ordinary income and added a new 10 percent bracket, reduced the marriage penalty, reduced tax rates on capital gains and dividends, doubled the child credit and expanded eligibility for the refundable credits, eliminated the phase-out of personal exemptions and the limitation on itemized deductions that hit higher income taxpayers, and expanded tax incentives for education. The Urban-Brookings Tax Policy Center (TPC) finds that while nearly three-quarters of taxpayers would receive a tax cut from continuing these expiring rules relative to allowing them to expire, a full 99 percent of taxpayers in the top two quintiles would receive a tax break while only a quarter of those in the bottom deciles would. In fact, TPC reports that the difference between full and partial extension affects only 2 percent of all taxpayers. Figure 7, from the TPC analysis, shows the percent change in after-tax income by income group that would result from complete extension of the Bush tax cuts and the administration proposal (partial extension). In terms of dollars, those in the top 1 percent of the

income distribution would receive an average tax cut of $14,022 under partial extension and $25,179 under full extension. For those in the top 0.1 percent (with average incomes of about $8.4 million), full extension provides an additional $310,000 on average to their $61,510 average tax cut.

7. Options for Fiscal Consolidation – Revenues

As discussed above, expenditure reform is fundamental for fiscal consolidation but will require difficult and unpopular choices. Expenditure reform alone, however, will not be enough to address the medium and long-term U.S. fiscal imbalance. As a result, federal government spending decreases must be combined with revenue increases. Options for revenue raising policies range from incremental revisions of existing tax rates or structures to more fundamental reforms of the existing U.S tax system. In addition, the deteriorated fiscal outlook may provide an opportunity for the U.S. to introduce new revenue sources such as a value-added tax (VAT) and environmental taxes. These revenue sources may raise funds more efficiently than the current system's heavy reliance on the income tax.

It is important to understand the starting point for any reform of the U.S. federal tax system: near-exclusive reliance on income taxes and payroll taxes; an individual income tax system that is riddled with special government spending programs framed as tax reductions, and that as a result is both extremely complex and inefficient and a corporate tax system with the same undesirable attributes as well as a high statutory tax rate that is increasingly out of step with other developed countries; and an estate tax that temporarily expired in 2010, was reinstated for 2011 and revert back to 2001 law in 2013.We have organized our discussion on the tax side as involving four broad options: (1) increase revenues within the current framework of the individual and corporate income tax, (2) introduce a VAT, (3) introduce a tax on carbon emissions, and (4) initiate a program of fundamental tax reform that incorporates elements of the first three options.

A. Expand the Existing Income Tax System

Before considering more fundamental reforms of the tax system, a natural question is whether the current U.S. tax system can simply be "dialed" up through increases in statutory marginal tax rates or eliminations of deductions to raise the revenues required for fiscal

consolidation. Altshuler, Lim and Williams (2010) examined the issue within the context of a series of incremental changes to the current income tax system aimed at reducing the deficit to an average of 3 percent of GDP over the years 2015 to 2019 (the last five years of the 2010-2019 budget window).[12]

Individual Income Tax Rates. Altshuler, Lim and Williams (hereafter ALW) use the TPC Tax Model to simulate several revenue-raising tax changes, including raising all income tax rates proportionately; raising tax rates only for high-income taxpayers; and limiting or eliminating itemized deductions to broaden the tax base. ALW consider the tax increases required under three revenue baselines: current law, under which the Bush tax cuts expire as scheduled at the end of 2010 and Congress stops "patching" the AMT, and two alternative baselines. Under the first alternative baseline, all the Bush tax cuts are extended, the AMT is patched at 2009 levels and indexed, the estate tax is maintained at 2009 parameters, and the budgetary effects of the 2010 healthcare reform act are taken into account. The second alternative baseline is what we have called the current policy baseline. It takes the first alternative baseline and adds the extension of other expiring tax provisions. The results reported below use data from the March 2010 CBO budget update, but the fiscal situation beyond 2012 has not fundamentally changed in the past year.

