

The Federal Deficit and the National Debt

WHY THEY MATTER MORE THAN WE THINK

By Gary E. Clayton



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Using historical data from the Office of Management and Budget, the Congressional Budget Office, and the Organization for Economic Co-operation and Development, the author argues that the current method of expressing the federal deficit and/or debt as a percentage of GDP obscures the danger posed by potentially higher interest rates. While the debt and deficit may still be at manageable levels, the situation could deteriorate much quicker than we might imagine, sub-

stantially raising the government’s opportunity cost of servicing the national debt and diminishing the economic well being of American business and consumers.

In 1998, the federal government accomplished something it had not done for the previous 28 fiscal years—it ran a budget surplus rather than a deficit. However, four years, two tax cuts, one terrorist attack, and a recession later, federal budget deficits returned with a vengeance in the form of a FY2002 deficit of \$157.8 billion and deteriorated further after that. By FY2003, the federal deficit increased to \$375.3 billion; and in February 2004, it was even projected to reach \$520.7 billion by the end of the fiscal year.¹ Deficits add to the debt, and so by mid-FY2004 the gross federal debt reached a staggering \$7,131 billion—58.5 percent of which was held by the public.²

Despite the size of the federal deficit and the growing debt, there was some good news for the economy in 2004. Specifically, the economy seemed to be finally recovering from the 2001 recession as output expanded, unemployment declined, and interest rates were at historic lows not seen since the 1940s. The federal deficit was widely seen as inconvenient, and perhaps even necessary to restore economic growth, but the cost of financing the debt was

¹Table 1.1 - Summary of Receipts, Outlays, and Surpluses or Deficits: 1789-2009 (Office of Management and Budget, 2004).

²“The Debt to the Penny and Who Holds It” (Table in Bureau of the Public Debt, 2004). The amount held by the public was \$4,176,874 million, or 58.5 percent of the gross debt.

low because interest rates were also low.

Ironically, the confluence of events that left the U.S. economy with an historically large federal debt being serviced by historically low interest rates also created a recipe for crisis. Specifically, if interest rates were to return to higher levels, the cost of government borrowing could easily double or even triple, thereby raising havoc in the private sector. And, if crowding out were to occur as a result of higher levels of government borrowing, then even higher interest rates would hinder business sector spending on plant and equipment as well as consumer spending on big-ticket items like automobiles and housing. This is an accident waiting to happen and one that cannot be easily dismissed.

The sudden return to deficit financing has been the subject of considerable debate. Conferences and symposia were held, and pundits weighed in from all sides—everyone it seemed, had an opinion on the matter. Yet, a number of questions are still unanswered. For example, is either the deficit or the debt really at a manageable level, as some claim? And, if they are manageable, then at what point will these measures be out of control? Finally, with interest rates likely to rise, and with so many uncertainties surrounding future budgets, what are the consequences for interest rates, the federal budget, and future economic growth?³ This paper attempts to answer some of these questions—because federal deficits and the national debt matter more than we think.

Setting the Stage—the New Deficit-Debt View

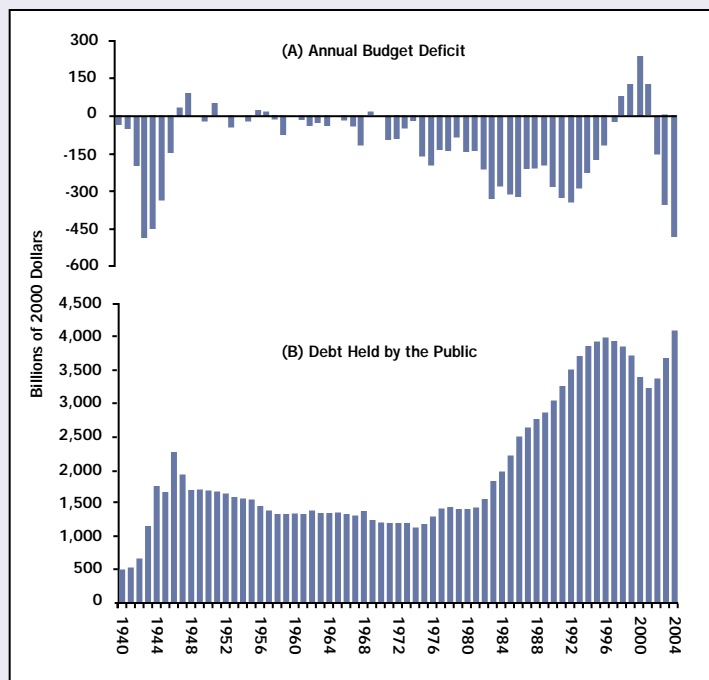
Panel A of Figure 1 shows the history of the federal deficit from 1940 through 2004 in constant dollar amounts; panel B shows the portion of the national debt, again measured in constant dollars, held by the public.⁴ The

³For example, the FY 2004 budget had no money set aside for peace-keeping operations in Afghanistan or the war in Iraq. As a result, the Bush administration had to ask for an \$87 billion mid-year “supplemental appropriation,” and there were indications that a similar request would again be made early in the FY2005 budget year.

