

An Analysis of the President's Budgetary Proposals for Fiscal Year 2009

The collage features several key elements:

- Website Screenshot:** A screenshot of the Office of Management and Budget (OMB) website. The header reads "OFFICE OF MANAGEMENT AND BUDGET". The main content area is titled "Budget of the United States Government Fiscal Year 2009" and includes a section for "The Budget Documents".
- CD-ROMs:** Two blue CD-ROMs are shown. The top one is titled "Produced by the U.S. Government Printing Office, Washington, DC" and "To order, call: (202) 512-1800". The bottom one is titled "THE BUDGET OF THE U.S. GOVERNMENT FISCAL YEAR 2009" and "EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF MANAGEMENT AND BUDGET February 2008".
- Title Page:** A large title page for "FISCAL YEAR 2009 BUDGET OF THE U.S. GOVERNMENT" is displayed in the center.
- Logos:** The official seal of the Executive Office of the President of the United States is visible in the bottom right corner of the collage.



MARCH 2008



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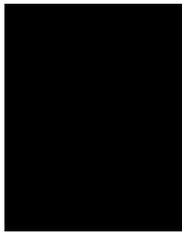
March 2008

Notes

Unless otherwise indicated, the years referred to in this report are fiscal years.

Numbers in the text and tables may not add up to totals because of rounding.

Supplemental data for this analysis are available on the Congressional Budget Office's Web site (www.cbo.gov), under "Current Budget Projections."



Preface

This Congressional Budget Office (CBO) analysis of the President's budgetary proposals for fiscal year 2009—prepared at the request of the Senate Committee on Appropriations—was produced by the staffs of CBO's Budget Analysis, Macroeconomic Analysis, and Tax Analysis Divisions under the supervision of Peter Fontaine, Robert Dennis, and Thomas Woodward, respectively. CBO prepared the baseline revenue estimates and the estimates of selected revenue proposals; the Joint Committee on Taxation (JCT) prepared most of the estimates of the President's revenue proposals. The report expands on CBO's preliminary analysis, which was released on March 3, 2008.

Barry Blom of CBO's Projections Unit was the lead author for Chapter 1 under the supervision of Jeffrey Holland; Pamela Greene and Robert Arnold wrote major portions of that chapter. Benjamin Page of the Macroeconomic Analysis Division coordinated the economic analysis and wrote Chapter 2 and Appendixes B and C under the supervision of Douglas Hamilton. Robert Arnold, Paul Burnham, Ufuk Demiroglu, Mark Lasky, Larry Ozanne, Frank Russek, Marika Santoro, Kurt Seibert, and Sven Sinclair carried out the modeling. Amber Marcellino wrote Appendix A with assistance from Pamela Greene. The contributors to the revenue and spending projections are listed in Appendix D.

Kate Kelly and Leah Mazade edited the report. Maureen Costantino designed and produced the cover and prepared the report for publication. Lenny Skutnik printed the initial copies, Linda Schimmel coordinated the print distribution, and Simone Thomas prepared the electronic version for CBO's Web site (www.cbo.gov).



Peter R. Orszag
Director

March 2008



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CBO's Estimates of the President's Budget for Fiscal Year 2009

At the request of the Senate Committee on Appropriations, the Congressional Budget Office (CBO) has analyzed the President's budget request for fiscal year 2009. The analysis is based on CBO's own economic assumptions and estimating techniques, incorporating the Joint Committee on Taxation's (JCT's) estimates for provisions that affect the tax code. This document provides more detail about the President's budgetary proposals and about CBO's updated baseline budget projections than did the preliminary report that CBO released on March 3.¹

Overview of CBO's Estimates

If the President's proposals were enacted, the government would record a deficit of \$396 billion in 2008, equal to 2.8 percent of gross domestic product (GDP). By comparison, the deficit in 2007, which totaled \$162 billion, was 1.2 percent of GDP (see Table 1-1). Relative to CBO's baseline budget projections, the proposals in the President's budget request would reduce revenues in 2008 by \$9 billion and boost outlays by \$30 billion (mostly for military operations in Iraq and Afghanistan). As a result,

1. The estimates presented in that earlier report are unchanged in this more detailed analysis. In particular, this analysis uses preliminary estimates of the Joint Committee on Taxation that were available as of March 3, 2008. JCT subsequently revised a few estimates, as reflected in Joint Committee on Taxation, *Description of Revenue Provisions Contained in the President's Fiscal Year 2009 Budget Proposal*, JCS-1-08 (March 7, 2008). Those revisions, which primarily affect the proposal for a new deduction for taxpayers who purchase health insurance, were not incorporated in CBO's analysis. In total, the revisions increase the projected revenue loss from all tax proposals by about \$2 billion between 2009 and 2018 and increase outlays over the same period by an additional \$10 billion. The revisions increase the projected deficit under the President's proposals by about \$11 billion over the 10-year period.

the deficit for this year would be \$39 billion larger than the deficit CBO anticipates under current law.

Estimates for the 2009–2018 Period

In 2009, the deficit under the President's budget would fall to 2.3 percent of GDP, or \$342 billion, CBO estimates—\$136 billion more than the baseline deficit of \$207 billion that CBO projects under current laws and policies. That difference is largely attributable to proposals that would affect revenues and defense spending.

In 2009, the President's policies would raise discretionary spending for national defense by \$50 billion above the amount in CBO's baseline. That increase stems primarily from additional appropriations—mostly for military operations in Iraq and Afghanistan and for other activities related to the war on terrorism—that the President is requesting for later this year, much of which would be spent in 2009 and beyond.² Other spending under the President's proposals would be \$9 billion below the amount in the baseline (largely as a result of proposed savings in the Medicare program).

Under the President's budget, revenues would be \$94 billion lower in 2009 than the amount projected in the baseline. The President is proposing to extend higher exemption levels for the alternative minimum tax (AMT) through the end of 2008. That change would mitigate some of the effects of the tax and thus reduce revenues by an estimated \$70 billion in 2009. Other proposed changes in tax policies would reduce revenues, on net, by another \$24 billion.

2. The President has requested an additional \$101 billion in defense funding for 2008 for military operations in Iraq and Afghanistan and for other activities related to the war on terrorism. CBO estimates that more than \$35 billion of that funding will be spent in 2009.

Table 1-1.**Comparison of Projected Deficits and Surpluses in CBO's Estimate of the President's Budget and in CBO's March 2008 Baseline**

(Billions of dollars)