As stated above, no tax increases are necessary under the current law baseline to reach the 3 percent average deficit target for 2015-2020. Reaching the revenue target under the first alternative baseline requires an increase in revenues of about 5 percent of GDP per year. If the cost of extending other expiring tax provisions is included, an increase of almost 7 percent of GDP per year is required to reach the deficit target.

While the current law baseline raises substantial revenue it would subject almost one-third of taxpayers to the AMT by 2019 and remove some significant benefits for lower and middle income taxpayers.[13] This solution to putting the deficit on a sustainable path would have distributional effects that make it politically infeasible.

The tax increases required under the two alternative baselines, however, are also politically difficult. If the Bush tax cuts were extended further and the AMT were patched, all

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[12] There is a range of suggested targets for the budget surplus/deficit. The 3 percent of GDP target is sometimes put forth as consistent with stabilizing the debt to GDP ratio at current levels. ALW also estimate the tax increases necessary to reduce the deficit to 2 percent of GDP over the last five years of the budget window.

[13] See Lim and Rohaly (2009) for estimates of the number of taxpayers subject to the AMT under different baselines.

income tax rates would have to increase proportionally by 30 percent to reach the revenue target. The proportional increase in statutory rates would have to be 50 percent under the current policy baseline. This would increase the current 10 percent bottom statutory marginal rate to 15 percent and the top 35 percent rate to 51 percent. In effect, extension of the Bush tax cuts will force the administration and congress to turn elsewhere for additional tax revenue.

Protecting low and middle income taxpayers from these marginal tax increases would result in top rates that would stifle economic activity. If families with income under $250,000 were protected from the rate increase, the top two rates would need to rise from their current 33 and 35 percent rates to 66 and 70 percent if the Bush tax cuts were extended and the AMT patched (i.e., under the first alternative baseline) and to 84 and 89 percent if the other expiring tax provisions were extended (under current policy).[14] ALW's exercise clearly shows that simply increasing rates is not a realistic approach to reducing the deficit. Further, raising revenue solely from high-income individuals is not the answer to the revenue problem going forward.[15]

Corporate Income Tax. Increased revenues from the corporate tax could also be a target for deficit reduction. However, raising the statutory corporate tax rate will do little to buy down the deficit. In 2010, corporate revenues were nine percent of total revenues and one percent of GDP. Going forward, CBO forecasts corporate revenues as averaging ten percent of total revenues and two percent of GDP for the period 2012-2021. Moreover, any increase in the corporate income tax rate will affect domestic income and lower wages (through an outflow of capital) and adversely affect economic efficiency. And in the domestic context in particular, the corporate income tax essentially is optional for all nonpublic companies, because they can use legal forms of companies that provide limited liability but that are taxed at the individual level as pass-through entities. As a result, only about one-half of domestic net business income is subject to the corporate income tax (U.S. Treasury 2007).

Raising revenue from corporate tax increases is especially difficult in a global economy. The United States currently has the second highest statutory tax rate among OECD countries. The Japanese government is currently studying lowering the country's corporate tax rate as part

[14] ALW did not take behavioral effects into account. Tax rates would have to be even higher if changes in taxpayer behavior in response to the increased rates were factored into the analysis.

[15] A CBO option finds that raising the tax rate on ordinary taxable income in excess of $1 million for joint filers ($500,000 for other filers) by 5 percentage points would raise about 223 billion over the ten year period 2010-2019 (CBO 2009). That amounts to less than one-third of the revenue required to hit the 3 percent deficit target if the Bush tax cuts are extended and the AMT is patched and less than one-fifth of the revenue required if other expiring tax cuts are extended as well.

of tax system reforms planned for 2011. If Japan were to do so, the U.S. would have the highest rate. Any increase in the corporate tax rate can be expected to induce additional U.S. tax avoidance through transfer pricing and other methods of income-shifting. Clausing (2009) finds that every one percentage point differential between the U.S. and a particular foreign corporate tax rate is associated with a 0.5 percentage point increase in reported profits abroad. An effect of this magnitude implies that, in 2004, the corporate tax rate differential induced U.S. and foreign-owned multinational corporations to shift over $180 billion in profits—and over $60 billion in tax revenues—out of the United States.

