1. Introduction

Since the September 11, 2001 terrorist attacks, the U.S. national debt has grown at unprecedented rates, with deficits and debt reaching levels that are increasingly difficult to sustain.

Whereas leaders on both sides of the political aisle once seemed to take the position that “deficits don’t matter,” skyrocketing obligations have proven the opposite to be true (Council of Economic Advisors 2016, Congressional Budget Office 2016a, 2016b, Office of Management and Budget 2016). Financing the projected debt levels at historic interest rate norms will force major spending cuts or much higher taxes in the very near future. The United States is certainly not alone in facing fiscal struggles, but its inability to right the ship does stand somewhat alone among its counterparts.

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Several studies reveal higher levels of taxes and spending as a share of GDP have a negative impact on economic growth. For a survey of this literature see Bergh and Henrekson (2011). There is controversy regarding the relationship between debt and economic growth; for a survey of that literature see Merrifield and Poulson, 2016.

Since 2001, several Organization for Economic Co-operation and Development (OECD) countries have pursued policies to reduce fiscal deficits and government debt (OECD 2014). Some of the new fiscal rules are focused on transparency and accountability, but several countries and the European Union (EU) enacted rules directly limiting deficits and debt. Those rules became key factors in the nations’ ability to cut deficits and debt significantly.

The EU set medium-term budget objectives at or close to the structural balance or surplus. A deficit threshold of 3 percent of Gross Domestic Product (GDP) was set, above which the EU could mandate fiscal reform designed to achieve structural balance. The EU also set a threshold of debt at 60 percent of GDP, above which fiscal reform would also be mandated. In this study we adopt these “tolerance levels” for deficits and debt for the U.S., recognizing the controversy regarding these targets. Following the adoption of the 1997 Stability and Growth Pact (SGP), most member countries of the EU also designed their own fiscal rules to impose fiscal discipline. These fiscal rules were adopted due to a growing consensus that unconstrained growth in taxation and spending had a negative impact on economic growth.²

These fiscal rules were adopted due to a growing consensus that unconstrained growth in taxation and spending had a negative impact on economic growth.

Since the limits required structural balance, periods of recession and revenue shortfalls were offset by expansionary period surpluses. Those fiscal rules usually provided for extraordinary or emergency expenditures within the long-term budget constraint. The new rules also addressed long-term structural deficits expected to arise from the rising cost of pension and retiree health plans. The most stringent new rules attacked debt by requiring use of surplus revenue during growth periods of the business cycle to pay down debt. The objective was to reduce the debt-to-GDP ratio in the medium term in order to address rising pension and health plan costs effectively over the long term.

Our review of fiscal rules in OECD countries suggests the Swiss “debt brake” is the most successful approach. The debt brake has enabled Switzerland to reduce deficits and achieve a sustainable long-term fiscal policy. The Swiss debt brake imposes a spending limit that is cyclically adjusted based on the relationship between trend and actual GDP. When trend GDP exceeds actual GDP, the adjustment factor increases the spending cap, and when trend GDP is less than actual GDP, the adjustment factor decreases the spending cap. In the long run, the spending cap will tend to follow the growth rate of trend output. This expenditure cap is similar to state tax and expenditure limits in the United States that are tied to personal income growth.³

² Several studies reveal higher levels of taxes and spending as a share of GDP have a negative impact on economic growth. For a survey of this literature see Bergh and Henrekson (2011). There is controversy regarding the relationship between debt and economic growth; for a survey of that literature see Merrifield and Poulson, 2016.

³ For a more detailed discussion of the Swiss debt brake see Merrifield and Poulson, 2016.
In this study, we propose a new fiscal rule for the United States that is a refinement of the Swiss debt brake. The proposed rule, a deficit/debt brake, would impose a more stringent limit on government expenditures in the United States than the debt brake does for Switzerland.

In the following discussion, we provide the rationale for this approach to fiscal rules in the United States. We use a dynamic scoring simulation model to assess the impact of the proposed rule on U.S. fiscal policy and economy. We compare the key simulated fiscal and economic outcomes with this proposed fiscal rule to actual outcomes in the United States and to the Swiss debt brake.

After we discuss the rationale for the proposed fiscal rule, we describe our data and simulation model and then our findings. The study concludes with a discussion of changes in the budget process that would be required to enact the proposed fiscal rule, while acknowledging the political impediments to passage of such a rule.

2. Rationale for Proposed Fiscal Rules

The United States has emerged as a major debtor nation in need of policies imposing stringent spending constraints (Merrifield and Poulson 2016). Policymakers must also be given some flexibility in adjusting these limits based on the degree of fiscal stress encountered in the short run. Without this flexibility, the rules could exacerbate fiscal stress in the short run and invite abandonment of the rules in the long run.

The fiscal rules we have designed achieve both objectives by combining a spending cap with a deficit/debt brake. The spending cap is designed to constrain spending growth to reduce deficits and debt in the long run, and the deficit/debt brake provides the fiscal discipline and flexibility policymakers require in order to address short-term fiscal stress experienced over the business cycle. A sustainable long-term fiscal policy requires a spending cap consistent with a deficit/debt brake. The following sections define these two elements.

**Spending Cap**

A sustainable fiscal policy requires a spending cap to (1) reduce the debt/GDP ratio below the 60 percent tolerance level (defined above and (2) maintain that ratio below the tolerance level in the long run. The spending cap should be linked to the long-term demand for government services.