⁴The federal deficit is taken from Table 1.1 in *The Budget for Fiscal Year 2005, Historical Tables* (OMB, 2004). The National debt comes from Table 7.1, and the

FIGURE 1

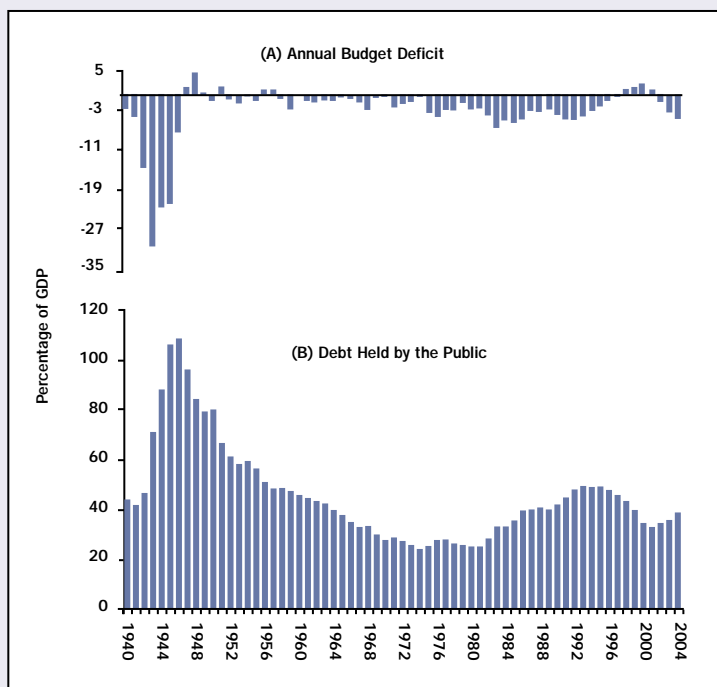
FEDERAL DEFICITS AND DEBT IN CONSTANT DOLLARS, 1940-2004



Source: OMB, 2004

FIGURE 2

FEDERAL DEFICITS AND DEBT AS PERCENTAGE OF GDP, 1940-2004



Source: OMB, 2004

relationship between the two is as expected: deficits generally increase the national debt, and surpluses reduce it. Even on an inflation-adjusted basis, FY2004 is notable in that the federal deficit was projected to reach levels not seen since 1943-44. In fact, had the federal deficit actually reached \$527 billion, the deficit in constant dollars would have been the highest ever recorded in the United States.⁵

The rapid return and near-historic size of the deficit and the resumed growth of the national debt caused quite a stir, although at a political level some officials have seemingly chosen to simply ignore it. At another level, the issue may appear to be one of presentation. For example, it has recently become more fashionable to talk about the deficit and the debt as a percentage of GDP. As can be seen in Figure 2, this view presents both measures in a more favorable light. Specifically, in 2004 the deficit as a percent of GDP was projected at 4.5 percent, which is dramatically lower than the 30.3 percent recorded in 1943. Likewise, the 2004 debt as a percent of GDP was only 38.6 percent, which compares favorably to the 108.6 percent reached in 1946.

While both views—constant dollar amounts and percent of GDP—are legitimate, the question remains, how serious is the problem? To help with the analysis, we begin with some historical perspectives.

Some Historical Perspectives

The most direct measure of the deficit is the excess of total outlays over total receipts (both on- and off-budget) in the federal budget.⁶ Deficits tend to occur when expenditures balloon because of a national emergency, as during World War II, or more recently, the additional expenditures required for homeland security in the wake of 9/11. A deficit can also occur whenever there is a drop in tax collections due to a recession, as in 1990-91, or whenever there is a drop in revenues due to a tax cut, as in the 1980s when Ronald Reagan was president. Sometimes both occur simultaneously, as in 2001 when President George W. Bush presided over both a recession and a tax cut. In general, the causes of a deficit are fairly obvious and well understood (Patton, 2001).

deflator used to convert nominal to 2000 constant dollars comes from Table 1.3 of the same volume. Both series have been converted to constant dollar amounts.

⁵That record is safe for now. On November 4, 2004, the CBO announced that the FY2004 federal budget deficit in current dollars was \$413 billion. While this is a record deficit in terms of current dollars, it is only the third largest constant dollar deficit since 1940.

⁶For example, this is the measure of the deficit used in Figures 1 and 2.

Despite this apparent simplicity, there has been some professional disagreement over the best way to measure the federal deficit. Some agencies, such as the Congressional Budget Office (CBO), have adjusted the deficit for swings in the business cycle to get what they call a standardized budget balance (Engen, 2003). Eisner (1992) argues that we could get another measure by arbitrarily excluding social security and the postal service, or that we could even exclude deposit insurance payments in the banking system. A much longer methodological paper by Blejer and Cheasty (1991) identifies at least six different measures of the “overall government deficit.”

Aside from these methodological issues, there are two reasons for staying with the first measure, the “total” deficit that represents the difference between total federal receipts and expenditures. First, this is the most visible and popular of the deficit measures, and it is therefore the easiest for the average person to comprehend. Second, this is the measure most visibly threatened by the economic changes that are likely to take place as we proceed into the future.

From an historical perspective, it also seems that deficits are becoming more acceptable. Keynesians, for example, have long argued that temporary federal deficit spending can provide a useful stimulus if the economy is growing too slowly or is in recession. Temporary is the key word here, because it was also expected that deficits would turn to surpluses when the economy recovered, thereby making the debt less of a burden (Patton, 2001). Some liberals have even argued that deficits due to government spending are socially desirable, especially if the spending is for social purposes. In the wake of the Reagan-Bush deficits, Eisner (1992) argued that the federal deficit was too *small*, and that the real deficits in society—the run down infrastructure of roads, bridges, waste-disposal facilities, and protection of our environment, [and] our failure in the combat against crime and drugs—are too large.

Even some conservatives, who traditionally opposed deficits for largely fiscal reasons, now argue that deficits matter less than we think. For example, when Wesbury and Forres (2003) defended the recent Bush tax cuts, they used cost-benefit logic to argue that “deficits are not a problem for any economy as long as the returns from running those deficits outweigh the costs. Boosting spending to fight terrorism is a necessary expenditure ... the use of U.S. military might in the Middle East has the potential to spread democracy to hundreds of millions of people. The potential positive impact is immeasurable.”

Finally, there is another and generally newer group who, for want of a better term, could be called pragmatists.