	Actual 2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
CBO's Estimate of the President's Budget for 2009														
On-Budget Deficit	-343	-592	-525	-375	-346	-236	-269	-252	-243	-263	-201	-121	-1,751	-2,830
Off-Budget Surplus ^a	181	197	183	193	218	236	248	232	214	200	198	194	1,076	2,114
Total Deficit (-) or Surplus	-162	-396	-342	-182	-129	*	-21	-20	-29	-64	-3	73	-674	-717
CBO's Baseline														
On-Budget Deficit	-343	-553	-403	-421	-320	-133	-174	-158	-147	-172	-116	-44	-1,451	-2,088
Off-Budget Surplus ^a	181	197	196	208	227	238	244	249	251	251	250	246	1,112	2,358
Total Deficit (-) or Surplus	-162	-357	-207	-213	-93	105	70	90	104	79	134	202	-339	270
Difference (President's budget minus baseline)^b														
On-Budget Deficit	n.a.	-39	-122	46	-26	-102	-95	-93	-96	-91	-85	-77	-300	-743
Off-Budget Surplus ^a	n.a.	0	-13	-15	-9	-2	4	-16	-37	-52	-52	-52	-35	-244
Total Deficit (-) or Surplus	n.a.	-39	-136	31	-35	-105	-91	-110	-133	-143	-136	-129	-336	-987
Memorandum:														
Total Deficit (-) or Surplus as a Percentage of GDP														
CBO's estimate of the														
President's budget	-1.2	-2.8	-2.3	-1.2	-0.8	**	-0.1	-0.1	-0.1	-0.3	**	0.3	-0.8	-0.4
CBO's baseline	-1.2	-2.5	-1.4	-1.4	-0.6	0.6	0.4	0.5	0.5	0.4	0.6	0.9	-0.4	0.1
Debt Held by the Public as a Percentage of GDP														
CBO's estimate of the														
President's budget	36.8	38.0	39.0	38.3	37.1	35.5	34.1	32.8	31.7	30.7	29.5	28.1	n.a.	n.a.
CBO's baseline	36.8	37.7	37.8	37.3	36.0	33.8	32.0	30.3	28.5	27.0	25.4	23.5	n.a.	n.a.
Probability of a Budget Deficit (Percent)														
CBO's estimate of the														
President's budget	n.a.	100	95	73	64	50	52	c	c	c	c	c	n.a.	n.a.
CBO's baseline	n.a.	100	84	76	60	41	45	c	c	c	c	c	n.a.	n.a.

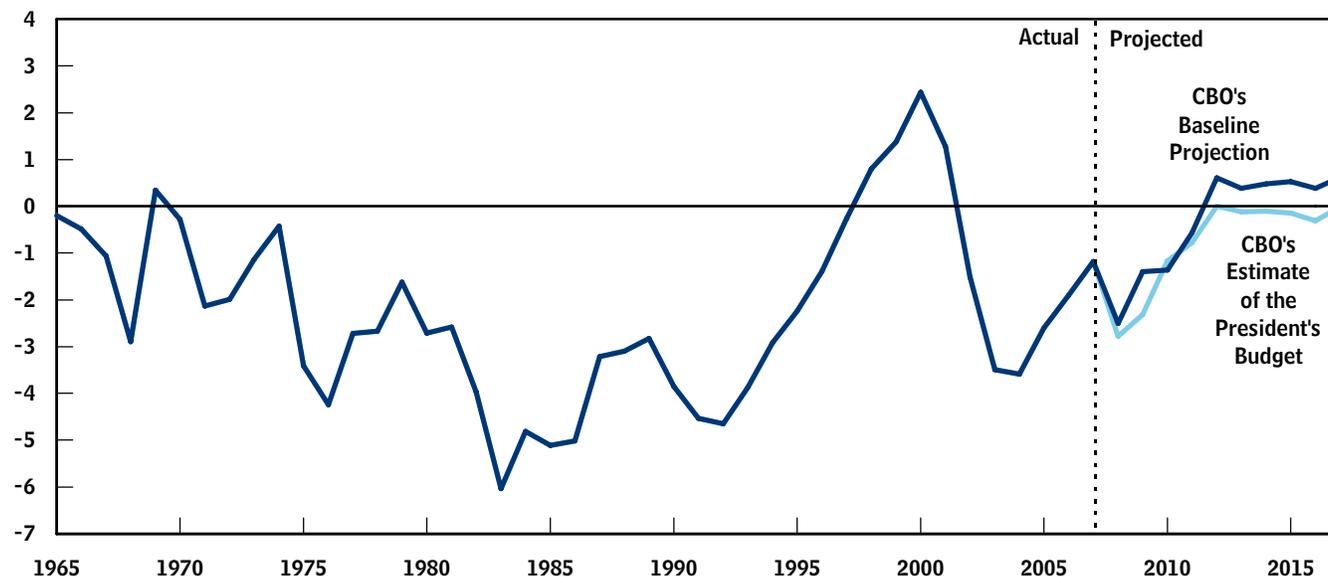
Source: Congressional Budget Office.

Note: * = between -\$500 million and zero; ** = between -0.05 percent and zero; GDP = gross domestic product; n.a. = not applicable.

- Off-budget surpluses comprise surpluses in the Social Security trust funds as well as the net cash flow of the Postal Service.
- Negative numbers indicate an increase relative to the baseline deficit or a decrease relative to the baseline surplus.
- Probabilities for years after 2013 cannot be calculated because of an insufficient history of past comparisons between projections and outcomes.

Figure 1-1.**Total Deficit or Surplus, 1965 to 2018**

(Percentage of gross domestic product)



Source: Congressional Budget Office.

For years after 2009, the President's budget is presented in less detail. For discretionary spending, the request for 2010 through 2013 is provided only in aggregate terms (which CBO used to calculate funding totals for defense and nondefense spending), and the budget does not contain year-by-year estimates of spending and revenues after 2013. It does, however, specify the total effect of proposed changes in laws affecting taxes and mandatory spending for the 10-year period through 2018. To determine the impact of the President's proposals, CBO, with assistance from JCT, developed its own estimates for policies affecting revenues and mandatory spending. It estimated discretionary outlays for the 2014–2018 period by projecting the amount of discretionary budget authority that the President recommended for 2013 and adjusting that amount for inflation.

Under the President's proposals, the deficit would steadily decline from 2009 through 2012; by CBO's estimates, the budget would be balanced in that latter year and remain relatively close to balance through 2018 (see Figure 1-1). The cumulative deficit between 2009 and 2018 (the current 10-year projection period) would total \$717 billion (0.4 percent of GDP). CBO's estimates reflect the President's proposal for \$70 billion in funding

for military operations in Iraq and Afghanistan in 2009 but no additional funding thereafter, combined with a substantial decline in discretionary spending relative to the size of the economy. The estimates also reflect the absence of any changes to the AMT beyond the proposed one-year extension of higher exemption levels. Under the President's policies, debt held by the public would rise from 37 percent of GDP in 2007 to 39 percent in 2009, and then gradually fall to 28 percent of GDP by 2018.

On the basis of previous differences between projections and budget outcomes, CBO calculated the likelihood that the budget would be balanced under two sets of conditions: the assumptions embodied in its baseline projections (that current laws and policies remain in place) and its estimates of revenues and outlays under the President's proposals. Using the assumptions underlying its baseline, CBO calculates that the probability that the budget will record a deficit in 2012 is roughly 40 percent and the probability that it will be balanced (or show a surplus) in that year is 60 percent. If the President's policies were enacted in their entirety and no other legislation affecting spending or revenues was enacted in the next five years, the chances of either a deficit or a surplus emerging in 2012 would each be 50 percent.