The two best approximations of the general demand for government services are personal income growth and population growth plus inflation. From our analysis of state fiscal policy stress, we have determined personal income growth is too volatile a basis for capping spending growth (Merrifield and Poulson 2014). Therefore, we recommend here a spending cap linked to population growth plus inflation.
We apply a spending multiplier to the sum of population growth plus inflation to adjust the spending cap consistent with the demand for government services in the long run:

\[ \text{SPCAP} = M(\text{pop} + \text{infl}) \]

Where

- \( SPCAP \) is the spending cap
- \( \text{pop} \) is population growth
- \( \text{infl} \) is inflation rate

\( M(1.0, 1.25, 1.5) \) is the spending cap multiplier

A spending cap multiplier of 1.0 will grow government spending at the rate of population growth plus inflation. This is a stringent spending cap because it will grow government spending at less than the rate of long-term personal income growth. A spending cap multiplier greater than 1.0 imposes a less stringent constraint on government spending. The multiplier can be adjusted to achieve the desired target debt-to-GDP level and also to reflect the growth in demand for government services in the long run.

The spending cap should be set to reflect the fiscal requirements facing a country in the long run. Major debtor countries such as the United States face several decades of spending and borrowing constraint to bring debt below the 60 percent of GDP tolerance level. For this reason, the United States should impose a stringent cap on spending growth with a spending multiplier at or close to 1.0 in the near term. When the debt-to-GDP ratio has been reduced below the tolerance level, the spending cap multiplier can be increased to a higher level consistent with more rapid growth in government spending in the long run.

A major problem confronting the United States and other OECD countries is the fiscal demands imposed by retiree pension and health benefits. Demographic projections reveal an aging population and a rising share of the population eligible for these benefits. Over time, a rising share of the federal budget must be allocated to retiree benefits. Congressional Budget Office (CBO) long-term forecasts for the United States suggest, under current law, federal expenditures for Social Security and Medicare benefits will crowd out many other federal programs (Congressional Budget Office 2016a).

Debt in the United States is currently 102 percent of GDP, well above the tolerance level, and the CBO forecast is for that ratio to continue to increase in the long run. Increasing costs of

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4 The measure of debt used in this study is gross debt, because that is the measure used by the OECD in comparing debt levels for member nations. An alternative measure is debt held by the public.
Social Security and Medicare are a major cause for this rising debt/GDP ratio; without reform, it will likely be difficult, if not impossible, for the United States to bring the debt/GDP ratio below the tolerance level in the long run (Congressional Budget Office 2016a).

It will be important to adjust the spending cap to reflect the fiscal demands imposed by expenditures for these entitlement programs over time. The experience of other OECD countries can serve as a guide for the United States (Merrifield and Poulson 2016). The Swedes, for example, imposed a stringent cap on spending growth in the near term in order to address the fiscal demands of an aging population over time. They have achieved a debt/GDP ratio well below the tolerance level. The Swedes anticipate the fiscal demands imposed by their aging population will require a higher rate of growth in government spending and higher debt/GDP ratios over time. However, by imposing a stringent spending cap in the near term, they project they can keep the debt/GDP ratio below the tolerance level. If the United States follows the Swedish precedent, we should set the spending cap multiplier at or close to unity in the near term, then increase it in the long run as the aging population imposes greater demand for retiree benefits.

**Debt and Deficit Brakes**

Total U.S. federal government debt during the first term of the Obama administration increased from $10 trillion to $16 trillion, boosting the debt from 68 percent to 100 percent of GDP. Since President Barack Obama took office in January 2009, annual deficits have consistently been above the 3 percent tolerance level, reaching more than 13 percent of GDP in 2009. This response to the fiscal stress of the Great Recession has created fiscal instability that threatens the sustainability of long-term fiscal policy (Congressional Budget Office 2016a).

The fiscal instability associated with deficit spending and debt accumulation during the Great Recession is readily observed in European countries. In Greece, deficits of this magnitude resulted in default on the nation’s debt. Despite fiscal reforms and debt rescheduling, Greece has yet to overcome the fiscal instability of the deficits incurred during its Great Recession (Merrifield and Poulson 2016).

In a less dramatic fashion, both Switzerland and Sweden incurred deficits and accumulated high levels of debt during business cycles in the 1980s and early 1990s. That fiscal instability led both countries to adopt fiscal rules targeting the deficit/GDP and debt/GDP ratio.

The deficit/debt brake we have designed is a refinement of the fiscal rules enacted in Switzerland and Sweden. As the government incurs deficits and/or accumulates debt at or close to the tolerance levels, it triggers “brakes,” or limits on spending growth.
The deficit/debt brake we have designed is a refinement of the fiscal rules enacted in Switzerland and Sweden. As the government incurs deficits and/or accumulates debt at or close to the tolerance levels, it triggers “brakes,” or limits on spending growth.\(^5\)

**Debt Brake**

Our formula sets the tolerance level for the debt at 60 percent of GDP. As the debt/GDP ratio approaches this tolerance level, the debt brake imposes limits on the growth in spending. We introduce a debt multiplier to give policymakers flexibility in applying the debt brake depending on the fiscal stress experienced during the business cycle:

$$DEBTBRAKE = M*(\frac{\text{debt/GDP}}{\text{DebtTOL}} \times (\text{debt/GDP}) - \text{DebtTOL})$$

Where

* \(DEBTBRAKE\) is the debt brake
* Debt/GDP is the actual debt-to-GDP ratio
* DebtTOL is the debt-to-GDP tolerance level set at 60 percent of GDP
* \(M*(1, 2, 3)\) is the debt multiplier

With a debt multiplier set at 1, the debt brake is applied stringently. The option of increasing the debt multiplier gives policymakers the flexibility to impose the debt brake less stringently in times of fiscal stress.