This group, drawing from across the economic and political spectrum, is united by their concern with the sudden and forceful return of federal budget deficits. They are less swayed by political and ideological considerations and instead focus on the impact of deficits on the long-term growth of the economy. They are more influenced by econometric studies that document the detrimental impact of the deficit on overall national saving, which in turn causes lower long-run rates of economic growth and asset accumulation. The documentation here is fairly extensive despite the newness of the returned federal deficits.

For example, Elmendorf and Liebman (2000) estimated that private sector saving will only offset 25 percent of the lost saving due to a federal deficit. Gale and Potter (2002) estimated that private sector saving will only offset 31 percent of the decline in public saving caused by the 2001 tax cut. And, in the wake of the CBO's estimate of a \$6 trillion loss in budget surpluses due to the Bush tax cuts, Gale (2003) concluded that "if you assume that private saving rises by about 30 percent of that decline ... the capital stock owned by Americans will be \$4.2 trillion lower in 2012 than if that deterioration had not occurred." In reference to the same period, Schultze (2003) agreed that the projected budget deficits would "depress national saving [and] the ultimate net result would be a decrease in the stock of capital owned by the nation's citizens, and therefore in national income, made worse by the increased interest bill for the public debt that was accumulating in the interim."

The lower rates of growth and asset accumulation are due to two things: First, when federal deficits compete "in the capital markets or in the market for loanable funds [they] tend to raise interest rates and crowd out private investment" (Engen 2003). Second, there is the issue of a change in the *quality* of investments. As Penner (2003) points out, "if [the deficit is] used to finance a high-yielding investment it's beneficial to growth, but government has a lot of trouble finding high-yielding investments."

The Costs of Servicing the Debt

In the short run, one measure of the cost of the debt is the net interest paid to maintain it. For example, Table 1 shows the planned federal government expenditures in the FY2004 budget with the categories ranked according to relative size. The \$156.3 billion of net interest in the figure is just an estimate; but even if it goes up or down a few tens of billions, it will still be the sixth largest expense line in the federal budget.

One problem is that large net interest payments on the debt tend to crowd out other federal expenditures. So, \$156.3 billion spent in one category means that something

	billions of current dollars	as percent of total
Social security	496.2	21.4
National defense	453.7	19.6
Income security	339.5	14.6
Medicare	270.5	11.7
Health	243.5	10.5
Net Interest	156.3	6.7
Education, training, employment & social services	87.2	3.8
Transportation	68.1	2.9
Veterans benefits & services	60.5	2.6
Administration of justice	41.6	1.8
International affairs	34.2	1.5
Natural resources & environment	31.7	1.4
General government	25.4	1.1
General science, space & technology	22.3	1.0
Agriculture	20.1	0.9
Community & regional development	18.8	0.8
Commerce & credit	7.7	0.3
Energy	1.0	0.0
Allowances	0.0	0.0
Undistributed offsetting receipts	-59.3	-2.6
Total Outlays	2,318.8	100.0

Source: CEA, 2004.

else has to be given up somewhere else—hence the opportunity cost of financing the debt. However, if the annual net interest payment should increase another \$60+ billion or so the next year, and even more the year after that (as will be argued shortly), then it will be even more difficult to maintain the current level of spending in other categories.

Crowding out is expected to have its biggest impact in the credit markets, with higher interest rates making it more difficult for the private sector to borrow and invest, thereby worsening the long-term rate of economic growth and capital accumulation. And, if the disruption in the capital markets is severe enough, uncertainty about inflation could cause a loss in investor confidence and put a downward pressure on the U.S. dollar (Rubin et al., 2004).

Crowding out even has redistribution effects. According to Lav and Brecher (2004), reduced federal payments to states have reduced state revenues, and unfunded federal mandates have caused the states to spend more than if the federal government had picked up the tab. While the impact of these shifted expenditures

TABLE 2

ORIGINAL AND ADJUSTED FEDERAL DEFICIT PROJECTIONS

Year	2004 Historical Tables (OMB)		CBO Aug 03 Projections		Joint Statement Adjusted		CBO Mar 04 Projections	
	in billions	% of GDP	in billions	% of GDP	in billions	% of GDP	in billions	% of GDP
2004	-520.7	-4.5	-480.0	-4.1	-523.0	-4.5	-477.0	-4.2
2005	-363.6	-3.0	-341.0	-2.8	-436.0	-3.6	-363.0	-3.0
2006	-267.6	-2.1	-225.0	-1.8	-423.0	3.3	-273.0	-2.1
2007	-241.3	-1.8	-203.0	-1.5	-433.0	-3.2	-274.0	-2.1
2008	-239.0	-1.7	-197.0	-1.4	-457.0	-3.3	-286.0	-2.1
2009	-237.1	-1.6	-170.0	-1.2	-478.0	-3.3	-281.0	-1.9
2010	–	–	-145.0	-0.9	-501.0	3.3	-272.0	-1.8
2011	–	–	-9.0	-0.1	-561.0	-3.5	-176.0	-1.1
2012	–	–	161.0	1.0	-577.0	-3.4	-38.0	-0.2
2013	–	–	211.0	1.2	-611.0	-3.5	-34.0	-0.2
2014	–	–	–	–	–	–	-15.0	-0.1
Totals	-\$1,869	–	-\$1,398	–	-\$5,000	–	-\$2,489	–

Source: CBO, OMB, and Committee for Economic Development et al.

may be difficult to translate into changes in future economic growth, they certainly do inconvenience the current financial situation of state governments.

Finally, large annual interest expenses on the national debt also raise the issue of intergenerational transfers—transfers that occur when deficits used to fund one generation's consumption are financed by tax obligations handed down to the next. The question of transfers between generations is more than an ethical dilemma involving who owes whom what—it is a problem that will be severely complicated by the large demographic shifts that are expected to occur as our society ages and the first of the baby boomers starts to retire in 2008. In short, the consumption expenditures of one generation may well diminish the welfare of subsequent generations (Schultze, 2003; Committee for Economic Development et al., 2003).