This leakage in revenue due to income shifting, along with the small role played by the corporate tax in the U.S. revenue structure, suggests that corporate rate increases can only marginally, at best, put the deficit on a sustainable path. A more credible perspective would be that a broadening of the corporate tax base should be used to "pay down" the current law's high marginal corporate income tax rates. That in turn means that corporate tax reform is unlikely to be a significant net revenue raiser. Fiscal consolidation on the revenue side will require either more comprehensive personal income tax reforms or tapping new sources of revenues.

Tax Expenditure Reform. A distinguishing feature of U.S. public finance from a political economy perspective is the pervasive use of the tax system to deliver a wide range of social transfer payments, personal subsidies for various behaviors or conditions (e.g., buying a house or incurring large medical expenses), and business subsidies. These spending programs embedded into the structure of the income tax are termed "tax expenditures." In fiscal year 2011, tax expenditures will total more than $1 trillion, more than three-quarters of the revenues forecasted to be raised by the individual and corporate tax (Batchelder and Toder 2010). Roughly 90 percent of the revenue losses result from provisions of the personal income tax, and the remainder are associated with the corporate income tax.

Tax expenditures dramatically reduce the current tax law's base, affect the distribution of tax burdens in ways that often are underappreciated, introduce many economic costs, and even distort the legislative process.[16] Tax expenditures have grown significantly since the base broadening reform of 1986 (see, for example, Hungerford 2009).

[16] See Toder, Harris, and Lim (2009) for analysis of the distributional effects of tax expenditures and Kleinbard (2010b) for a discussion of how tax expenditures distort the legislative process.

Limiting tax expenditures is a necessary step for fiscal consolidation on the revenue side. Broadening the base through tax expenditure reform would not only raise revenue but would simplify the system, increase transparency, make it less distortive by both allowing for a lower rate and reducing tax-induced biases towards certain activity, and improve the fairness of the system. Options include simply capping expenditures and removing or carving back the benefits of selected expenditures. Because tax expenditures are subject to a completely different legislative pipeline and to different budget rules than are explicit spending programs, implementing these options will require major reform of the budget process. Unfortunately, then, U.S. tax reform will require not one but two enormous legislative undertakings: the substantive revision of the tax law itself, and the rewriting of budget framework rules to incorporate tax expenditures more fully into the process and to preserve the deals reached in the substantive tax reform process (Kleinbard, 2010a).

Table 6. Largest Income Tax Expenditures, 2012-2016
(dollar amounts in billions)

Provision	2012-16
Exclusion of employer contributions for health insurance	1,071
Mortgage interest deduction	609
Exclusion of employer and employee contributions to employer-provided pensions and retirement plans	602
Capital gains step-up at death	357
Exclusion of net imputed rental income	303
State and local tax deduction (property,income,etc.)	292
Accelerated depreciation	270
Preferred rates on capital gains	256
Charitable contribution deduction	249
Exclusion of interest on municipal bonds	230
Capital gains exclusion on home sales	219

Source: Office of Management and Budget, *Analytical Perspectives*, February 2011.

The biggest tax expenditures are the most popular ones, making it politically challenging to broaden the base in a significant way (see table 6). ALW consider the revenue consequences of two illustrative base broadening reforms: eliminating all itemized deductions and, alternatively, limiting the value of the itemized deductions to 15 percent. Neither reform comes close to raising the required revenue (3 percent of GDP for the years 2015-2019) under the two alternative baselines. The more comprehensive reform --- repealing all itemized deductions (which would include the home mortgage interest deduction, charitable giving deduction, and deduction for state and local taxes among others) --- raises only 37 percent of the required revenue under the current policy baseline. In terms of revenues, eliminating all itemized deductions raises an average of about $293 billion a year and limiting itemized deductions to 15 percent raises about $167 billion a year under the current policy revenue baseline.