**Deficit Brake**

The tolerance level for deficits is set at 3 percent of GDP. As the deficit/GDP ratio approaches that tolerance level, the deficit brake imposes a limit on spending. We introduce a deficit multiplier to give policymakers flexibility in applying the deficit brake depending on the fiscal stress experienced during the business cycle.

$$DEFBRAKE = M** ((\text{Deficit/GDP})/(\text{DeficitTOL}) \times (\text{Deficit/GDP}) - (\text{DeficitTOL}))$$

Where

* \(DEFBRAKE\) is the deficit brake

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\(^5\) We should emphasize that the spending cap multiplier is not left to the discretion of the legislature, but rather it is constrained by the requirements to achieve a debt/GDP ratio below the tolerance level. For more discussion of these tolerance levels, see Merrifield and Poulson, *ibid.*, pp. 2–7.
*Deficit/GDP* is the actual deficit/GDP ratio

*DeficitTOL* is the deficit/GDP tolerance level set at 3 percent of GDP

*M**(1, 2, 3,4.5)* is the deficit multiplier

With a deficit multiplier set at 1, the deficit brake is applied stringently. By increasing the deficit multiplier, policymakers can impose the Deficit Brake less stringently in periods of fiscal stress.

**Spending Cap and Debt and Deficit Brakes**

The deficit/debt brake combines the limits imposed by the deficit brake and the debt brake:

$$\text{DEF/DEBTBRAKE} = \text{DEFBRAKE} + \text{DEBTBRAKE}$$

When either the deficit/GDP ratio or the debt/GDP ratio exceeds its tolerance levels, the spending cap is adjusted to reflect the limits imposed on spending:

$$\text{SPCAP} = (\text{M(pop + infl)} \times (1- \text{DEF})/\text{DEBTBRAKE}))$$

or 0, whichever is greater.


The following calculations illustrate the results had the spending cap and deficit/debt brakes been applied in 1994 in the United States.

In 1993, actual debt was 65 percent of GDP, above the 60 percent tolerance level. In that year, the actual deficit was 5 percent of GDP, also above the deficit/GDP tolerance level. Not only had the nation accumulated debt, requiring belt-tightening, it was incurring deficits and accumulating more debt at an unsustainable rate. Since this was a year of economic recovery, our rules would have imposed a stringent cap on spending, reflecting both the deficit brake and the debt brake, as follows:

- Pop + infl = 0.042 population growth plus inflation
- Debt/GDP = .65 actual debt/GDP ratio
- Def/GDP = .05 actual deficit/GDP ratio
- M = 1.25 spending multiplier
- M* = 1 debt multiplier
\[ M^* = 3 \text{ deficit multiplier} \]

\[ \text{DEBTBRAKE} = 1.0 \left( \frac{0.65}{0.6} \times (0.65 - 0.6) \right) = 0.054 \]

\[ \text{DEFBRAKE} = 3.0 \left( \frac{0.05}{0.03} \times (0.05 - 0.03) \right) = 0.1 \]

\[ \text{DEF/DBTBRAKE} = \text{DEBTBRAKE} + \text{DEFBRAKE} = 0.054 + 0.1 = 0.154 \]

\[ \text{SPCAP} = \left( 1.25 \times 0.042 \right) \times (1 - 0.1542) = 0.044 \quad \text{(a 4.4 percent spending growth cap)} \]

A spending multiplier greater than unity (1.25 versus 1.0) allowed for spending growth somewhat higher than the sum of population growth plus inflation (4.4% versus 4.2%). However, because the government was incurring deficits and accumulating debt at an unsustainable rate, the deficit/debt brake reduced the spending growth permitted by the spending cap.

In this example illustrating how the spending cap is estimated, we chose a year early in the sample period when the actual debt/GDP ratio was only slightly above the debt/GDP tolerance level of 60 percent. In recent years, the actual debt/GDP ratio has been in excess of 100 percent, well above the debt/GDP tolerance level. With this level of debt, it will take many years to bring the debt/GDP ratio below the debt/GDP ratio tolerance level. The spending cap required for this magnitude of course correction must be more stringent than that estimated for 1994.

4. **Applying Spending Caps**

Imposing the proposed fiscal rule will be a formidable challenge, requiring a significantly lower trajectory of spending than is projected under current law. Implementing the fiscal rule will require careful consideration of how the spending cap is imposed on different components of the national budget.

**Imposing the proposed fiscal rule will be a formidable challenge, requiring a significantly lower trajectory of spending than is projected under current law.**

Historically, fiscal rules in the United States, such as the Gramm Rudman Hollings Act of 1985, were applied to discretionary spending. Mandatory spending was excluded. The Budget Enforcement Act of 1990 amended the Gramm Rudman Hollings Act and likewise attempted to cut deficits by imposing spending caps on discretionary spending only. Increases in discretionary spending or tax cuts had to be offset by reductions elsewhere in the budget, a rule referred to as PAYGO. Any violation of PAYGO would trigger sequestration and other actions to constrain spending.

The Budget Control Act of 2011 (BCA) imposed new caps on discretionary spending enforced by sequestration. When a bipartisan committee of legislators (the so-called “Super Committee”) failed to agree on deficit reduction legislation, BCA mandated automatic spending cuts totaling
$1.2 trillion from 2011 to 2021, extended to 2023 by the Bipartisan Budget Act of 2013. For each year in which appropriations surpass BCA limits, sequestration is triggered again. These rules are statutory, so it has been relatively easy for Congress to circumvent the spending caps and suspend politically unpopular sequestration requirements.

The historical precedent of Congress in applying spending caps is not an optimum approach. When spending caps are imposed only on discretionary spending, it excludes a large and growing share of the federal budget. Mandatory spending comprises roughly two-thirds of total spending, and this component is projected to grow more rapidly than discretionary spending. The current fiscal rules impose disproportionate reductions in some components of spending while excluding others.

For example, defense expenditures constitute roughly half of the discretionary spending, so when spending caps are imposed across the board on discretionary spending only, defense spending is constrained more than other federal programs. Even when sequestration is triggered, requiring across-the-board reductions in spending, some mandatory expenditures are excluded from the cuts.

An alternative approach would be to apply the spending caps to total spending, including mandatory and discretionary spending alike. This approach ensures spending caps achieve the fiscal discipline required for a sustainable fiscal policy. This approach, however, would require major reductions in entitlement spending and could fatally undermine political support for the fiscal rule.