What About the Size of Future Deficits?

Today's debate is fueled by the increasingly likely possibility of continuous deficits in the near future. Given Congress's apparent inability to reign in total spending, coupled with the Bush administration's efforts to increase defense expenditures while making the ten-year tax cut permanent, future budget forecasts are not very encouraging.

To illustrate, and in chronological order, we start with deficit projections that were published by the Office of Management and Budget (OMB) in early 2004.⁷ These

⁷These are from the same Historical Tables used to construct Figures 1 and 2. The OMB projections are discussed first because they were pre-

pared in late 2003, or at about the same time the CBO's August 2003 projections were prepared. estimates, appearing in columns two and three of Table 2, show sizeable annual deficits through 2009, although they also decline when expressed as a percentage of GDP.⁸ An August 2003 projection by the CBO appears in the next two columns. These projections were produced at about the same time as those in the OMB's *Historical Tables*; but the deficit projections, while still negative, were not quite as severe. In fact, the CBO even projected a modest budget surplus by 2012.

While the August CBO numbers were marginally better, they did not go unchallenged as they were contested in a rare "Joint Statement" put out by three respected fiscal watchdog groups: the Committee for Economic Development, The Concord Coalition, and the Center on Budget and Policy Priorities (2003). Specifically, the Joint Statement made five adjustments to the CBO's August deficit projections by assuming that (1) the Administration's expiring tax cuts will be extended; (2) relief from the alternative minimum tax will continue; (3) a prescription benefit costing \$400 billion over ten years will be passed;⁹ (4) the Administration's multi-year defense plan will be fully funded; and (5) domestic non-defense expenditures will keep pace with population growth and the rate of inflation (Committee for Economic Development et al., 2003). Once these adjustments were made, the revised federal budget deficit projections,

pared in late 2003, or at about the same time the CBO's August 2003 projections were prepared.

⁸The GDP estimates shown in the *Budget for Fiscal Year 2005, Historical Tables*, used an annual growth rate of nominal GDP of 5.1 percent through 2009.

⁹It was passed, but it turned out that the cost was about one-third higher than the estimate used in the Joint Statement.

shown in column six of Table 2, increased substantially. When expressed as a percent of GDP, shown in column seven, the deficit declines modestly until 2007 and then begins to increase slightly.¹⁰

The Joint Statement received high praise from many private sector economists who were concerned about the negative impact of the projected deficits on long-term economic growth. In a separate paper, Rubin et al. (2004) used their own estimates in place of the five Joint Statement adjustments only to find that their “adjusted projections [were] similar in spirit and magnitude, though different in some details, to those made [in the Joint Statement].” Moreover, they found that if the Joint Statement adjustments were further expanded to include Medicare, the \$5.0 trillion, 10-year cumulative deficit shown in Table 2 would increase to \$5.1 trillion. And, if the underlying long-term economic growth assumptions by Decision Economics, Inc. or (separately) Goldman Sachs were used, then the 10-year cumulative deficit projections would further increase to either \$5.4 trillion or \$5.5 trillion. The conclusion was unambiguous: “there is broad consensus by independent analysts that the CBO baseline projections over the next few years are too optimistic relative to any set of realistic policy assumptions and economic projections” (Rubin et al., 2004).

The adjustments in the Joint Statement, along with the subsequent revisions and modifications discussed above, were all made to the August 2003 CBO baseline projections shown in Table 2. In March 2004 the CBO revised its August 2003 estimates. These new revisions, shown in the last two columns of the figure, were even worse than the estimates it issued a few months earlier. If we compare the two CBO cumulative deficit totals in the bottom of the figure, it is evident that the new forecast through 2013 was \$1,076 billion *higher*—or nearly double—the one made in August. Consequently, one has to wonder how much worse the Joint Statement estimates would have been if the adjustments were made to the March 2004 report instead of the one released in August 2003.

Finally, we need to note that the last

¹⁰The Joint Statement did not show the percent of GDP figures in column seven. For comparison purposes the CBO’s January 2004 GDP projections were used to compute this column.

three “percent of GDP” columns in Table 2 assume that the underlying nominal GDP will grow at an annual compound rate of 4.62 percent for the entire 10-year period.¹¹ And, since the economy has been growing steadily since the last recession ended in 2001, this means that the CBO forecasters expect continuous economic growth for 13 years—something never before achieved in the history of the U.S. economy.

The Short Term Threat of Higher Interest Rates

The conventional wisdom among economists is that prolonged deficits will raise interest rates as borrowers are crowded out of credit and loanable funds markets, thus negatively affecting long-term economic growth. We might ask, what would be the short-run impact of higher interest rates—regardless of their cause—on the net interest expense line shown earlier in Table 1? After all, interest rates in early 2004 were already at historic lows, and they were widely expected to go up as soon as the Fed shifted its emphasis from restoring growth to preventing inflation.

To answer this question, we have to first find the imputed or *effective* annual interest cost of the national debt, which is done by dividing the annual net interest expense by the size of the publicly held debt.¹² The results of this

¹¹From the January 26, 2004 CBO projections.

¹²For example, in FY2002, net interest of \$171.0 billion was paid on \$3,540.4 billion of national debt held by the public. This yields an effective annual interest cost of $\$171.0/\$3,540.4 = .0483$, or 4.83 percent.