Table 1-2.**CBO's Estimate of the President's Budget for 2009**

	Actual 2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
In Billions of Dollars														
Revenues														
On-budget	1,933	1,870	2,017	2,182	2,278	2,409	2,495	2,617	2,750	2,901	3,062	3,234	11,380	25,945
Off-budget	635	667	682	718	762	806	847	885	926	970	1,016	1,063	3,815	8,674
Total	2,568	2,537	2,699	2,900	3,040	3,215	3,342	3,503	3,676	3,871	4,077	4,297	15,195	34,619
Outlays														
Mandatory spending	1,451	1,578	1,653	1,712	1,810	1,862	1,997	2,132	2,286	2,481	2,603	2,727	9,034	21,262
Discretionary spending	1,042	1,121	1,171	1,121	1,082	1,061	1,069	1,086	1,110	1,141	1,163	1,185	5,504	11,189
Net interest	237	234	217	249	277	293	297	304	310	314	314	312	1,332	2,885
Total	2,730	2,933	3,041	3,082	3,169	3,215	3,363	3,522	3,705	3,935	4,080	4,224	15,870	35,336
On-budget	2,277	2,463	2,542	2,557	2,624	2,645	2,763	2,869	2,993	3,165	3,262	3,355	13,131	28,775
Off-budget	454	470	499	525	545	570	600	653	712	770	818	869	2,739	6,560
Deficit (-) or Surplus	-162	-396	-342	-182	-129	*	-21	-20	-29	-64	-3	73	-674	-717
On-budget	-343	-592	-525	-375	-346	-236	-269	-252	-243	-263	-201	-121	-1,751	-2,830
Off-budget	181	197	183	193	218	236	248	232	214	200	198	194	1,076	2,114
Debt Held by the Public	5,035	5,406	5,765	5,965	6,112	6,128	6,166	6,202	6,245	6,323	6,340	6,280	n.a.	n.a.
Memorandum:														
Gross Domestic Product	13,671	14,242	14,773	15,589	16,490	17,284	18,077	18,885	19,713	20,569	21,457	22,386	82,213	185,223
As a Percentage of Gross Domestic Product														
Revenues														
On-budget	14.1	13.1	13.7	14.0	13.8	13.9	13.8	13.9	14.0	14.1	14.3	14.4	13.8	14.0
Off-budget	4.6	4.7	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.6	4.7
Total	18.8	17.8	18.3	18.6	18.4	18.6	18.5	18.5	18.6	18.8	19.0	19.2	18.5	18.7
Outlays														
Mandatory spending	10.6	11.1	11.2	11.0	11.0	10.8	11.0	11.3	11.6	12.1	12.1	12.2	11.0	11.5
Discretionary spending	7.6	7.9	7.9	7.2	6.6	6.1	5.9	5.8	5.6	5.5	5.4	5.3	6.7	6.0
Net interest	1.7	1.6	1.5	1.6	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.4	1.6	1.6
Total	20.0	20.6	20.6	19.8	19.2	18.6	18.6	18.7	18.8	19.1	19.0	18.9	19.3	19.1
On-budget	16.7	17.3	17.2	16.4	15.9	15.3	15.3	15.2	15.2	15.4	15.2	15.0	16.0	15.5
Off-budget	3.3	3.3	3.4	3.4	3.3	3.3	3.3	3.5	3.6	3.7	3.8	3.9	3.3	3.5
Deficit (-) or Surplus	-1.2	-2.8	-2.3	-1.2	-0.8	**	-0.1	-0.1	-0.1	-0.3	**	0.3	-0.8	-0.4
On-budget	-2.5	-4.2	-3.6	-2.4	-2.1	-1.4	-1.5	-1.3	-1.2	-1.3	-0.9	-0.5	-2.1	-1.5
Off-budget	1.3	1.4	1.2	1.2	1.3	1.4	1.4	1.2	1.1	1.0	0.9	0.9	1.3	1.1
Debt Held by the Public	36.8	38.0	39.0	38.3	37.1	35.5	34.1	32.8	31.7	30.7	29.5	28.1	n.a.	n.a.

Source: Congressional Budget Office.

Note: * = between -\$500 million and zero; ** = between -0.05 percent and zero; n.a. = not applicable.

Under the President's proposals, revenues as a share of GDP would total 17.8 percent this year and 18.3 percent in 2009, CBO estimates (see Table 1-2). That share would climb to 18.6 percent of GDP in 2010 and remain near that level through 2015, gradually increasing thereafter and reaching 19.2 percent of GDP in 2018. At that level, revenues would be about 1 percentage point above their average share of GDP for the past 40 years. The projected future growth of revenues as a percentage of GDP reflects multiple factors: an increase in effective tax rates stemming from the progressive structure of the tax code combined with increases in real (inflation-adjusted) income; the withdrawal of tax-deferred retirement savings as workers with 401(k) plans and traditional individual retirement accounts begin to retire in increasing numbers; and the fact that the AMT is not indexed for inflation. According to estimates by JCT, the President's proposal to change the tax treatment of health insurance premiums and out-of-pocket spending for health care would also contribute to the growth of revenues as a share of GDP.

Outlays under the President's policies would reach 20.6 percent of GDP this year and remain at that level next year, equal to their average over the past 40 years. Total outlays would fall to about 19 percent of GDP over the latter part of the projection period. Spending for mandatory programs would grow by an average of 5.7 percent annually through 2018, faster than the projected 4.7 percent average annual growth of nominal GDP over that period. By contrast, discretionary outlays would decline by \$52 billion over the next five years; measured as a percentage of GDP, they would fall from 7.9 percent in 2009 to 5.9 percent in 2013 (a figure lower than any recorded for such spending over the past four decades).

The Impact of the President's Proposals on the Budget Outlook

CBO measures the potential budgetary effects of proposed changes in policy against its baseline projections, which—in keeping with long-standing procedures—are constructed under the assumption that present laws and policies remain unchanged. Specifically, the baseline reflects the assumption that various tax provisions (including those affecting the AMT) will expire as scheduled, that most mandatory programs will continue to operate as they do under current law, and that all discretionary funding for the current year (including any supplemental appropriations) will grow at the rate of inflation in future years.

From 2009 to 2013, the cumulative deficit under the President's policies would be \$336 billion larger than the deficit projected under the current-law assumptions embodied in CBO's baseline (see Table 1-3). Over the five-year period, proposed tax policies—such as extending the expiring provisions originally enacted in the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA)—would reduce revenues relative to the baseline by an estimated \$777 billion, mostly from 2011 through 2013.³ In addition, spending under the President's proposals would be \$442 billion lower: Discretionary spending would be \$340 billion below CBO's baseline projection—a reduction about equally divided between defense and nondefense programs—and mandatory spending would be \$143 billion below the baseline amount. (The impact of the President's policies on discretionary spending arises in part because the budget includes only \$70 billion in funding for military operations in Iraq and Afghanistan for 2009 and no funding for subsequent years, whereas the baseline projections assume annual funding of about \$90 billion, adjusted for inflation.) Overall, as a result of a larger cumulative deficit under the President's proposals, net interest from 2009 to 2013 would be \$41 billion higher than CBO's baseline projection.

Under the tax and spending assumptions embodied in the baseline, deficits would be followed by surpluses in the vicinity of 0.5 percent of GDP from 2012 on, CBO projects. By comparison, under the President's policies, the budget would be close to balance for most of those years. Between 2009 and 2018, the President's proposals would reduce revenues by more than \$2.1 trillion (6 percent) from baseline levels, CBO and JCT estimate, mainly by extending tax provisions that are scheduled to expire by the end of December 2010. Over the 10-year period, proposals in the President's budget, if enacted, would lower mandatory spending relative to the baseline by a total of \$143 billion (0.7 percent) and lower discretionary spending by \$1.2 trillion (9.6 percent). The deficits that would result under the President's policies would require additional federal borrowing; debt-service costs on that borrowing would add another \$207 billion to the cumulative deficit between 2009 and 2018. On balance,

3. For proposals that would amend the Internal Revenue Code, CBO is generally required by law to use estimates provided by JCT.