In this study we take a different approach in applying the proposed spending cap. Discretionary spending would be subject to the spending cap. Mandatory spending other than Social Security and Medicare also would be subject to the limits imposed by the spending cap. Social Security and Medicare would be separated from other mandatory spending and subjected to different rules.

There are several reasons for this approach in applying the spending cap. Social Security and Medicare and the trust funds established for these programs are subject to their own statutory rules. Applying the spending cap to these entitlement programs would require a fundamental change in those rules that would ultimately make achieving important changes nearly impossible in the current political context. Capping and controlling discretionary spending reliably in the short term must be a separate goal while pursuing meaningful entitlement reform.

Our proposed fiscal rules are designed to provide for relatively stable growth in federal spending. Applying the spending cap requires adjustments in spending each year, reflecting the fiscal stress experienced over the business cycle. Spending for most federal programs can be adjusted in this way without causing major disruptions in those programs. Other mandatory expenditures, such as Medicaid, are also subject to their own statutory rules, but frequent changes in expenditures for these programs can be and have been made. Capping expenditures
for these other mandatory programs can be achieved more easily than for Social Security and Medicare.

There is also a more fundamental reason for distinguishing Social Security and Medicare from other federal programs. Expenditures for Social Security and Medicare have been growing more rapidly than total federal expenditures. The Congressional Budget Office projects these entitlement programs will continue to grow more rapidly and absorb a growing share of the federal budget in coming decades (Congressional Budget Office 2016a). There is a broad consensus that the level of benefits projected under current law is inconsistent with a sustainable fiscal policy. If unfunded liabilities in these entitlement programs continue to grow at current rates, there is a high probability that at some point the government will not be able to meet these obligations.

The fundamental reforms required to put these entitlement programs on a sustainable track involve issues of intergenerational wealth distribution, and these are best addressed through legislation focused directly on entitlement reform, not on the overall budget. Attempting to constrain spending for these entitlement programs simply by imposing a spending cap is not politically plausible. Therefore, we propose beginning by applying the spending cap to all federal spending except Social Security, Medicare, and interest on the public debt, limiting the cap to those items a spending cap can most effectively address.

5. Need for an Emergency Fund

A fatal flaw in current federal fiscal rules is that in periods of fiscal stress, the government suspends or circumvents the rules to fund supplemental appropriations made on an emergency basis. For example, the spending caps imposed by the Budget Enforcement Act of 1990 have been waived for disaster relief, military spending, overseas contingency spending, and program initiatives. Exempting such expenditures for emergencies tends to undermine the effectiveness of a fiscal rule. This also brings up the question what is an emergency expenditure; the broader the definition of an emergency, the less effective the discretionary spending caps.

Unless these funds are specifically and separately provided for, any supplemental appropriations in response to fiscal stress would make it very difficult to enact the spending cap on a long-term basis. Therefore, we propose annual deposits into an emergency fund to finance un-budgeted supplemental appropriations, subject to supermajority approval in both houses of Congress.

With a spending cap based on population growth plus inflation, the federal government could achieve a cyclically balanced budget. Surplus revenue in periods of economic expansion would offset deficits incurred in economic contractions. In years when surplus revenue is generated in
excess of the spending cap, funds are deposited in an emergency fund up to an emergency fund cap. In some years, funding for the emergency fund may also be accompanied by deficits and increased debt.

The precedent for this approach to the emergency fund is the “extraordinary budget” provisions of the Swiss debt brake. The extraordinary budget is designed to cover unforeseen developments that are beyond the control of the federal government, such as severe recessions, natural disasters, and, presumably, military emergencies. Extraordinary expenditures not covered by extraordinary receipts must be compensated for in the ordinary budget over the medium term. An amortization account is used to control these extraordinary expenditures and receipts. If the account has a deficit, this must be paid off over the course of the next six accounting years by means of surpluses in the ordinary budget. In special situations, Parliament has the power to extend the six year deadline.6

Following the Swiss example, we propose that expenditures from the emergency fund could be spent only on remediation of military emergencies, natural disasters, and financial crises. These emergency expenditures have been a major source of instability in the federal budget over the past decade. By allocating surplus revenue to an emergency fund, the federal government could meet these expenditure needs while maintaining stable growth in funding for ongoing programs.

A broad consensus supports emergency expenditures for disaster relief. Disaster relief spending over the past decade could be used to provide a benchmark for the amount required to meet these needs.

A broad consensus also supports expenditures for military emergencies. Defense expenditures over the past century suggest an important distinction between military spending during World War II and expenditures for military conflicts since then. Emergency spending for military conflicts of the magnitude of World War II would certainly require deficit spending and debt beyond the limits imposed by the cap on emergency fund. One way to distinguish such military emergencies is to suspend the cap on the emergency fund and allow unlimited borrowing while a formal declaration of war is in place. All military emergency spending for which there is no declaration of war would be subject to the cap on the emergency fund.

This fiscal rule could force Congress and the president to constrain expenditures on military emergencies such as the wars in Iraq and Afghanistan. Our analysis provides for allocation of surplus revenue to the emergency fund sufficient to cover expenditures for military emergencies, natural disasters, and financial crises experienced over the sample period. The distinction is between the limited spending authority granted to the president under the War Powers Act, versus the spending authority that would be granted with a declaration of war. If that distinction is retained, the proposed fiscal rules could provide sufficient funding to meet military emergencies and allow for suspension of the fiscal rules in periods of declared war.

6. Need for a Capital Investment Fund

One of the most important components of discretionary spending is investment spending. Some countries exempt government investment spending from the expenditure caps and also allow borrowing to finance this investment spending, the so called “golden rule.” The rationale is that government investment spending contributes to economic growth and making this investment spending subject to the expenditure cap would result in underinvestment. If interest groups support more noninvestment spending, lower-priority programs could crowd out government investment spending.