The CBO Budget Options report (CBO, 2009) contains more specific suggestions for tax expenditure reform. Table 7 shows a set of options from the most recent report and the revenues raised under the current law baseline. Only options that raised at least one percent of the cumulative deficit between 2011 and 2019 are listed. The list is not exhaustive, but it does suggest that significant revenue increases will require carve backs and/or elimination of a large and popular set of tax expenditures.

Table 7. Select CBO Revenue Options for Tax Expenditures
(dollar amounts in billions)

	Revenues 2011-2019	% of cumulative deficit	% of average GDP
INDIVIDUAL EXPENDITURES			
Itemized deductions			
Mortgage interest deduction			
Convert mortgage interest deduction to 15% credit on mortgages below declining limit*	387.6	7.0	0.23
State and local taxes			
End current itemized deduction	850.2	15.3	0.51
Cap deduction at 2% of adjusted gross income	617.9	11.1	0.37
Limit tax benefit of itemized deductions to 15 percent	1,292.5	23.2	0.77
Carve back deduction for charitable giving			
(only contributions in excess of 2% of adjusted gross income and contributions cannot exceed 50% of adjusted gross income)	220.8	4.0	0.13
Exclusions			
Tax employer-paid premiums for income-replacement insurance provided by employers	217.7	3.9	0.13
Include investment income from life insurance and annuities in taxable income	253.3	4.6	0.15
Tax all income earned by U.S. citizens abroad	69.8	1.3	0.04
Tax Social Security like defined-benefit pensions	360.0	6.5	0.22
Credits			
Eliminate child tax credit	113.7	2.0	0.07
CORPORATE TAX EXPENDITURES			
Extend depreciation periods	264.4	4.8	0.16
Repeal deduction for domestic production activities	132.0	2.4	0.08
Repeal research and experimentation credit	65.6	1.2	0.04
Eliminate deferral of taxation of foreign earnings	62.5	1.1	0.04

Source: CBO (2010d).

*This option would gradually reduce the maximum mortgage on which interest can be deducted from $1.1 million to $500,000 (starting in 2013)

A. Adopting the Value-added Tax

The VAT is part of the tax systems of at least 140 countries worldwide including all OECD member countries. Adding a VAT to the U.S. federal tax system could help address the medium and long-term revenue shortfalls forecast for the United States. Proponents of the VAT claim that it is particularly effective in raising substantial amounts of revenue in a relatively efficient manner (Ebrill, Keen, Bodin, and Summers 2001). If the U.S. were to adopt a VAT, it could rely on the experience of other countries in setting up and administering the tax. In addition to these attributes, the VAT has a number of other advantages. First, a portion of the revenues from a VAT could be used to finance reductions in statutory income tax rates. Two tax systems (a VAT and an income tax) with low tax rates may be superior from an efficiency and administration perspective to an income tax system with higher rates. Second, while the VAT would increase the distortion in the work/leisure decision, it would impose an efficiency enhancing one-time tax on existing wealth. Adopting a VAT may also permit lower and more uniform rates on both labor and capital. Taken together, adding a VAT could improve the overall efficiency of the federal tax system. Third, the lower statutory income rates that the VAT could make possible for any revenue constraint would reduce pressure on the measurement concepts of our current income tax system and, in the case of the corporate income tax, reduce incentives for income shifting. Fourth, as Gale and Harris (2010) have pointed out, a pre-announced and phased in VAT might stimulate the economy by encouraging consumption in anticipation of the imposition of the tax. Finally, while the states are likely to protest, the VAT may actually help force the states to redesign or improve their retail sales tax (see Bird and Gendron 2010).

There are a number of issues that need to be addressed in designing a VAT. While a detailed discussion of the VAT is beyond the scope of this paper, there are three issues that deserve attention: the distributional impact of a VAT, the choice of a base and a rate, and the interaction of a federal VAT with the retail sales taxes in place in almost every U.S. state.