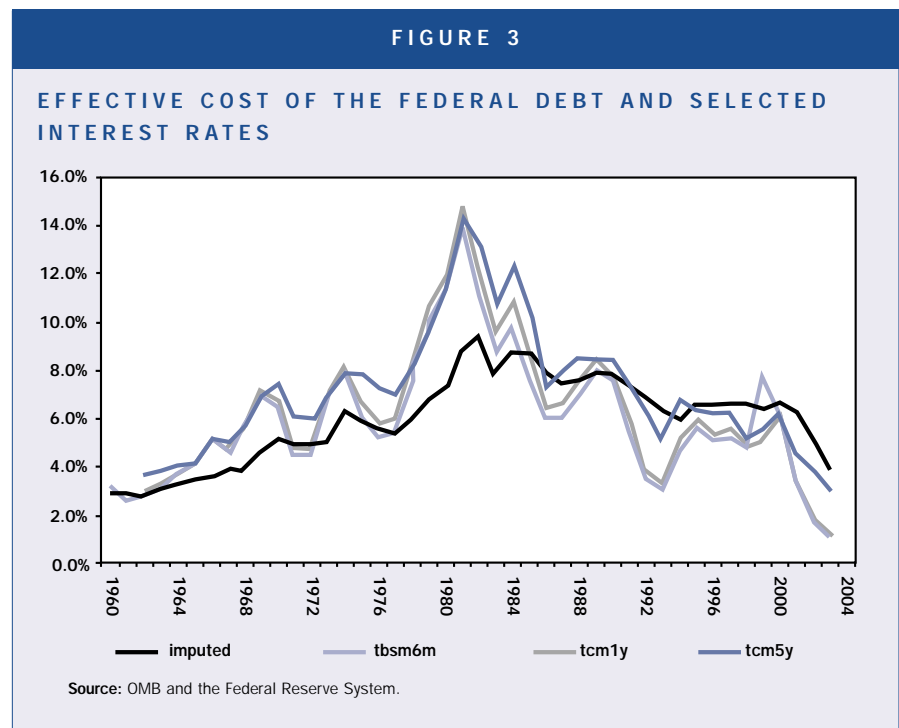


TABLE 3

ORIGINAL AND ADJUSTED FEDERAL DEFICIT PROJECTIONS (\$ BILLIONS)

Year	GDP	Effective	Joint Statement		Interest	Interest	CBO Mar 04 Update		Interest	Interest
		Interest Rate	Deficit	Debt	% GDP	Deficit	Debt	% of GDP		
2004	11,629	3.54%	-523	4,420	156.3	1.34	-477	4,420	156.3	1.34
2005	12,243	4.54%	-436	4,856	220.5	1.80	-363	4,783	217.2	1.77
2006	12,814	5.54%	-423	5,279	292.5	2.28	-273	5,056	280.1	2.19
2007	13,389	6.36%	-433	5,712	363.3	2.71	-274	5,330	339.0	2.53
2008	14,023	6.36%	-457	6,169	392.4	2.80	-286	5,616	357.2	2.55
2009	14,686	6.36%	-478	6,647	422.8	2.88	-281	5,897	375.1	2.55
2010	15,354	6.36%	-501	7,148	454.7	2.96	-272	6,169	392.4	2.56
2011	16,034	6.36%	-561	7,709	490.3	3.06	-176	6,345	403.6	2.52
2012	16,743	6.36%	-577	8,286	527.0	3.15	-38	6,383	406.0	2.42
2013	17,490	6.36%	-611	8,897	565.9	3.24	-34	6,417	408.2	2.33
2014	18,266	6.36%	-	-	-	-	-15	6,432	409.1	2.24
Totals			-\$5,000	-	-	-	-\$2,489			

Source: CBO, OMB, and Committee for Economic Development et al.

computation, covering a 43-year span ending in 2003, are shown in Figure 3 along with rates for 6-month, 12-month, and 5-year government securities.¹³ Overall, the effective rate shows a reasonably close correlation to the rates on other government securities. If anything, the effective rate seems to lag the other rates prior to 1982 when longer-term debt played a bigger role in national debt financing. From 1985 to 2001, the four rates were reasonably comparable.

The implications of Figure 3 are this: if interest rates are likely to go up in the future (and who among us does not expect this to happen?), then the effective rate will be pulled up also. In addition, it is not unreasonable to suppose that the rise in rates will be substantial, relatively speaking. For example, the rate on the one-year securities shown in the figure was at an historic low of 1.24 percent in 2003. If that rate were to *double*, it would still be lower than in any other year in the figure except for 2002, or if it were to *triple*, it would still be lower than in any other year except for 2001-02.

Given the historically low level of nominal interest rates in mid-2004, it would not be unreasonable to assume

that those rates could double or even triple in the next few years, thus pulling up the effective annual cost of the national debt. To stay on the conservative side, let's just assume that the effective cost of the debt, which reached a low of 3.54 percent in mid-2004, returns to the average level (6.36 percent) recorded for 1992-2001—an increase by a factor of 1.80.¹⁴ Even such a modest increase would catapult the net interest cost in Table 1 to fourth place (assuming no other changes) on the list. And, if the national debt increases at all, a distinct possibility as we saw in the previous section, then the interest cost on the debt could easily become the *third* largest federal budget item behind social security and national defense! To get a better look at the impact of higher rates, we now turn to Table 3.

The second column in the figure shows how nominal GDP would look if it grew at a compound annual rate of 4.62 percent for a 10-year period.¹⁵ The projected effective interest cost of the debt, based on the discussion above, is shown in column three. Rather than use 6.36 percent for all years, we'll start with 3.54 percent for 2004, and then let the rate increase by one percent per year until 6.36 percent is reached in 2007. Next, we have two future deficit estimates—one that appears in the Joint Statement, and another provided by the CBO in its latest March 2004 update.¹⁶ Finally, we use the interest cost in

This computation has the advantage of implicitly taking into account the fact that the debt is financed with securities of different maturities and interest rates. The effective rate gives us an overall number and does not require us to know anything about the composition of the debt.