The problem with exempting government investment spending from the spending cap is that there is no agreement on what constitutes investment spending. Some argue expenditures for education, health care, and other programs should be considered to be government investments. Of course, the more discretionary spending exempt from the spending cap, the less effective it is in constraining spending.

We propose a version of the “golden rule” that would retain the integrity of the fiscal rule (Merrifield and Poulson 2016). Surplus revenue above the spending cap would be deposited into a capital investment fund equal to 1 percent of expenditures each year, up to a capital investment fund cap. Surplus revenue in excess of that allocated to the emergency fund and the capital investment fund is used to pay down the debt. In some years, funding the capital investment fund may require deficits and increased debt.\(^7\)

The rationale for allowing this borrowing for capital investment spending is the positive impact these expenditures can have on economic growth. Monies in the capital investment fund could be used only to finance infrastructure investment in highways, bridges, and urban transit. There is widespread agreement on a critical need for such infrastructure investments in the United States, and earmarking a portion of surplus revenue for a capital investment fund would ensure funds would be available to finance these investments.

We propose expenditures from the capital investment fund be countercyclical. In years of recession and revenue shortfall, expenditures from that fund would ensure more stable investment spending over the business cycle. The argument for this countercyclical investment expenditure is not the Keynesian rationale for investment spending to stimulate aggregate demand during a recession. Instead, the economics literature suggests countercyclical investment spending will improve efficiency and economic growth. In periods of recession, there is likely to be slack and underutilized capacity in the construction industry. Increased expenditures for construction will benefit from the bargains available in that industry, resulting in better-quality construction at a lower cost.

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\(^7\) Like the emergency fund, the Capital Investment Fund would also have an amortization account.
**Budget Stabilization and Economic Growth**

A major objective of the proposed fiscal rule is to promote long-term economic growth. Higher economic growth results from several provisions in the proposed rules. Constraining federal expenditures ensures a smaller share of resources is transferred from the private to the public sector. The capital investment fund will restore investment expenditures to a high priority in the federal budget to promote economic growth. To the extent that surplus revenue is offset by tax cuts or rebates, this reduction in the tax burden will also stimulate economic growth.

Higher economic growth will facilitate the attainment of each of the objectives in imposing new fiscal rules. A higher rate of growth in GDP will more quickly achieve a tolerable ratio of debt to GDP. With federal spending growth limited to population growth plus inflation, a higher rate of income growth will more rapidly decrease federal spending as a share of income. As income increases at a faster rate, this trend will generate even more rapid growth in revenue and increase the surplus revenue above the spending limit. That will allow more revenue to be allocated to the emergency fund and the capital investment fund. The nation will be better prepared for military emergencies, natural disasters, and financial crises. The nation will also be better able to fund the backlog of infrastructure investment projects.

**7. Dynamic Simulation Analysis**

In this study, we simulate the deficit/debt brake and compare this with simulations for the Swiss debt brake. We assess these two rules-based approaches by simulating their effects over the federal fiscal years FY 1994–2013. That is, we ask what would be the end-year (2013) federal fiscal circumstances of the United States had the rules been adopted in FY 1993, and what would have been the transitional effects of getting there. The diversity of that period – 1994–2013 included two economic expansion periods, a major terrorist attack, three major overseas military operations, several major natural disasters, and two economic contractions, including the Great Recession – would surely provide a stern test of any proposal for addressing the current fiscal crisis.

The simulations capture the effects of three key sources of federal fiscal expansion pressures: the fiscal stress created by the business cycle; increased pension and health care costs for retirees; and the frequent recurrence of large amounts of un-budgeted spending – supplemental appropriations made on an emergency basis. Unless provided for separately from regular saving for an emergency fund, such supplemental appropriation pressures would make it very difficult to craft and sustain a cap on general fund spending growth. To overcome that problem, the

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8 For a more detailed discussion of the dynamic simulation analysis, see Merrifield and Poulson 2016.
simulations provide for annual deposits into an emergency fund to finance un-budgeted, supplemental appropriations.

Our simulations discern the annual savings rate needed to finance the significant emergency spending of 1994–2013. Also, to support the federal government’s responsibility to make infrastructure investments and respond to economic stabilization pressures, the simulations include increased spending during economic recessions. We provide a social safety net and increase the yield of construction spending. The simulations include dynamic scoring to capture the effect of lower tax rates on economic growth and the fact that reduced tax collections (which can occur without rate changes) and reduced spending leave more resources in the more productive private sector of the economy, which generates more economic activity to tax.

Data and Parameters

We collected annual data for GDP and personal income; spending on and revenue for Social Security and Medicare Part A; general fund revenue and spending, with and without interest payments; and year-end national debt levels. We also collected income tax revenue data, corporate and personal, and estimated emergency spending data. We took note of the differences between the official general fund deficit/surplus data and the same period’s typically much larger change in the national debt. Since that difference between change in national debt and official deficit/surplus reflects un-budgeted spending and revenues, we used that difference as one of our estimates of emergency spending.9

We also collected population data from the Census Bureau, price index (inflation) data from the Bureau of Labor Statistics, and income elasticity of federal revenue estimates from the National Bureau of Economic Research. From those data, we calculated useful parameters such as each year’s average interest rate for interest paid on the national debt, and marginal tax rates and revenue shares for major taxes.

Simulation Results

We used a dynamic simulation model to analyze the impact the proposed fiscal rules would have had over the period 1993 to 2013. A technical appendix (available upon request from the authors) contains all of our equations and our detailed simulation results. We present the highlights in this study. We use figures to compare actual fiscal outcomes with the fiscal

9 This measure of emergency expenditures is adjusted for the repayment of TARP loans that were extended during the financial crisis.
outcomes that would have occurred with two fiscal rules in place: our proposed deficit/debt brake and the Swiss debt brake.

Debt-to-GDP Ratio

The United States has emerged as a major debtor nation, so successful fiscal reform requires reducing debt to below the 60 percent of GDP tolerance level. Figure 1 compares the actual debt/GDP ratio with the simulated ratio for the deficit/debt brake and the Swiss debt brake.