Table 1-3.**CBO's Estimate of the Effect of the President's Budget on Baseline Deficits or Surpluses**

(Billions of dollars)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
Total Deficit (-) or Surplus as Projected in CBO's March 2008 Baseline	-357	-207	-213	-93	105	70	90	104	79	134	202	-339	270
Effect of the President's Proposals													
Revenues													
Extension of expiring EGTRRA and JGTRRA provisions													
General tax rates, child tax credit, and tax brackets ^a	0	0	0	-96	-152	-155	-158	-162	-167	-171	-176	-403	-1,237
Estate and gift taxes	0	-1	-2	-31	-69	-77	-84	-91	-97	-105	-112	-181	-670
Tax rates on dividends and capital gains	0	*	-2	-18	-21	-42	-43	-45	-47	-49	-51	-82	-318
Expensing for small businesses	0	0	0	-3	-6	-4	-3	-2	-2	-1	-1	-13	-23
Education, retirement, and other provisions	0	0	0	-1	-2	-2	-2	-3	-3	-3	-3	-5	-18
Subtotal, proposed extensions	0	-1	-4	-148	-250	-280	-291	-303	-316	-330	-344	-683	-2,266
Health insurance taxation and standard deduction ^a	0	-17	-13	5	24	45	46	56	75	94	115	43	429
Research and experimentation tax credit	-3	-5	-6	-8	-9	-10	-11	-12	-13	-15	-16	-38	-105
Air transportation taxes	0	0	-7	-8	-9	-9	-10	-10	-11	-11	-12	-33	-87
AMT extension	-6	-70	15	0	0	0	0	0	0	0	0	-55	-55
Other proposals ^a	*	-1	-1	-1	-5	-3	-1	-1	-2	-2	-2	-12	-21
Total Effect on Revenues	-9	-94	-16	-161	-248	-258	-268	-271	-267	-263	-258	-777	-2,105
Outlays													
Mandatory													
Medicare	*	-9	-23	-34	-40	-46	-52	-58	-65	-73	-81	-151	-481
Social Security individual accounts	0	0	0	0	1	1	23	47	67	72	78	2	287
Earned income and child tax credits	0	3	1	*	20	19	18	17	17	16	16	42	126
Medicaid and SCHIP	*	-2	-1	-2	-3	-3	-3	-3	-2	-2	-2	-11	-24
PBGC premiums	0	*	-2	-2	-2	-2	-2	-2	-2	-2	-2	-9	-19
Social Services Block Grant program	0	0	-1	-2	-2	-2	-2	-2	-2	-2	-2	-7	-15
Other proposals	1	-1	-1	-3	-1	-1	-2	*	-1	-3	-4	-8	-18
Subtotal, mandatory	1	-11	-28	-43	-27	-34	-20	*	11	6	2	-143	-143
Discretionary													
Defense	28	50	-2	-48	-71	-81	-85	-88	-90	-92	-94	-151	-599
Nondefense	1	-1	-23	-41	-56	-68	-74	-76	-79	-82	-84	-189	-583
Subtotal, discretionary	29	49	-25	-89	-127	-148	-159	-164	-169	-173	-178	-340	-1,183
Net interest	*	3	5	7	11	15	21	27	33	40	46	41	207
Total Effect on Outlays	30	41	-48	-125	-143	-167	-158	-138	-125	-127	-129	-442	-1,119
Total Impact on the Deficit or Surplus^b	-39	-136	31	-35	-105	-91	-110	-133	-143	-136	-129	-336	-987
Total Deficit (-) or Surplus Under the President's Proposals	-396	-342	-182	-129	*	-21	-20	-29	-64	-3	73	-674	-717
Memorandum:													
Total Deficit (-) or Surplus Under the President's Proposals as Estimated by OMB	-410	-407	-160	-95	48	29	n.a.	n.a.	n.a.	n.a.	n.a.	-585	n.a.

Sources: Congressional Budget Office; Joint Committee on Taxation.

Note: * = between -\$500 million and \$500 million; EGTRRA = Economic Growth and Tax Relief Reconciliation Act of 2001; JGTRRA = Jobs and Growth Tax Relief Reconciliation Act of 2003; AMT = alternative minimum tax; SCHIP = State Children's Health Insurance Program; PBGC = Pension Benefit Guaranty Corporation; n.a. = not applicable; OMB = Office of Management and Budget.

- a. The estimates shown include the effect on revenues only; however, refundable earned income and child tax credits are also affected and shown in the outlay section of the table.
- b. Negative numbers indicate an increase in the deficit or a decrease in the surplus.

the President's proposals would reduce outlays over the 10-year period by \$1.1 trillion relative to CBO's baseline projections.

The Impact of the President's Proposals on the Economy

The estimates presented in this chapter do not take into consideration any impact that the President's budgetary proposals might have on the economy. Yet such an impact could influence how the policy changes would affect spending and revenues. Therefore, CBO has also prepared a macroeconomic analysis of the President's budget, which is described in Chapter 2. That assessment uses various models to indicate the range of possible economic and budgetary effects of the President's proposals. On the basis of that analysis, CBO has concluded that if the President's proposals were enacted, the macroeconomic effects—and their resulting budgetary impact—would be relatively modest when measured against the size of the federal budget and the U.S. economy over the next 10 years.

Comparison of CBO's and the Administration's Estimates

CBO's estimate of how the President's budget would affect the deficit in 2008 is similar to the Administration's, differing by \$14 billion (see Table 1-4). Whereas CBO anticipates a deficit of \$396 billion for this year, the Administration predicts a shortfall of \$410 billion; nearly all of the discrepancy results from differing projections of revenues. In 2008, CBO estimates, total revenues under the President's policies would be \$16 billion higher than the Administration projects. (That difference is partially offset by an estimate of outlays that is \$2 billion above that of the Administration.)

For 2009, CBO's and the Administration's estimates of the deficit are \$65 billion apart. CBO calculates a deficit of \$342 billion under the President's budget for next year, whereas the Administration expects a deficit of \$407 billion. The difference arises in part because CBO's estimate of discretionary spending for 2009 is \$41 billion below that of the Administration. About three-quarters of that difference stems from CBO's lower estimate of defense outlays. In addition, CBO's estimate of net interest costs is \$43 billion less than the Administration's, largely because CBO forecasts lower interest rates. In the other direction, CBO's estimate of mandatory outlays for 2009 is \$17 billion above the Administration's; about

\$10 billion of that amount stems from CBO's higher estimate of unemployment insurance benefits.

Although the two sets of estimates continue to differ after 2009, the variations are relatively small; over the 2009–2013 period, differences in deficit estimates average about \$40 billion a year in absolute terms, equivalent to about 1.4 percent of spending. From 2010 through 2013, the Administration anticipates either surpluses or smaller deficits than CBO foresees. In total, CBO's estimate of the cumulative deficit over the 2009–2013 period is \$90 billion above that of the Administration, a difference equal to about 0.1 percent of GDP. (The Administration did not provide budget estimates beyond 2013.) CBO's estimate of revenues for the five-year period is \$210 billion, or 1.4 percent, lower than the Administration's estimate, and its estimate of outlays is \$121 billion, or 0.8 percent, lower. (For a more detailed discussion of the differences between CBO's and the Administration's projections, see the later section titled "Differences Between CBO's and the Administration's Economic Forecasts and Budget Estimates," beginning on page 21.)

CBO's Most Recent Baseline Budget Projections

In conjunction with its analysis of the President's budget, CBO routinely updates its baseline budget projections, which incorporate the assumption that current tax and spending policies remain the same for the next 10 years. Those revisions to the baseline take into account new information gleaned from the President's budget and other sources (CBO refers to such changes as technical revisions) as well as legislation enacted since the completion of the previous baseline, in January.⁴ In addition, CBO has updated its economic forecast, which also affects its projections of revenues and outlays.

CBO now estimates that the deficit for 2008—in the absence of further legislation affecting spending or revenues—will reach \$357 billion, up from the \$219 billion it projected in January. (Additional funding expected this year for military operations in Iraq and Afghanistan would add to that total.) The increase in the estimated deficit results primarily from enactment of the Economic Stimulus Act of 2008 (Public Law 110-185), which gives tax rebates to individual tax filers who satisfy specific income requirements and provides special depreciation

4. For CBO's previous baseline budget projections, see Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2008 to 2018* (January 2008).