Distributional effects. A VAT is equivalent to a retail sales tax but is collected at different stages of the production process. Since higher-income households save more than those with lower or moderate incomes, the burden of the tax increases with current income reducing the overall progressivity of the tax system.[17] The additional VAT burden, however, can be relieved for low and middle income households through refundable credits. When Canada implemented

[17] When measured as a percent of life-cycle spending, the degree of regressivity of the VAT would be reduced.

its federal VAT in 1991, it added a refundable sales tax credit based on family size that phases out with income to relieve the burden on lower and middle income families. This approach to relieving the VAT burden is more effective than exempting food and other necessities from taxation (or applying preferential rates) since it can be targeted to lower and middle income households rather than all households.

It is important to note that the indexation of transfer payments also mitigates the burden of the VAT for low-income households. Any price-level adjustments associated with the introduction or change in the VAT (and any sales tax) will automatically trigger increases in transfer payments that offset the regressive impact of the tax.

Revenue effects. The broader is the base of any VAT imposed, the more efficient it will be at collecting revenue. The revenues collected, of course, depend on the base and the rate. One measure of the efficiency of a VAT that takes both parameters into account is the ratio of VAT revenue to the product of aggregate consumption and the standard VAT rate. This measure, the "C-efficiency" of a VAT, would be 100 percent if the VAT were levied uniformly on all consumption. Imposing zero or reduced rates and/or exempting final consumption from the VAT will lower its C-efficiency. This measure varies considerably over OECD countries from 30 percent in Mexico to almost 100 percent in New Zealand (the gold standard of VATs) in 2005. The average C-efficiency of all OECD country VATs was 53 percent in 2005 (OECD 2005).

Toder and Rosenberg (2010) develop a prototype broad VAT base for the U.S. that would cover about 80 percent of consumption.[18] They estimate that with a 5 percent rate, the VAT would raise $355 billion in 2012 which translates to a C-efficiency of 63 percent. Toder and Rosenberg follow government estimating conventions and assume that GDP remains fixed when tax policy is changed. If a consumption tax is imposed and nominal GDP and prices are fixed, factor incomes must fall. As a result, decreases in revenues from the individual income, corporate income, and payroll tax revenues will partially offset the revenue gains of the VAT. Toder and Rosenberg estimate a 27 percent decrease in revenues from these taxes bringing the revenue gain from the VAT down to $259 billion. A refundable tax credit for all households --- designed to generate the same revenue loss as exempting rent, new home purchases, food

[18] The broad base includes all domestic consumption, except for education, government-financed health care (Medicare and Medicaid), services of charitable organizations, and services performed by sub-national governments. State and local sales taxes and the imputed value of financial services are exempted from the base.

consumed at home, and private health expenditures from the VAT base --- brings the yield down to $161 billion or about 1 percent of GDP.

Interaction with the states. Coordinating states' retail sales taxes with the VAT would be a major challenge. States would likely view a VAT as an intrusion on their traditional sales tax base. If states were to bring their sales tax bases into conformity with the broad federal base and coordinate their sales tax collection systems with the federal regime, however, they could improve the efficiency of their sales taxes. Compliance burdens for multistate businesses and administrative costs for states could be reduced. And if the states moved to impose state level VATs, even greater gains in terms of simplicity and lower compliance burdens might be achieved.

The Canadian experience is particularly relevant to the U.S. case. Canada introduced a federal VAT, called the Goods and Services Tax (GST), in 1991 to replace a federal manufacturing sales tax that had many serious administrative deficiencies and undesirable economic effects (Bird and Gerson 2010). At the time, retail sales taxes similar to those found in the United States existed in all of Canada's provinces except Alberta.

Quebec followed the lead of the federal government and replaced its retail sales tax with a provincial VAT (called the Quebec Sales Tax or QST) when the VAT was introduced. Quebec administers both the QST and the GST. In 1997, after much negotiation, the three Atlantic provinces of New Brunswick, Nova Scotia, and Newfoundland and Labrador replaced their retail sales taxes with VATs. Unlike in the Quebec case, the three provinces decided to adopt the federal GST base and have the federal government collect both the federal and provincial VATs. Five provinces have kept their sales taxes.