Actual debt increased above the 60 percent of GDP tolerance level by the beginning of the sample period. Actual debt shows a discontinuous increase during the Great Recession and a continued increase to levels in excess of 100 percent of GDP since then.

Figure 1
Actual U.S. debt/GDP ratio and simulated ratios under the deficit/debt brake and the Swiss debt brake, 1994–2013
Simulations of a Swiss debt brake show this rule would have stabilized the debt/GDP ratio above the tolerance level. That rule would have eliminated the sharp increase in the actual debt/GDP ratio that occurred during the Great Recession, but the simulated debt/GDP ratio remains above the tolerance level throughout the sample period. The Swiss debt brake would not have achieved a sustainable fiscal policy.

The deficit/debt brake is a more stringent fiscal rule than the Swiss debt brake. With this rule in place, the simulated debt/GDP ratio begins to fall in the 1990s, increases slightly during the Great Recession, and is relatively stable thereafter. In contrast to the Swiss debt brake, the deficit/debt brake reduces the simulated debt/GDP ratio well below the tolerance level. This more stringent fiscal rule appears to be a necessary condition for a sustainable fiscal policy over the long run. The explanation for this greater stringency is that the spending cap is linked to population growth plus inflation, instead of to personal income growth.

**The Deficit/GDP Ratio**

The deficit/GDP ratio is another measure of fiscal stringency in the application of these fiscal rules. A deficit in excess of the 3 percent of GDP tolerance level indicates fiscal policies are accumulating debt at an unsustainable rate in the long run. Changes in the deficit/GDP ratio also capture the impact of fiscal policies over the business cycle.

Actual deficits fell below the tolerance level in the 1990s and moved to a surplus in 2000. (See Figure 2.) The actual ratio then moved above the tolerance level during the recession years 2001 and 2002. In those years, the actual ratio reflected a countercyclical fiscal policy, due primarily to the automatic stabilizers. The automatic stabilizers include non-discretionary changes in tax revenue that occur in response to changes in income. They also include changes in federal expenditures, such as unemployment compensation, that occur in response to cyclical changes in income.

Over the past decade, actual deficits have been well above the tolerance level, reaching a peak of 13 percent during the Great Recession. This reflects a discretionary fiscal policy designed to stimulate aggregate demand. Unfortunately, these fiscal policies have generated debt accumulation at an unsustainable rate.

Over the past decade, actual deficits have been well above the tolerance level, reaching a peak of 13 percent of GDP during the Great Recession. This reflects a discretionary fiscal policy designed to stimulate aggregate demand. Unfortunately, these fiscal policies have generated debt accumulation at an unsustainable rate.

In the 1990s simulation, the Swiss debt brake results in a deficit/GDP ratio above the tolerance level. Since these were years of rapid economic growth, the Swiss debt brake would have had a pro-cyclical impact. Over the past decade, the Swiss debt brake also would have had a pro-cyclical impact: Simulated deficits increased above the tolerance level in periods of

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10 Merrifield and Poulson, 2016.
economic expansion prior to the Great Recession; and then decreased below the tolerance level during the Great Recession and recovery. Only in the past few years is the deficit eliminated and the budget balanced. Two decades is a long time to wait before bringing the deficits below the tolerance level and balancing the budget.

By contrast, the deficit/debt brake reduces the simulated deficit/GDP ratio below the tolerance level in the 1990s, eliminating deficits entirely and balancing the budget by 2000. With the exception of the worst year of the Great Recession, 2009, the simulated ratio is held below the tolerance level. The deficit/debt brake has a countercyclical impact, increasing the simulated deficit/GDP ratio in recession years and decreasing the ratio in periods of economic expansion. Over the past decade, this rule approximates a cyclically balanced budget, with deficits in

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recession years offset by surpluses in years of economic expansion. Thus the deficit/debt brake contributes to budget stabilization over the business cycle, as well as imposing the fiscal discipline required for a sustainable fiscal policy.

**Total Spending/GDP Ratio**

In our simulation analysis, we applied the fiscal rules to a measure of spending that excludes Social Security, Medicare, and interest. In the following comparison of fiscal rules, we use the more comprehensive measure of spending including these expenditures to capture the full impact of the rules on total expenditures.

At the beginning of the simulation period, the actual total spending is above 25 percent of GDP (see Figure 3). The prudent fiscal policies pursued during the 1990s resulted in a modest decline in that ratio. After the recession in 2001, the actual total spending again increased to about 25 percent of GDP.

There was a discontinuous increase in the actual ratio to 30 percent during the Great Recession, and the actual ratio has remained above 25 percent of GDP since then.

In the 1990s, the Swiss debt brake would not have imposed effective constraints on total spending, as Figure 3 demonstrates. With this rule in place, the simulated total spending would have remained above 25 percent of GDP. The pro-cyclical impact of the Swiss debt brake is evident over the past decade, with the simulated total spending/GDP ratio rising in periods of economic expansion and falling during the Great Recession.

The fiscal discipline imposed by the deficit/debt brake is evident from the outset of the period, as seen in Figure 3. Under this rule, total spending falls from about 25 percent to 20 percent of GDP over a decade, and it remains at that level with the exception of the worst year of the Great Recession, 2009.

What is especially important is that the fiscal discipline with the deficit/debt brake is achieved with a modest reduction in the rate of growth in spending. With this rule in place, the average annual rate of growth in general fund spending over the period is 3.83 percent, roughly 1 percent below the average annual rate of growth in actual general fund spending. And that does not include the un-budgeted spending financed from emergency funds.
Figure 3
Actual U.S. federal spending, minus Social Security, Medicare, and interest payments, and simulated spending under the Deficit/Debt Brake and the Swiss Debt Brake, 1994–2013
The GDP Growth Rate

Because the simulation model incorporates dynamic scoring, we are able to capture the positive impact of fiscal rules on the rate of growth in GDP. (See Figure 4.)