Table 1-4.**Differences Between CBO's and the Administration's Estimates of the President's Budget, by Source**

(Billions of dollars)

	2008	2009	2010	2011	2012	2013	Total, 2009- 2013
Administration's Estimate							
Deficit (-) or Surplus Under the President's Proposals	-410	-407	-160	-95	48	29	-585
Sources of Differences Between CBO and the Administration							
Revenue Differences							
Economic	-13	-63	-63	-66	-62	-76	-331
Technical	<u>29</u>	<u>62</u>	<u>32</u>	<u>30</u>	<u>7</u>	<u>-10</u>	<u>120</u>
Total Revenue Differences	16	-1	-31	-37	-55	-86	-210
Outlay Differences							
Mandatory							
Economic	1	7	*	-4	-6	-11	-15
Technical	<u>26</u>	<u>10</u>	<u>1</u>	<u>-4</u>	<u>2</u>	<u>-26</u>	<u>-17</u>
Subtotal, mandatory	27	17	1	-8	-5	-37	-31
Discretionary (Technical)	-15	-41	21	22	5	7	15
Net interest							
Economic	-13	-41	-26	-16	-6	-6	-96
Technical	<u>3</u>	<u>-2</u>	<u>-5</u>	<u>-1</u>	<u>-1</u>	<u>*</u>	<u>-9</u>
Subtotal, net interest	-10	-43	-31	-17	-7	-6	-104
Total Outlay Differences	2	-67	-9	-3	-7	-36	-121
All Differences^a	14	65	-22	-34	-48	-51	-90
CBO's Estimate							
Deficit Under the President's Proposals	-396	-342	-182	-129	*	-21	-674
Memorandum:							
Total Economic Differences ^a	-1	-29	-37	-46	-49	-59	-221
Total Technical Differences ^a	16	94	15	12	1	8	131

Sources: Congressional Budget Office; Joint Committee on Taxation.

Notes: Technical differences are those that are not related to legislation or economic assumptions. The Administration did not provide budget estimates beyond 2013.

* = between -\$500 million and \$500 million.

a. Positive numbers denote that such differences cause CBO's estimate of the deficit to be lower than the Administration's estimate.

allowances to businesses. CBO, on the basis of JCT's estimates, expects that the stimulus legislation will add \$152 billion to the deficit for 2008 and \$16 billion to the deficit for 2009.

CBO's current baseline projections of the deficit for 2009 and the cumulative surplus for the 2009–2018 period are virtually unchanged from its January projections. Under the assumption that current policies continue over the next 10 years, CBO projects a total baseline surplus of \$270 billion from 2009 through 2018, down slightly from its previous projection of \$274 billion. (For more information about recent revisions to CBO's baseline, see Appendix A.)

Policy Proposals Affecting Revenues

The President is proposing changes to the tax code that in total would reduce revenues over the next decade relative to the amounts projected under current law. Those proposals include the extension of numerous expiring tax provisions and a variety of new tax incentives. The changes that would have the biggest budgetary impact involve provisions originally enacted in EGTRRA and JGTRRA; other proposals that would have significant budgetary effects involve the AMT, the tax treatment of health insurance premiums and medical expenses, the research and experimentation tax credit, and the financing of the Airport and Airway Trust Fund.

Using JCT's estimates for revenue provisions that affect the tax code, CBO estimates that if all of the President's proposals were enacted, they would reduce revenues by \$9 billion this year, by \$94 billion in 2009, and by \$2.1 trillion over the 2009–2018 period (see Table 1-3 on page 6). The tax proposals would also increase mandatory outlays for refundable tax credits by \$126 billion through 2018, by JCT's estimates.⁵

Permanent Extension of Provisions in EGTRRA and JGTRRA

The President proposes to make permanent various provisions that were originally enacted in EGTRRA and JGTRRA and that are currently set to expire at the end of December 2010. The proposals with the largest budgetary impact relate to changes in tax rates on income, an

increase in the child tax credit, and changes to income tax brackets designed to provide relief from the so-called marriage penalty. Permanently extending all of those provisions would reduce revenues by \$1.2 trillion from 2009 to 2018, JCT estimates, and increase outlays by \$145 billion over that period.

The President also proposes to permanently repeal estate and gift taxes after 2010, which JCT estimates would reduce revenues by \$670 billion over the 2009–2018 period. The President's proposal to permanently extend tax rates on capital gains and dividends at 2010 levels would reduce revenues by \$318 billion over the 10-year period, JCT estimates. Permanently extending other provisions, including tax provisions related to investments by small businesses and educational expenses would reduce revenues by an additional \$41 billion and increase outlays for refundable tax credits by \$2 billion between 2009 and 2018, JCT estimates.

In all, the proposals to permanently extend various tax provisions originally enacted in EGTRRA and JGTRRA would lower revenues relative to CBO's baseline projections by an estimated \$2.3 trillion through 2018. They would also increase outlays for refundable tax credits by \$147 billion over that period.

Changes to the Alternative Minimum Tax

The AMT exists alongside the regular income tax but includes a more limited set of exemptions, deductions, and tax credits than normally applies under the regular income tax. The taxpayer must calculate the amount owed under the AMT and under the regular income tax—and pay the higher of the two. The exemption amounts that taxpayers can use for the AMT calculation are set by law and are not indexed for inflation. EGTRRA and JGTRRA reduced income tax liabilities under the regular income tax through the end of 2010 but made adjustments to the AMT for a shorter period.

Since 2001, policymakers have amended the tax code several times to temporarily raise the amount of income that is exempt from the alternative minimum tax. The AMT exemption reverted to pre-EGTRRA levels at the beginning of calendar year 2008, which will cause an estimated 27 million people to be liable for tax under the AMT this year (up from 4 million people in 2007). In addition, the AMT will restrict the use this year of some nonrefundable personal tax credits, such as the higher education credits and the child and dependent care credit. The President's

5. An income tax credit is refundable if the taxpayer receives a refund when the allowable credit exceeds the amount of income tax owed. Such refunds are recorded in the budget as outlays.

budget proposes to continue for one year (through the end of 2008) both the unrestricted use of those personal tax credits under the AMT and higher AMT exemption levels. The proposal would reduce revenues by \$6 billion in 2008 and by a total of \$55 billion in 2009 and 2010, JCT estimates.

Establishment of a Standard Income Tax Deduction for Taxpayers Who Purchase Health Insurance

Among the President's budgetary proposals is a plan to change the tax treatment of health insurance premiums and out-of-pocket costs, replacing the current system of exclusions and deductions with new standard deductions of \$15,000 for taxpayers who have family coverage and \$7,500 for those who have single coverage. Those deductions would apply for both income and payroll taxes and would be available to all taxpayers who purchased insurance that met a minimum standard of coverage. After 2013, Medicare enrollees who were actively employed and receiving health coverage from an employer would be allowed to take the new standard deduction.

Under current law, the payments that employers make for employment-based health insurance (and most payments by employees) are excluded from taxable income in the calculation of income and payroll taxes, whereas income that individuals use to buy non-employment-based health insurance is generally taxed. Current law offers employees another tax advantage as well: The income that funds their spending from employer-sponsored flexible spending accounts and health savings accounts is exempt from both payroll and individual income taxes. A further tax benefit under current law is that people who itemize deductions on their tax returns can deduct medical expenses that exceed 7.5 percent of their adjusted gross income.