¹³The choice of securities is somewhat arbitrary as there are a number to choose from, but all had the advantage that they spanned, or nearly spanned, the 43-year period in the figure. The shortest-term security is the Fed's six-month secondary Treasury bill rate (tbsm6m); the one-year rate is the Fed's constant one-year maturity (tcm1y); and the last is the Fed's constant maturity, five-year rate (tcm5y). All rates were obtained from the Federal Reserve System's statistical website at <http://www.federalreserve.gov/rnd.htm>.

¹⁴The imputed cost for 2004, based on the \$156.3 billion net interest outlay shown in Table 1 and the \$4,420.8 billion debt in the *Historical Tables*, was 3.54 percent; so, $.0636/.0354 = 1.8$.

¹⁵Again using the January 26, 2004 CBO projections.

¹⁶The two debt columns in Table 3 are computed by simply summing the deficits. While this is not entirely accurate, it is close enough for the rough estimates that are being made ten years into the future.

TABLE 4

DEFICITS, TOTAL GOVERNMENT DEBT, AND NET INTEREST ON DEBT, 2004

Surplus (+) or Deficit (-) % of GDP	General Government Debt % of GDP	Net Interest Debt % of GDP
Czech Republic -8.4	Japan 163.4	Greece 5.1
Japan -7.1	Italy 116.8	Belgium 4.8
Poland -5.7	Greece 102.6	Italy 4.7
Hungary -5.2	Belgium 101.6	Slovak Republic 3.6
United States -4.7	France 74.3	Portugal 2.9
Slovak Republic -4.0	Canada 73.1	France 2.9
France -3.8	Germany 66.9	Germany 2.7
Portugal -3.8	Austria 64.8	Austria 2.6
Germany -3.7	United States 64.1	Spain 2.2
Greece -3.2	Spain 63.3	Netherlands 2.1
Italy -3.1	Sweden 61.2	Canada 1.9
Netherlands -3.1	Portugal 60.6	Japan 1.8
United Kingdom -2.9	Netherlands 57.3	United States 1.8
Luxembourg -1.8	Poland 55.3	United Kingdom 1.5
Switzerland -1.6	United Kingdom 52.7	Australia 1.3
Austria -1.3	Finland 52.3	Denmark 1.0
Ireland -0.5	Denmark 49.0	Switzerland 0.7
Belgium -0.2	Slovak Republic 44.8	Ireland 0.1
Sweden 0.2	Iceland 39.2	Finland 0.1
Iceland 0.2	New Zealand 34.7	Iceland -0.2
Spain 0.3	Norway 33.9	Sweden -0.3
Australia 0.5	Ireland 31.5	New Zealand -0.3
Denmark 0.9	Korea 20.5	Korea -0.6
Canada 1.2	Switzerland	Luxembourg -1.1
Finland 1.6	Australia 17.2	Norway -4.7
New Zealand 2.9	Luxembourg 5.1	
Korea 4.7		
Norway 10.4		
Euro area -2.8	Euro area 77.3	Euro area 3.0
<i>Total OECD -3.6</i>	<i>Total OECD 77.7</i>	<i>Total OECD 2.0</i>

Source: OECD Annex Tables 27, 31 and 32, June 2004.

column three to estimate the dollar cost of the debt for both the Joint Statement and CBO estimates, and then show the net interest cost a percent of GDP.

The purpose for doing this is to see how a *less than doubling* of the interest rate cost of the national debt affects the dollar amount of net interest paid as a percent of GDP. As can be seen in Table 3, the dollar interest cost of the debt as a percentage of GDP rises *continuously* when the Joint Statement assumptions are used. When we examine the March 2004 CBO update, we see that the percentages rise until 2010 and then diminish modestly when deficits are projected to shrink. Both of these outcomes are based on two fairly optimistic assumptions. First, column two of Table 3 assumes that neither a reces-

sion nor a diminished rate of growth will occur before 2014. Second, it is implicitly assumed that the annual net interest payments on the debt are not financed by the issuance of new debt. If new debt is simply issued to cover the interest payments, then the total debt would go up even faster, and the deficit will be even worse.

An alternative way of looking at Table 3 is to realize that the billions of net interest payments shown in columns six and ten (take your pick) are precursors of the net interest payments that will eventually occur in future versions of Table 1. If we use the more conservative projections in the CBO column, then the government will be looking for an additional \$60.9 billion in net interest payments in 2005 (as net interest on the debt goes from \$156.3 billion to \$217.2 billion), followed by an additional \$62.9 billion in 2006—and that assumes that the cost of the debt rises only one percentage point during each year.

From a policy point of view, the question is one of opportunity costs. If the dollar

cost of servicing the debt more than doubles by 2007 (and this happens for both the Joint Statement estimates and the more conservative March 2004 CBO update), and if the deficit is not financed out of additional borrowing, then what will be sacrificed? Economic growth will undoubtedly bring in some additional tax revenues, but they will certainly not cover the increased budget shortfall.

Some International Comparisons

As we saw in Figure 2, expressing the deficit or the debt as a percentage of GDP is one way to make the numbers look better. Before we can answer the question as to whether or not it really makes the situation better, it helps

to look at Table 4 so that we can examine the U.S. situation in a comparative international setting.

The first two columns of Table 4 show the Organization for Economic Cooperation and Development's (OECD) estimates for the total government surplus (or deficit) as a percent of nominal GDP for 28 developed nations. For 2004, the United States ranks fifth highest, just between Hungary and the Slovak Republic.¹⁷ The middle portion of Table 4 shows general government debt (not just the portion held by the public) as a percent of GDP. According to this ranking, the 64.1 percent for the United States is lower than eight of the countries, and it is even lower than both the Euro area and total OECD averages. In fact, four countries have debt exceeding 100 percent of their respective GDPs. The last column in Table 4 shows net interest on the total government debt as a percent of GDP. According to this measure, the United States looks even better as it has now dropped to the middle of the ranking.¹⁸

The rankings in Table 4 reveal several things. First, it would appear as if the relative size of the U.S. debt is still within manageable limits. While we might not know exactly what the upper limit is, there are countries that have significantly higher ratios of debt to GDP than does the United States. Second, our current annual government deficit is relatively large, something that can significantly increase the size of the debt in a short period of time. Third, it appears as if the level of interest rates can make the picture much more attractive than the actual situation.