Figure 4
Growth of U.S. GDP and simulated results of deficit/debt brake and the Swiss debt brake, 1994–2013
In the 1990s, the actual GDP growth rate was greater than 4 percent. In the recession years 2001 and 2002, the actual growth rate fell below 4 percent but then recovered, rising above 4 percent in the post-recession years. The Great Recession was accompanied by a sharp contraction in growth, reaching a negative 2 percent in 2009, the worst year of that recession. Recovery from the Great Recession has been slow, with evidence indicating the nation’s economic growth rate may remain below the long-term trend.\(^{11}\)

The rate of growth in GDP with both fiscal rules in place follows a similar path in the long run. In the early years, there is no significant difference between the actual growth rate and the simulated growth rate with the fiscal rules in place. But a divergence in growth rates emerges during the 2001–2002 recession. With the fiscal rules in place, GDP contracts less during the recession years and bounces back quicker in recovery years. With fiscal rules in place, the simulated GDP growth rate is significantly higher than the actual growth rate in years of economic expansion. This superior growth performance with fiscal rules is especially evident during the Great Recession.

The cumulative impact of the higher growth rate with fiscal rules in place is evident by the end of the period. In 2013, the simulated level of GDP with the deficit/debt brake is about 6 percent above the actual GDP, slightly greater than the 5 percent difference achieved by the Swiss debt brake. We estimate the higher level of simulated GDP in that year with the deficit/debt brake would have resulted in roughly 11 million more jobs, essentially resulting in full employment.

8. What’s Behind the Resistance to Fiscal Discipline

If solving the nation’s fiscal crisis requires only a modest reduction in the rate of growth in spending, why is it so difficult to impose fiscal discipline on the federal government? We find there are fatal flaws in current fiscal policy, and the proposed deficit/debt brake is designed to address each of those flaws (Merrifield and Poulson 2016).

The simulation analysis reveals policies reducing fiscal deficits and government debt are required for a sustainable fiscal policy. Unfortunately, legislators face a moral hazard in fiscal policy decisions, referred to as the shortsightedness effect. With election cycles of two to six years in Congress, legislators focus on the impact of fiscal policy decisions within that time frame. Fiscal policy is biased toward increased spending that benefits constituents in the short...

\(^{11}\) Throughout most of the post-World War II period, the annual rate of economic growth averaged about 3 percent in the United States. Since 2000, growth has averaged less than 2 percent. Recovery from the Great Recession has been significantly slower than in other post-recession periods. The Congressional Budget Office projects this retardation in growth will continue over the next decade (Congressional Budget Office, 2012. 2016b).
run while shifting the cost to taxpayers in the long run. The outcome is a fiscal policy biased toward deficit spending and accumulation of debt.

Whereas legislators have a short time horizon, special interests promote increased spending in the long run. These special interest are well organized and motivated to mobilize resources and lobby Congress for increased spending that benefits their special interests.

The bias toward deficit spending and debt also reflects the *special-interest effect*. Whereas legislators have a short time horizon, special interests promote increased spending in the long run. These special interest are well organized and motivated to mobilize resources and lobby Congress for increased spending that benefits their special interests. The cost of these programs is imposed on millions of taxpayers who are not well-organized to oppose the higher spending and taxes required to fund these programs.

Lobbying in the defense industry illustrates this bias toward deficits and debt. Some defense contractors have been lobbying in support of defense spending on their weapons systems for more than half a century. Their lobbyists put constant pressure on legislators, especially legislators from states with defense contractors, to boost defense spending. There are numerous examples of weapons systems even the military opposes that are nonetheless funded because of this lobbying pressure (Mak 2014, Poulson 2016).

The bias toward deficit spending and debt also reflects a lack of transparency and accountability in fiscal policy decisions. Current statutory fiscal rules are easily circumvented or suspended, allowing legislators to exceed spending constraints. Much of the increased spending in recent decades has funded un-budgeted emergency expenditures in response to fiscal stress in periods of recession, and military conflicts.

The proposed deficit/debt brake is designed to address these flaws in current fiscal policy. The spending cap is applied to a comprehensive measure of spending that excludes only Social Security, Medicare, and interest on the debt, recognizing that new rules for these entitlement programs will also be required for a sustainable fiscal policy going forward.

These new fiscal rules will require a fundamental reform of the budget process. There must be agreement on a spending cap that satisfies the deficit/debt brake at the beginning of each budget cycle. A top-down budget process is then required to bring expenditures for all government programs into line with the spending cap.

Implementing these fiscal rules for a sustainable fiscal policy will require an independent government agency, similar to that used in Sweden and other countries. We refer to this agency as the Fiscal Responsibility Commission. The task of the Fiscal Responsibility Commission is to monitor and report on the implementation of the new fiscal rules. This means calculating a spending cap consistent with the deficit/debt brake at the beginning of each budget cycle. The Fiscal Responsibility Commission must also ascertain objectively and independently whether the budget proposed in Congress is consistent with the spending cap, and the Commission would be required to report this to the public on a timely basis. If Congress violates the fiscal rules,
legislators must report to the Commission the reasons for those violations and what remedial fiscal reforms are required to correct the violation. This transparency would allow citizens to hold legislators responsible for their fiscal policy decisions in a way that is not possible with current fiscal rules.

Enacting the proposed deficit/debt brake appears to be a formidable task, but this fiscal reform has enabled Switzerland and other countries to address their fiscal crises and put their fiscal policies on a sustainable path. In the case of Switzerland, the new fiscal rules were enacted through referendum and embodied in the constitution. In the case of Sweden, the new fiscal rules were enacted as statutory law.