While the Canadian system is a bit messy, it functions well and demonstrates that a federal VAT can exist side by side with different state sales taxes. Canadian tax scholars Richard Bird and Pierre-Pascal Gendron (2010) conclude that:

> "The Canadian experience shows that the existence or non-existence of subnational retail sales taxes is, in both technical and economic terms, a matter of indifference when considering a federal VAT. On the other hand, the existence of a federal VAT may be extremely important from the perspective of subnational governments that wish to improve their sales taxes." (page 2)

In our view, the Canadian experience shows that concerns about the states should not prevent the U.S. from adopting a VAT.

B. Taxing Greenhouse Gas Emissions

A policy that puts a price on greenhouse gas emissions could provide a significant revenue source for deficit reduction while addressing an important environmental externality. CBO included an option to impose a price on emissions of greenhouse gasses in its last Budget Options volume (CBO 2009). The option would create a regulatory program that would require establishments emitting large amounts of greenhouse gasses to pay a price to emit those gasses. The policy could be run as a tax on emissions (a carbon tax) or as part of a cap-and-trade system. The revenue associated with the policy examined would be substantial --- almost $90 billion per year.[19]

Both the Congress and the President have put forward cap-and-trade proposals. The problem with these approaches from a revenue standpoint (and it should be noted that the purpose of the proposals is not to raise revenues but to correct an externality) is that most of the revenue is either given away for free or used for purposes other than tax or deficit reduction.[20] The bill that passed the House of Representatives in 2009 would give away about 60 percent of the total allowances over the life of the program away for free. While the remaining 40 percent would be auctioned off, the bulk of the revenue raised would go to helping those who would suffer losses from the cap and trade program. For example, the revenue would be used to subsidize electric utilities, help trade-exposed industries and make transfers to low-income consumers. Neither of the two recent bills put forward in the Senate would allocate a substantial amount of the revenues generated to deficit reduction.[21]

The proposal put forward by the Administration in its 2010 budget would have used the 80 percent of the proceeds from auctioning allowances to permanently extend the Making Work Pay tax credit. The remaining 20 percent was to be devoted to clean energy technology. The

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[19] A simple carbon tax of $30 per ton would raise about $150 billion per year, but most proposals combine it with various subsidies to affected groups that reduce the net revenue (McKibbin and others, 2010).
[20] See Gayer and Morris (2010) for an excellent discussion of the revenue implications of climate policy.
[21] A bill introduced by Senators Kerry and Boxer gives 77 percent of the allowances away for free and devotes only 43 percent of the remaining 23 percent of revenues for deficit reduction. Senators Cantwell and Collins introduced a plan that takes a different approach. They would auction all of the allowances but then use three-quarters of the revenue to make transfers back to all Americans. None of the remaining 25 percent would be allocated to deficit reduction.

Administration's 2011 budget proposal called for a "deficit-neutral reserve" for climate revenues. A footnote to the budget table showing mandatory and receipt proposals states that the proceeds from emissions allowances will be used to "compensate vulnerable families, communities, and businesses during the transition to a clean energy economy." The footnote also indicates that receipts would also be reserved "for investments to reduce greenhouse gas emissions, including support of clean energy technologies, and in adapting to the impacts of climate change, both domestically and in developing countries."

Raising the tax on gasoline. While putting a price on greenhouse gas emissions is arguably the right policy approach, a more feasible policy may be to simply raise federal excise taxes on motor fuels. Revenues from these taxes are credited to the Highway Trust Fund to pay for highway maintenance and construction. Currently, the federal excise tax is 18.4 cents per gallon on gasoline and 24.4 cents per gallon on diesel fuel. Adding state and local taxes brings total average tax rates nationwide to 40.3 cents per gallon for gasoline and 46.6 cents per gallon for diesel fuel.