For example, if a country has a relatively large ratio of debt to GDP—as do Japan, Italy, Greece, and Belgium—then we would expect the net interest payments on the debt as a percent of GDP to also be relatively large. According to the last two columns in Table 4, this is indeed the case for Greece, Italy and Belgium, although Japan is nowhere near the top. The reason for this is that interest rates on Japan's national debt were barely above zero during 2004.

To some extent, the same applies the United States. Because of historically low interest rates in 2004, our net interest payments on the debt are much lower than they would otherwise be. So, if interest rates should bounce back to more normal levels, the cost of servicing the debt will become much higher—dramatically changing our standing in the last column of the table. Consequently, Table 4 lends support to the argument that low interest rates can disguise the seriousness of the situation and

make the burden of the debt appear to be much less than it might otherwise be. The main problem is that historically low interest rates are bound to rise—making things considerably worse.

In general, the issue of viewing either the debt or the deficit as being less of a problem because they can be alternatively expressed as a percent of GDP is somewhat of a red herring. An international comparison suggests that U.S. debt as a percent of GDP is not as bad as it could be, but current low interest rates are also masking the seriousness of the situation and delaying the day of reckoning. If interest rates should rise rapidly, then the day of reckoning may be closer than we think.

Managing a *Perpetual Debt*

The national debt is really *perpetual* debt, and perpetual debt has characteristics that make it different from normal debt. To see why it is perpetual debt, we start with the present value perpetual annuity equation, $PV = PMT/rate$, and then rearrange it to get $PMT = (PV)(rate)$.¹⁹ Now, we can use this equation to compute the dollar cost of the net interest on the national debt for any given year. Using 2004 as our example, we see that the annual net interest payment on the national debt (in billions) is $\$156.3 = (\$4,420.8)(0.0354)$ —and the same is true for any other year as well. With this in mind we now can address several issues that pertain to managing the national debt.

First of all, and in the short run, perpetual debt is generally easier to finance than is debt that has to be retired. To illustrate, payments on the national debt, unlike a home mortgage payment that is designed to reduce the principal, are not amortized. Instead, the national debt is simply serviced with the amount of interest paid in any year being a function of the size of the debt and the interest rates on the appropriate debt instruments. Were there to be a provision that required us to reduce the outstanding balance, as with the home mortgage payment, the annual payment would be higher and therefore more difficult to accommodate in the short run.

Second, and because there is no pressure to retire a perpetual debt—or at least no built-in mechanism like amortization that forces the principal to become smaller—there is a built-in bias for the size of the debt to increase. As long as the size of the debt is determined by the sum of the deficits minus the surpluses and as long as the deficits are numerous and the surpluses are few and far between—or if surpluses are offset by even larger deficits—then the

¹⁷The -4.7 percent for the U.S. in Table 4 is comparable to the -4.5 percent in column 3 of Table 2.

¹⁸Unfortunately, the OECD report does not show the Czech Republic and Hungary for either the middle or the right-hand columns.

¹⁹"PV" is the present value of an annuity, "PMT" is the periodic payment (usually monthly) on the annuity, and "rate" is the interest rate associated with the periodic payment.

debt will continue to grow. Consequently, even a significant political achievement like a balanced budget will not reduce the absolute size of the debt.

Third, the interest cost on the debt, the “rate” term in $PMT = (PV)(rate)$, is the most volatile component in the equation. If we look back at Figure 3, we see that the effective cost of the debt reached 9.2 percent in 1982. If that rate had prevailed in 2004, the net interest on the debt would have been \$406.7 billion instead of the \$156.3 billion shown in Table 1. This is admittedly a worst-case scenario, but the fact remains that higher interest rates increase the annual debt maintenance payment—a problem that is further compounded if the nominal size of the debt also increases over time.

Finally, we would observe that there are some significant opportunity costs to managing a perpetual national debt, especially if the debt becomes significantly large and the interest rate on the debt increases even modestly. In the short run, the opportunity costs of higher annual interest payments can be measured in terms of goods and services that cannot be purchased or provided because federal monies are instead used to service the debt. If the effective cost of the national debt goes up by just one percent in 2005, as was assumed in Table 3, then the additional cost of the debt will be \$60.9 billion—a sum larger than two-thirds of the expenditure categories shown in Table 1.

Summary and Conclusion

In FY2002, large federal budget deficits again became part of the economic and political landscape. To some extent, the resumption of deficit spending was predictable, especially in the wake of the Bush tax cuts and the defense expenditures necessitated by 9/11. On the other hand, the country had been looking forward to a ten-year, \$6 trillion stream of federal budget surpluses just before these events occurred, so the sudden return of massive deficits came somewhat as a shock.

At first, the combined half-trillion dollar deficits in FY2002-03 provided a welcome boost to an economy that was still trying to shake off the effects of the 2001 recession. As the economy recovered, however, successive deficits showed little signs of improvement. By March 2004, the CBO predicted that persistent deficits would increase the national debt by as much as \$2.5 trillion over the next ten years, an amount only half that forecast by a number of respected fiscal watchdog agencies and private economists from across the political spectrum. About the best face that could be put on the picture was to express the deficit and the debt as a percent of GDP—an exercise that improved the appearance of the numbers, but did nothing to address the fundamental underlying problems.