The President's proposal would replace most of those tax exclusions and deductions with a standard health deduction for taxpayers who were not enrolled in Medicare and who purchased qualifying health insurance. The proposed deductions of \$15,000 for purchases of family coverage and \$7,500 for single coverage would be indexed using the consumer price index. In addition, the proposal would reduce the phase-out rate for the earned income tax credit for taxpayers who had qualifying children, dropping the rate to 15 percent from between 15.98 percent and 21.06 percent. That part of the proposal would lessen the amount of the credit that low-income workers might lose if health insurance premiums were counted as

earnings. Although the itemized deduction for medical expenses in excess of 7.5 percent of adjusted gross income would be eliminated for most taxpayers, those covered by Medicare would still be eligible to claim it; after 2013, taxpayers who were not eligible for the standard health deduction would be allowed to claim the itemized deduction.

If the proposal took effect on January 1, 2009, it would increase revenues by \$429 billion through 2018, JCT estimates. (Of that amount, \$24 billion would be off-budget because the proposal would generate additional payroll taxes.)⁶ The change in policy, through its impact on the earned income and child tax credits, would also reduce outlays by \$20 billion over the 2009–2018 period.

This proposal, JCT estimates, would reduce revenues by almost \$17 billion in 2009 but would boost them after 2010. Beyond that point, the projected gain in revenues from repealing the current provisions that exclude most health care costs from taxable income exceeds the loss in revenues from allowing a deduction against income for those who purchase qualified health insurance. The net gain in revenues under the proposal increases over time in part because the amount of the new deduction is indexed to a general price index and because, historically, health insurance premiums have increased at a rate faster than overall inflation. As a result of that discrepancy, the real value of the proposed deduction diminishes over time. In 2018, JCT estimates, this proposal would increase revenues by \$115 billion.

By CBO's estimates, the proposal would reduce the number of uninsured people by about 5 million in the first several years after its enactment and cause several hundred thousand people (about 1 percent of enrollees) to switch from Medicaid to private coverage. Spurring such a shift would be those individuals' realization that private insurance was a more attractive option than public coverage, given the value of the new deduction relative to the private insurance premiums they would have to pay. Those shifts in coverage would be smaller in later years because of the lower value of the deduction relative to health insurance premiums.

6. Payroll taxes include receipts that are credited to the Social Security trust funds. Revenues and outlays of those funds (as well as the transactions of the Postal Service) are considered off-budget and are therefore excluded from certain budget totals by law. However, the total budget figures commonly used include both on- and off-budget items.

Beyond 2018, the revenues that the proposal would generate would continue to expand, but they would be partially offset by growing outlays for Social Security benefits. The proposal would affect spending for Social Security to the extent that changes in taxable wages as a result of the proposal altered the covered wages used to calculate Social Security benefits. Over the 10-year period, the effect on Social Security outlays would be less than 1 percent of the total revenues generated by this proposal. Over a longer period, however, the proposal would have the effect of raising taxable wages—and hence outlays for Social Security benefits—by increasingly significant amounts.

Compared with JCT's estimates, which envision a significant boost in revenues from the President's proposal over the next decade, the Treasury Department's estimates suggest more-modest effects. In particular, the Treasury calculates that the proposal will raise revenues by \$41 billion over the 2009–2018 period.

Extension of the Research and Experimentation Tax Credit

In past years, corporations could claim a tax credit of 20 percent on certain expenditures for research activities that exceeded a base amount. That credit expired on December 31, 2007, but the President proposes to reinstate it (retroactive to its expiration) and make it permanent. According to JCT, the proposal would reduce revenues by \$105 billion over the next 10 years.

Changes in the Financing of the Airport and Airway Trust Fund

Currently, excise taxes on airline tickets, on domestic air freight transportation, and on aviation fuel finance the Airport and Airway Trust Fund. The President proposes to stop collecting most taxes on air transportation beginning in 2010. A tax on international arrivals and departures would remain in effect, along with aviation fuel taxes, although the rates of those levies would change. JCT estimates that changing air transportation taxes will reduce revenues by \$87 billion over the 2009–2018 period.

Under the President's proposal, those taxes would be replaced with various fees on commercial aviation that would help pay for the use of air traffic control services by that industry. Starting in 2010, those fees would be

recorded as offsets to discretionary spending of the Federal Aviation Administration. (In its analysis of the proposal's effects, CBO assumed that the impact of those fees on discretionary spending was reflected in the aggregate funding levels specified in the President's budget for such spending over the 2010–2013 period.)

Other Tax Proposals

The President's budget also contains a number of other tax proposals, which include changing the treatment of incentives related to charitable giving, health care, education, the environment, savings, business investment, and tax compliance. Together, those proposals would reduce revenues by \$21 billion between 2009 and 2018 and decrease outlays for refundable tax credits by \$2 billion over the same period, JCT estimates.

Policy Proposals Affecting Mandatory Spending

If the proposals in the President's budget were enacted, they would reduce mandatory spending relative to the amounts in the baseline by \$143 billion (0.7 percent) over the next 10 years, CBO estimates. The proposals generating the largest reductions in mandatory spending are those relating to Medicare. The budget also includes proposals that would reduce outlays for Medicaid, the Pension Benefit Guaranty Corporation (PBGC), and the Social Services Block Grant program.

In the other direction, the proposal that would institute individual accounts for Social Security would raise outlays for that program, and the President's tax proposals would boost spending for refundable tax credits (primarily the earned income and child tax credits). The President also proposes additional spending for the State Children's Health Insurance Program (SCHIP).

Medicare

The President's budget contains many proposals to change the Medicare program. The major provisions would reduce the rates that Medicare pays for a broad range of services covered by the Hospital Insurance (Part A) and Supplementary Medical Insurance (Part B) portions of the program and increase the premiums that higher-income beneficiaries paid for Part B services and the prescription drug benefit (Part D). By CBO's estimates, the President's proposals would reduce net federal

Table 1-5.

CBO's Estimate of the President's 2009 Proposals Affecting Medicare

(Billions of dollars)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
Freeze Payment Rates Through 2011 and Reduce Updates by 0.65 Percentage Points Thereafter	0	-4	-11	-18	-22	-25	-30	-34	-38	-44	-50	-80	-275
Reduce Other Payments to Hospitals	0	-4	-9	-11	-11	-12	-13	-14	-15	-16	-16	-47	-120
Eliminate Payments for Bad Debts ^a	0	*	-1	-1	-2	-2	-3	-3	-3	-4	-4	-6	-23
Eliminate Annual Indexing of Thresholds for Part B Income-Related Premiums	0	*	*	-1	-1	-1	-2	-2	-3	-3	-4	-4	-18
Eliminate Annual Indexing of Thresholds for Part D Income-Related Premiums	0	*	*	-1	-1	-1	-1	-1	-2	-2	-3	-3	-12
Other Provisions	*	-1	-2	-3	-3	-3	-4	-4	-4	-4	-5	-12	-33
Total Changes in Mandatory Spending	*	-9	-23	-34	-40	-46	-52	-58	-65	-73	-81	-151	-481

Source: Congressional Budget Office.

Notes: These figures include the effects of the policies on payments to Medicare Advantage and on collections of premiums paid by beneficiaries.

* = between -\$500 million and \$500 million.

a. The proposal would be phased in over four years.

spending for Medicare by \$481 billion (or about 8 percent) over the 2009–2018 period.

The proposals that account for the greatest estimated savings would freeze payment rates for services provided by inpatient hospitals, skilled nursing facilities, hospital outpatient departments, home health agencies, and other providers (except physicians) from 2009 to 2011. After 2011, the President proposes to permanently reduce the automatic annual payment updates for those providers by half the gains expected in productivity, or 0.65 percentage points. (Under current law, payment rates for most providers increase each year with inflation.) Those proposals would reduce outlays for Medicare by \$275 billion over the 2009–2018 period (see Table 1-5).