Experience with new fiscal rules in these countries suggests the most effective rules are embedded in the nation’s constitution. When Swiss legislators violate the fiscal rules, they expose themselves to considerable political risk. In Sweden, it is easier for legislators to circumvent and suspend their statutory rules, just as it is in the United States. Experience with constitutional and statutory fiscal rules in the United States on the state level leads to the same conclusion: The best prospect for solving the debt crisis is to incorporate the rules into the U.S. Constitution through the amendment process. Congress’s reluctance to propose a balanced budget amendment suggests the states will most likely have to propose the fiscal rules through an Article V amendment convention.\(^{12}\)

Regardless of whether the proposed deficit/debt brake rule is enacted through constitutional change or statutory law, this reform holds the best hope for restoring the United States to a sustainable fiscal policy in the long run.

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9. Conclusion

Fiscal policy in the United States has followed a troubled path in recent decades, with policymakers abandoning fiscal stabilization in exchange for ballooning debt and extreme deficits. Actual debt gradually increased well above the 60 percent of GDP tolerance level, and during the Great Recession, there was a discontinuous increase in debt, pushing debt above 100 percent of GDP. The nation now faces a fiscal crisis as the debt/GDP ratio is projected to continue to increase in coming decades. A sustainable fiscal policy will require deficit reduction and elimination in the long run to bring the debt/GDP ratio below the tolerance level.

The deficit/debt brake appears to be an optimal fiscal rule for the United States.

In this study, we use a dynamic simulation model to simulate the impact of fiscal rules over the time period of 1993 to 2013. These fiscal rules are designed to reduce the debt/GDP ratio below the tolerance level and put the nation on a path of sustainable fiscal policy. We explore the impact of a Swiss debt brake and a more stringent fiscal rule that we propose, a deficit/debt brake. While both of these fiscal rules would impose fiscal discipline, the deficit/debt brake appears to be a superior fiscal rule for achieving the required fiscal consolidation.

The deficit/debt brake imposes a more stringent cap on spending than does the Swiss debt brake. With the rule in place, the simulated debt/GDP ratio is gradually reduced well below the tolerance level. The Swiss debt brake prevents a further rise in the simulated debt/GDP ratio above the tolerance level but fails to achieve the fiscal stabilization required to bring that ratio below the tolerance level.

The deficit/debt brake reduces the simulated deficit/GDP ratio below the tolerance level. With the deficit/debt brake in place, the budget is balanced within a decade. This rule also achieves a cyclically balanced budget, with deficits in periods of recession offset by surpluses in periods of economic expansion. In contrast, the Swiss debt brake leaves the simulated deficit/GDP ratio above the tolerance level. That rule also has a pro-cyclical impact and would require more than two decades to achieve a balanced budget.

The increase in the actual debt/GDP ratio reflects unconstrained growth in spending. Over this period, the actual total spending has been well above 20 percent of GDP. There was a discontinuous increase in spending during the Great Recession, pushing spending to 30 percent of GDP, and the ratio has remained above 25 percent of GDP since then. The deficit/debt brake, by contrast, would have imposed fiscal discipline from the outset. With this rule in place, simulated total spending would have been reduced from 25 percent of GDP to 20 percent over a decade and remain at that level with the exception of the Great Recession year of 2009. The Swiss debt brake is a less stringent constraint on spending. Only in recent years would that rule have reduced simulated total spending to 20 percent of GDP.

In this simulation analysis, we use dynamic scoring enabling us to capture the positive impact of fiscal rules on economic growth. That positive impact occurs when fiscal rules reduce the
transfer of resources from the private sector to the public sector and when surplus revenue above the spending cap is offset by reductions in the marginal tax rate. Both fiscal rules would have boosted economic growth significantly. The deficit/debt brake appears to be the superior rule, increasing simulated output and employment more than the Swiss debt brake.

The deficit/debt brake appears to be an optimal fiscal rule for the United States. It would reduce deficits and debt below tolerance levels and achieve a sustainable fiscal policy in the long run. That rule would also achieve a cyclically balanced budget, stabilizing the economy over the business cycle. The rule would significantly boost economic growth and employment.

A spending cap is applied to a comprehensive measure of spending that excludes only Social Security, Medicare, and interest on the debt. Going forward, new rules would be required to constrain the growth in entitlement spending, and imposing fiscal rules to constrain other components of federal spending should set the stage for that fiscal reform as well.

Under the deficit/debt brake, the government could meet the need for emergency spending, including military spending. The rule provides for annual deposits into an emergency fund and capital construction fund to finance un-budgeted supplemental appropriations, subject to a supermajority vote in both houses of Congress.

It should be emphasized that the proposed deficit/debt brake does not require a reduction in spending in any year over this period. Fiscal discipline is achieved with a modest 1 percent reduction in the rate of growth in spending over this period. The government would be able to meet the need for emergency spending, including military spending, while still restraining discretionary spending overall. A 1 percent reduction in the rate of growth in general fund spending is a small price to pay for a sustainable long-term fiscal policy.

If solving the debt crisis requires only a modest reduction in the rate of growth in federal spending in the long term, the question is why it is so difficult to impose this fiscal discipline. The statutory rules to impose fiscal discipline on Congress are routinely circumvented and suspended. For three decades, Congress has failed to propose a balanced budget amendment to the U.S. Constitution. Moral hazard problems have led elected officials to pursue profligate fiscal policies and to block proposals for a balanced budget amendment to the Constitution.

Pundits tell us U.S. citizens are no longer interested in fiscal discipline or the debt crisis, and that elected officials are simply reflecting this citizen apathy. Surveys reveal, however, that 70 to 80 percent of citizens support a balanced budget amendment to the Constitution (Poulson, 2016). American citizens’ support for prudent fiscal policies and constitutional rules to impose this fiscal discipline is no different from that of Swiss citizens. Therefore, the best prospect for solving the debt crisis is to follow the Swiss example and incorporate the proposed fiscal rules into the U.S. Constitution. Given Congress’s reluctance to propose a balanced budget amendment, citizens will most likely have to propose the fiscal rules through an Article V amendment convention.
References


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