Mainstream economists have long argued that persistent deficit spending crowds private investors out of capital and loanable funds markets, thus raising interest rates and lowering long-term economic growth. An element that has largely been missing from the analysis—and the focus of this paper—is the impact of a short-term rise in interest rates on the federal budget. Specifically, it has been argued that even a modest increase in interest rates, defined here as a less than doubling of the levels that prevailed in 2004, would result in a situation where interest on the debt as a percent of GDP would either continually increase, using the Joint Statement assumptions, or would nearly double and then level off, using the CBO assumptions. These changes would increase the net interest cost of servicing the debt to the point where it could easily become the third or fourth largest item in the federal budget, an outcome that would have huge opportunity costs for any administration. These outcomes are based entirely on the CBO’s forecast that nominal GDP would continue to grow uninterrupted at an average annual rate of 4.62 percent through 2014—a duration and intensity of expansion unmatched in U.S. history.

These developments are also likely to have highly negative consequences for the American business sector. Higher long-term interest rates would discourage business spending on plant and equipment, and consumer spending on big-ticket items like housing and automobiles would be adversely impacted. Higher short-term rates would raise the cost of credit-card debt, and payments that could have been used for new purchases would instead be used to finance old ones—thereby further eroding the purchasing power of the consumer. Finally, consumers are likely to take another hit if the federal government cuts back on social programs like education, health, environment, and the like—in an effort to meet the new and higher net interest cost of servicing the debt.

This paper does not propose any particular solution to the problem of persistent deficits because the remedies—reducing expenditures, increasing taxes, or a combination of the two—are well known. Instead, the intent here is to point out the magnitude of the problem and the importance of dealing with it immediately—especially before the first wave of baby boomers puts additional stress on social programs like Medicare and Social Security. The national debt has not yet reached an unmanageable level, but all indications point to the fact that we have to address the issue as quickly as possible. This will take an enormous political will, courage, and public enlightenment to effect these changes, but our future economic welfare and the health of the American business sector may well depend on it. ■

REFERENCES

- Blejer, Mario I. and Adrienne Cheasty. 1991. "The Measurement of Fiscal Deficits: Analytical and Methodological Issues." *Journal of Economic Literature* (December) 1664-1678.
- Bureau of the Public Debt. 2004 "The Public Debt Online." <http://www.publicdebt.treas.gov/opd/opdpdodt.htm> (March 31).
- CNNMoney. 2004. "Snow: Deficits Do Matter." http://money.cnn.com/2004/06/08/news/newsmakers/summit_snow/ (June 8).
- Committee for Economic Development, The Concord Coalition, and the Center on Budget and Policy Priorities. 2003. "The Developing Crisis—Deficits Matter." Joint Statement. (September 29) 1-6.
- Council of Economic Advisers (CEA). 2004. *The Economic Report of the President*. Executive Office of the President.
- Eisner, Robert. 1992. "Deficits: Which, How Much, and So What?" *American Economic Review* (May) 295-298.
- Elmendorf, Douglas W. and Jeffrey B. Liebman. 2000. "Social Security Reform and National Saving in an Era of Budget Surpluses." *Brookings Papers on Economic Activity*. 2:1-71.
- Engen, Eric M. 2003. "Do Budget Deficits Matter?" Panelist remarks at a Brookings Macroeconomic Forum. Brookings Institution. (March 11) 1-28.
- Gale, William G. 2003. "Do Budget Deficits Matter?" Panelist remarks at a Brookings Macroeconomic Forum. Brookings Institution. (March 11) 1-28.
- Gale, William G. and Samara R. Potter. 2002. "An Economic Evaluation of the Economic Growth and Tax Relief and Reconciliation Act of 2001." *National Tax Journal* (March) 133-89.
- Lav, Iris J. and Andrew Brecher. 2004. "Passing Down the Deficit: Federal Policies Contribute to the Severity of the State Fiscal Crisis." Center on Budget and Policy Priorities. (May 12) 1-27.
- Office of Management and Budget (OMB). 2004. *The Budget for Fiscal Year 2005*, Historical Tables. Available at: <http://www.white-house.gov/omb/budget/fy2005/>.
- Organization for Economic Cooperation and Development (OECD). 2004. *Economic Outlook*. June.
- Patton, Judd W. 2001. "Federal Budget Deficits and the National Debt: Causes, Consequence and Cure!" Bellevue University Online. Available at <http://academic.bellevue.edu/~jpatton/macro/budget.html>.
- Penner, Rudolph G. 2003. "Do Budget Deficits Matter?" Panelist remarks at a Brookings Macroeconomic Forum. Brookings Institution. (March 11) 1-28.
- Rubin, Robert E., Peter R. Orszag, and Allen Sinai. 2004. "Sustained Budget Deficits: Longer-Run U.S. Economic Performance and the Risk of Financial and Fiscal Disarray." Paper presented at the AES-NAEFA joint session of the Allied Social Science Association Annual Meeting. (January 5) 1-20.
- Schultze, Charles L. 2003. "Do Budget Deficits Matter?" Panelist remarks at a Brookings Macroeconomic Forum. Brookings Institution. (March 11) 1-28.
- Wesbury, Brian S. and Maria A. Forres. 2003. "Why Deficits Matter Less Than You Think." Unpublished paper by Griffin, Kubik, Stephens & Thompson, Inc. (March 4) 1-3.

ERRATA

In Cliff Waldman, "The Labor Market in Post-Reform China: History, Evidence and Implications" in the October 2004 issue, Figures 3, 5, 6 and 9 mistakenly include the sources as "China Statistical Yearbook 2003 and United Nations Population Data." These references should be deleted. The correct source, as stated in the text, is *China Statistical Yearbook 2002*. United Nations data had nothing to do with these figures. Also, "National Bureau of Statistics of China. 2003. *China Statistical Yearbook 2003, number 22*. China Statistics Press" should be deleted from the References. These corrections have already been made in the article on www.nabe.com.