Raising the gas tax makes sense for a number of reasons. Gasoline emits pollutants including carbon dioxide that contribute to global warming. A higher gas tax would better reflect the social marginal costs of gasoline emissions and, as a result, would be efficiency enhancing. In addition, the higher tax may encourage more Americans to use public transportation and reduce another negative externality caused by overuse of gasoline --- road congestion. Higher gas taxes also provide incentives for industry to develop more fuel efficient cars and help stimulate the renewable energy industry. Finally, revenues from a gas tax could be used for deficit reduction. CBO estimates that every additional 50 cent tax per gallon of motor fuels will generate about $60 billion or 0.4 percent of GDP in annual revenues (CBO,2009).

C. A package of revenue raising reforms

Given the current fiscal outlook, many analysts suggest a combination of additional tax measures that raise revenue while improving economic performance (or damaging it as little as possible). For example, based on the prior discussion, a program might include the following:

1. *Broaden the individual and corporate income tax bases.*[22] While this paper is not the place to lay out a detailed base broadening reform, we suggest that reducing the value of itemized deductions to 15 percent (while repealing the state and local tax deduction altogether and gradually limiting maximum mortgage on which interest can be deducted) and eliminating and/or carving back other expenditures in the individual and corporate income tax system could raise close to 2 percent of GDP. A base broadening reform may also provide an opportunity to simplify the tax code.[23]

2. *Add a VAT to the current system.* Adding a new tax to the system is a radical reform. However, the current system cannot simply be scaled up to generate the revenues required going forward. Base broadening reform is essential but is not likely to yield sufficient revenues for any serious fiscal consolidation program. The estimates from Toder and Rosenberg (2010), suggest that a 5 percent VAT on a broad base could raise revenues equal to about $355 billion, or 2.2 percent of GDP. Toder and Rosenberg make the VAT roughly proportional throughout the income distribution (except at the very top) by providing per-capita refundable credits to all individuals. Adding the rebate decreases the net tax revenue from the VAT to about 1.6 percent of GDP. The refundable credits do not have to be universal, however. As was done in Canada, a refundable income tax credit that phases out with income could be designed to mitigate the burden of the VAT on lower and middle income families.

3. *Raise gas taxes.* An increase in gas taxes of 50 cents could raise revenues equal to 0.4 percent of GDP. We recognize that a gas tax is a second-best approach for dealing with the externalities created by greenhouse gas emission. However, the first- best approaches (cap-and-trade or a carbon tax) will take some time to implement. Further, the plans put forward in congress and by the administration have not promised to do much (if anything) for deficit reduction.

8. Conclusion

The United States faces a long drawn-out period of recovery from the 2008-09 financial crisis. Unemployment is likely to remain in the range of 8-9 percent of the labor force for several more years. Yet to a large extent the monetary and fiscal policy options for accelerating recovery have been exhausted, and future growth is very dependent on the pace of expansion in the export sectors as part of a major rebalancing of the economy and elimination of the external trade deficit. The weakness of the recovery raises difficult questions about the timing of actions to reduce the budget deficit, but our projections suggest

[22] For a recent example of a base broadening reform of the current system see The Bipartisan Tax Fairness and Simplification Act of 2010 (2010) introduced by senators Wyden and Gregg. See Nunns and Rohaly (2010) for a revenue and distributional analysis of the Wyden-Gregg plan.

[23] For tax simplification recommendations see, in particular, the recent report of the President's Economic Recovery Advisory Board (PERAB 2010) and the report of the 2005 Panel on Tax Reform (President's Advisory Panel on Federal Tax Reform 2005).

that the current policy cannot be sustained for long. A continuation of current budget policies translates into an uninterrupted and rapid growth in the public debt as a share of GDP.

The review of the budget and the policy options for future years, however, suggests that actions to bring the federal budget back into balance will require large structural changes in both expenditures and revenues. The government begins with a budget deficit in excess of ten percent of GDP and its future growth is driven by rising health care costs and the interest payments on an ever-increasing public debt. We conclude that balance cannot be achieved with any probable scaling back of expenditure programs or a simple ramping up of the existing tax structure. The United States will need to consider a broader range of new revenue sources. We have examined three major options: broadening the existing income tax base by reducing many of the existing exclusions, a value-added tax paralleling that of other countries, and taxation of greenhouse gas emissions. We conclude that the United States might be best served by a combination of all three.

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