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# Using inflation to erode the US public debt

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ABSTRACT

Projections indicate the US Federal debt held by the public may exceed 70–100% of GDP within 10 years. In many respects, the temptation to inflate away some of this debt burden is similar to that at the end of World War II. In 1946, the debt ratio was 108.6%. Inflation reduced this ratio by more than a third within a decade. Yet there are some important differences – shorter debt maturities today reduce the temptation to inflate, while the larger share of debt held by foreigners increases it. This paper lays out an analytical framework for determining the impact of a large nominal debt overhang on the temptation to inflate. It suggests that when economic growth is stalled, the US debt overhang may induce an increase in inflation of about 5% for several years that could significantly reduce the debt ratio.



## 1. Introduction

Since the start of 2007, the financial crisis has triggered over $1.62 trillion of write-downs and credit losses at US financial institutions, sending the American economy into its deepest recession since the Great Depression and the global economy into its first recession since World War II. The Federal Reserve has responded aggressively. In an effort to hold down borrowing costs and boost lending, it has kept the target rate for overnight loans between banks at 0–0.25% since December, 2008, and it has pursued unconventional monetary easing.[1] Fiscal policy became expansionary as well. The $700 billion Troubled Asset Relief Program and the $787 billion Economic Recovery and Reinvestment Act were signed into law. In all, Federal spending increased 18% in FY2009, to 25% of GDP, the highest level in over 50 years. Revenues fell almost 17% below receipts in 2008, to about 15% of GDP, the lowest level in over 50 years.[2]

The United States is now facing large Federal deficits and growing public debt. In FY2009, the Federal deficit was $1.4 trillion, or 10% of GDP, the highest deficit-to-GDP ratio since 1945.[3] In FY2010, the deficit was 8.9% of GDP. The Federal debt held by the public grew to $7.5 trillion, or 53% of GDP, at the end of FY2009, the highest debt-to-GDP ratio since 1955.[4] The estimated debt ratio for FY2010 is an even higher 63.6%. The total outstanding Federal debt for FY2009 was $11.9 trillion, or

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[1] Federal Reserve Press Releases, various dates.
[2] Daily Treasury Statement (various dates) and Monthly Treasury Statement (various dates).
[3] US Treasury.
[4] Congressional Budget Office (2009) estimates. The Office of Management and Budget (2009) estimates public debt to be 55.7% of GDP in 2009, while the IMF (2009) projects it to be 58.2%.

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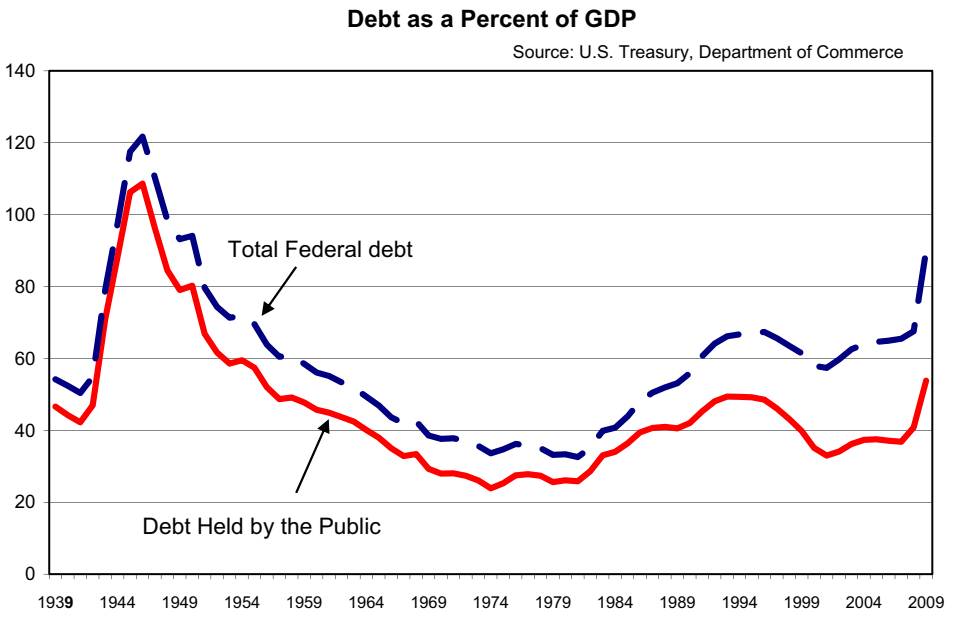