Other provisions—to reduce payments to hospitals that treat a disproportionate share of beneficiaries eligible for Medicaid or Supplemental Security Income and payments to hospitals that operate graduate medical

education programs—would diminish net outlays over that period by another \$120 billion. Proposals to charge higher-income beneficiaries larger premiums for Parts B and D would save about \$30 billion over the 10 years, CBO estimates.

In addition, the President proposes to reduce payments that Medicare makes to hospitals and other providers for bad debts, which would save \$23 billion over the period. Other changes to Medicare, including reductions in payments for oxygen equipment and competitive bidding for clinical laboratory services, would reduce the program's outlays by \$33 billion between 2009 and 2018.

Those amounts include about \$5 billion in estimated savings from a proposal to impose limits on medical malpractice litigation. The limits, which would result in lower premiums for medical malpractice insurance, would reduce Medicare spending because the program's payment rates for services provided by physicians and

hospitals include explicit adjustments for changes in the cost of malpractice premiums.

Social Security Individual Accounts

The President proposes to establish voluntary individual accounts for workers, which would replace some of the Social Security benefits provided under current law. For people who chose to participate, the government would deposit into an individual account an amount equivalent to as much as 4 percentage points of the current 12.4 percent tax on covered earnings. The account holder would direct—within a limited number of investment options—how the money should be invested. (The options would be similar to those available under the Thrift Savings Plan for federal employees.) When account holders eventually began to draw Social Security benefits, the amount of their defined benefit would be reduced according to a formula based on the amount deposited in their individual accounts.

Net outlays from establishing individual accounts would total \$287 billion between 2012 and 2018, in CBO's estimation. The Administration projects a much larger amount—\$647 billion over that period—chiefly because it estimates that two-thirds of eligible workers would participate, whereas CBO estimates that about one-third would sign up. In addition, CBO assumes that, initially, a lag will occur between the time when the taxes are collected and the point at which the appropriate portion is transferred to workers' individual accounts and recorded as outlays. Therefore, most outlays resulting from the establishment of such accounts would first be recorded in 2014, CBO anticipates, rather than in 2013, as the Administration foresees. (The President's budget also includes several other proposals that would affect Social Security. Those proposals are discussed below, in the section titled "Other Mandatory Spending Proposals.")

Refundable Tax Credits

The President's tax proposals, JCT estimates, would add about \$126 billion to mandatory outlays for the refundable portions of the earned income and child tax credits over the 2009–2018 period. The change with the biggest impact would make the 2001 expansion of the child tax credit permanent.⁷ If the credit and the other provisions originally enacted in EGTRRA and JGTRRA were permanently extended at their 2010 levels, outlays would increase by \$147 billion through 2018. The President's proposals to change the tax treatment of health insurance premiums and health care expenses would lower

outlays—by about \$20 billion over the next 10 years. Other proposals related to refundable tax credits would have little effect on outlays.

Medicaid and SCHIP

The President's proposals for SCHIP and Medicaid would raise SCHIP spending by \$35 billion and lower net Medicaid spending by a total of \$59 billion over the 2009–2018 period, CBO estimates. Together, those changes would reduce mandatory outlays by \$24 billion over the 10-year period.

The President is proposing to reauthorize SCHIP for five years and to increase the program's funding by a total of close to \$20 billion from 2009 through 2013, relative to CBO's projection of \$25 billion under baseline assumptions. (The program is currently authorized until March 2009 but in the baseline is assumed to continue.) Consistent with statutory guidelines, CBO assumed in its estimate of the proposal that annual funding for the program after 2013 would continue at its proposed level for that year—\$10.5 billion. In contrast, CBO's baseline projection for the program incorporates funding of \$5 billion a year. The President's proposal would also make several changes to SCHIP, primarily eliminating the redistribution of unspent funds, setting limits on eligibility for the program, and moving parents and childless adults from SCHIP to Medicaid. On net, the President's proposals would increase spending for SCHIP by an estimated \$35 billion over the 10-year projection period.

The proposed changes to SCHIP would also affect spending for Medicaid. Under the baseline funding assumption of \$5 billion per year, SCHIP would not have sufficient resources, by CBO's estimates, to cover the costs of all those who would qualify for coverage. Some of those individuals would instead enroll in Medicaid, raising the cost of that program. Under the President's proposal, however, higher funding levels for SCHIP would allow some of the children who would otherwise have enrolled in Medicaid to remain enrolled in SCHIP.

7. Before enactment of EGTRRA, the maximum child tax credit per qualifying child was \$500. The credit was refundable only for families who had three or more qualifying children; it also had other restrictions. EGTRRA increased the credit to \$1,000 per child, with refundability not contingent on the number of qualifying children but limited to 15 percent of the amount of earned income in excess of \$10,000. (That amount was indexed for inflation after 2001.)

The savings for Medicaid from that effect would be more than offset by two other interactions with the SCHIP proposal. First, costs would rise with the transfer of adults from SCHIP to Medicaid. Second, higher funding for SCHIP as well as outreach grants (provided elsewhere within the Department of Health and Human Services) would increase outlays for Medicaid because states would respond to the new funding, CBO expects, by expanding their SCHIP programs; moreover, the publicity and outreach efforts would have the effect of attracting additional children who were eligible to enroll in Medicaid. On net, the SCHIP proposals would increase spending for Medicaid by \$8 billion over the 2009–2018 period, CBO estimates. As a result, combined spending related to those proposals would total \$43 billion.

The President is also proposing changes to Medicaid that would reduce the federal government's spending for the program by an estimated \$67 billion over the projection period. Most of the proposals would reduce outlays (by a total of \$70 billion), and a few would increase costs (by nearly \$4 billion).

In particular, lowering the federal matching rate for certain services would lower federal Medicaid outlays by \$35 billion from 2009 to 2018. Other savings over that period would include \$8 billion from a proposal to reduce spending on prescription drugs; \$4 billion from a cut in payments to states for program administration; \$2 billion from a proposal that would allow states to enroll dual eligibles (people who are eligible for both Medicaid and Medicare) in managed care programs; and \$6 billion from a set of proposals to reduce the number of improper payments.

The President's proposals to create a standard deduction for health insurance and to change the medical malpractice laws would also reduce spending for Medicaid. Some Medicaid enrollees who are eligible for private insurance but do not enroll because of the cost of premiums would, under the President's proposals, switch to private plans and use the standard deduction for health insurance, CBO anticipates. That shift, if it occurred, would reduce Medicaid's costs by \$12 billion over the 2009–2018 period, in CBO's estimation. If the President's proposal to change malpractice laws was enacted, Medicaid's costs would drop by an additional \$1 billion during that time.

In addition, the President's proposal related to improper payments in the Supplemental Security Income (SSI)

program would affect Medicaid spending. Under that proposal, SSI would receive additional funding to increase the number of reviews it conducts to determine whether an individual continues to meet the eligibility requirements of the program. As a result of those reviews, some individuals would lose their eligibility for SSI, and some, in turn, would also lose their eligibility for Medicaid. Consequently, Medicaid spending would fall by \$2 billion, CBO estimates.

Pension Insurance

The President proposes to allow the board of the Pension Benefit Guaranty Corporation to increase both flat- and variable-rate premiums to meet current and future claims. The board would seek to meet current claims, CBO and the Administration both assume, by increasing flat-rate premiums for single-employer insurance plans in 2009 from \$34 to \$48 per participant. In addition, CBO expects, the board would increase variable-rate insurance premiums, which some companies pay to PBGC on behalf of underfunded plans, to cover anticipated future claims related to such plans. Currently, variable-rate premiums are set by statute at \$9 per \$1,000 of underfunding. CBO and the Administration expect that if this proposal was enacted, the board would raise the rate to \$16 per \$1,000 of underfunding, causing premiums (which are recorded in the budget as offsetting collections) to rise, CBO estimates, by a total of \$19 billion from 2009 to 2018.