**Fig. 1.** Debt as a share of GDP.

83.4% of GDP.[5] The gross Federal debt is estimated to be $13.8 trillion in FY2010, nearly 95% of GDP. If economic recovery is slow to take hold, large deficits and growing debt are likely to extend into future years. Not surprisingly, concerns about government deficits and public debt now dominate the policy debate.

Many observers worry that the debt/GDP ratios projected over the next ten years are unsustainable.[6] Given that concern, and assuming that deficits can be reined in, how might the debt/GDP ratio be reduced? There are four basic mechanisms. First, GDP can grow rapidly enough to reduce the ratio. This scenario requires a robust economic recovery from the financial crisis. Second, inflation can rise, eroding the real value of the debt held by creditors and the effective debt ratio. With foreign creditors holding a significant share of the dollar-denominated US Federal debt, they will share the burden of any higher US inflation along with domestic creditors.[7] Third, the government can use tax revenue to redeem some of the debt. Fourth, the government can default on some of its debt obligations. Over its history, the United States has relied on each of these mechanisms to reduce its debt/GDP ratio.[8] In this paper, we examine the role of inflation in reducing the Federal government's debt burden.

We start in Section 2 by laying out some stylized facts. We examine Federal debt held by the public since World War II and show how publicly-held debt as a percentage of GDP has evolved. We also provide time-series evidence on average maturity length of the public debt. We observe that very little of the debt is indexed to inflation, despite the introduction of Treasury inflation-protected securities (TIPS) in 1997, and all debt is denominated in dollars.

The distributional impact of inflation depends on the allocation of debt between domestic and foreign creditors, so we next show how the share held by foreigners has grown over time. We end this section by estimating the impact of various inflation scenarios on the debt/GDP ratio, and we calculate how the inflation burden would be shared between domestic and foreign creditors.

In Section 3, we develop a model that shows the impact of a nominal debt overhang on the temptation to inflate. The model illustrates that the optimal inflation rate is also positively related to the share of the debt held by foreign creditors, the cost of tax collection, and the share of non-indexed debt. For sensible parameter values, the model indicates that when

[5] The Budget of the United States Government, FY2009, p. 230, states: The Federal Government issues debt securities for two principal purposes. First, it borrows from the public to finance the Federal deficit. Second, it issues debt to Government accounts, primarily trust funds that accumulate surpluses. By law, trust fund surpluses must generally be invested in Federal securities. The gross Federal debt is defined as the sum of debt held by the public and the debt held by Government accounts. Borrowing from the public is normally a good approximation of the Federal demand on credit markets. Borrowing must be financed out of the saving of households and businesses, the State and local sector, or the rest of the world. Borrowing from the public thus affects the size and composition of assets held by the private sector and the amount of saving imported from abroad. It also increases the amount of future resources required to pay interest to the public on Federal debt. Borrowing from the public and the growth of the publicly-held Federal debt are therefore important policy concerns.

[6] For example, see Auerbach and Gale (2009).

[7] The real depreciation of the dollar also erodes the value of US public debt held by foreigners. See Rogoff (2009).

[8] Many people do not realize that the United States defaulted early in its history. In 1785, the US suspended interest payments on debt to France, and in 1787 defaulted on payment of principal as well. Eventually it repaid its debt in specie at par. In 1933, the US abrogation of the gold clause constituted a debt restructuring since nearly all public debts were repaid in fiat currency rather than gold. For a brief discussion of debt management after the American Revolution and Civil War, see the Appendix.