The Social Services Block Grant Program

The President's budget proposes to reduce funding for the Social Services Block Grant program from \$1.7 billion in 2008 to \$1.2 billion in 2009 (through appropriation action) and to eliminate it thereafter. Those changes would reduce mandatory outlays by \$15 billion from 2009 to 2018, CBO estimates.

Other Mandatory Spending Proposals

If all other proposals that involved mandatory spending programs were enacted, they would, on balance, decrease outlays by \$18 billion over the 2009–2018 period, by CBO's estimates. Some of those other proposals are discussed below.

Other Social Security Provisions. In addition to establishing individual accounts, the President's budget also includes five proposals that would modestly reduce outlays for Social Security benefits:

- Suspend benefits for 16- and 17-year-old children of retired, deceased, or disabled workers unless the children are in school (under current law, only students ages 18 or 19 are required to attend school to qualify for benefits);
- Require state and local governments to provide information about their annuitants to strengthen enforcement of two current provisions (the windfall elimination provision and the government pension offset) that reduce Social Security benefits for people who have pensions from employment that was not covered by Social Security;
- Reduce from 12 to 6 the number of months of retroactive benefits that disabled beneficiaries may receive for the period between the date they become eligible and the date they apply for benefits;
- Delay payment of retroactive benefits (by up to a month) until the next regularly scheduled monthly benefit payment; and
- Alter the way that disability benefits are reduced when beneficiaries also receive workers' compensation for a work-related illness or injury.

In all, those five proposals would save more than \$15 billion over the 2009–2018 period, CBO estimates.

Agriculture and Nutrition Programs. The President's budget includes proposals that would revise and extend expiring provisions of the Farm Security and Rural Investment Act of 2002. (The proposals affect commodity, conservation, trade, rural development, nutrition, and other programs.) The Administration has estimated that the proposals would increase outlays by more than \$2 billion over the 2009–2018 period, relative to the spending that would occur if most existing programs were extended indefinitely. CBO estimates that if the proposals were put into place, they would increase spending by \$4 billion over the 10-year period, relative to CBO's baseline projections (which assume the continuation of most current programs and total about \$656 billion over that period).

The President's proposals are intended to shift agriculture spending to programs that are not tied to current farm production. Under the proposals, lower loan rates for the commodity loan program (which compensates farmers for their current production if prices fall below a specified level) would reduce spending, whereas higher payment rates for the direct payment program (which provides fixed prices to farmers for a portion of their historical production) would increase spending. The countercyclical payment program, under which farmers receive payments on a portion of past production if national average prices fall below target prices, would be replaced by a countercyclical program under which farmers would receive payments if national average farm revenues fell below specified targets. (Producers could receive direct and countercyclical payments even if they did not produce a crop in the current year.) In addition, the President proposes to reduce the maximum amount of subsidy payments an individual farmer can receive, reduce spending for the sugar program, and extend dairy payments (under current law, those payments are scheduled to end during 2008).

Other proposals would extend benefits to producers of specialty crops, livestock and forestry enterprises, and other agricultural and rural interests. In addition, the President would reduce subsidies for crop insurance, expand access to Food Stamps among the elderly and working poor, and increase purchases of fruits and vegetables for nutrition assistance programs.

ANWR Leasing. The President proposes to lease a portion of the coastal plain of the Arctic National Wildlife Refuge (ANWR) to companies that want to explore for oil and natural gas. The way those leases would be handled, CBO anticipates, would be similar to current leasing practices in other federal areas, such as the Outer Continental Shelf. If so, the leases would be offered in multiple phases, with the first sale likely to occur in 2011 and subsequent sales to be held every two years thereafter. Proceeds to the federal government from bonuses and rents would total \$6 billion between 2011 and 2018, CBO estimates. (Although the federal government would receive income from royalties on production, nearly all of those payments would occur after 2018.) Under the President's proposal, half of the receipts from leasing would

be paid to Alaska, resulting in net federal receipts of \$3 billion over the 2009–2018 period.⁸

Veterans' Benefits. The President's budget contains several proposed changes to the health care program of the Department of Veterans Affairs:

- Eliminate, beginning in 2009, the practice of waiving copayments for doctors' visits from veterans with third-party insurance;
- Increase pharmacy copayments, again beginning in 2009, from \$8 to \$15 for veterans who do not have a service-connected disability and whose income is above a certain threshold; and
- Beginning in 2010, charge that same group of veterans an annual fee to enroll in the health care program (the fee would be \$250, \$500, or \$750, depending on the veteran's family income).

Together, those proposals would generate additional receipts totaling almost \$5 billion over the 2009–2018 period, CBO estimates. Those sums would be considered offsets to mandatory spending.

Temporary Assistance for Needy Families. By CBO's estimates, the President would boost spending for Temporary Assistance for Needy Families by about \$3 billion over the 10-year period. That increase results mostly from proposals to continue an existing supplemental grant, to lower the work participation rate required of two-parent families, and to make the contingency fund available to states that opt to participate in a new block grant program for foster care and then experience an increase in their foster care caseload.

8. CBO's estimate of bonus bids for the leases is based on the U.S. Geological Survey's projections of the mean value of economically recoverable oil that could be produced from federal land in the refuge. It also relies on information from other federal agencies, the state of Alaska, and industry experts about how oil and gas companies perceive several key factors that affect the expected profitability of ANWR leases—in particular, companies' probable assumptions about long-term profitability of such investments. The estimate also takes into account the results from recent leasing activities in other federal areas.

Policy Proposals Affecting Discretionary Spending

As of early March, lawmakers had enacted \$1,045 billion in discretionary budget authority for 2008, including \$88 billion for military operations in Iraq and Afghanistan and other activities related to the war on terrorism.⁹ The President has requested another \$105 billion in supplemental funding for 2008 for those purposes (as well as an additional \$3 billion for other activities). If that supplemental funding request was enacted, total discretionary budget authority for 2008 would rise to \$1,153 billion (see Tables 1-6 and 1-7).

For 2009, the President has requested \$1,067 billion in discretionary appropriations, CBO estimates—\$608 billion for national defense and \$460 billion for nondefense programs.¹⁰ The request includes \$70 billion as partial funding for operations in Iraq and Afghanistan and other activities related to the war on terrorism and almost \$6 billion for hurricane-related construction. (The budget notes that additional funding for the former will be requested once specific needs are better known.)

If funding for operations in Iraq and Afghanistan was excluded from the comparison, discretionary budget authority under the President's proposals would grow by 3.8 percent, or \$37 billion, from 2008 to 2009. Appropriations for defense would increase by 7.2 percent, and funding for homeland security activities would rise by 7.8 percent. Other appropriations would decline overall by 0.5 percent.

The budget does not specify appropriation amounts for individual budget accounts beyond 2009. Instead, the Administration provides aggregate funding amounts for 2010 through 2013; those totals do not include any funding for military operations in Iraq and Afghanistan. If the \$70 billion requested for such purposes for 2009 was excluded, proposed aggregate funding for defense would grow by \$33 billion from 2009 to 2013—an average annual rate of growth of 1.5 percent (slower than the

9. Budget authority that is provided and controlled by appropriation acts is considered discretionary.

10. For a number of reasons—including differences in projections of offsetting collections and other technical factors—the Administration's estimate of budget authority for 2009 is \$1.9 billion lower than CBO's estimate.

Table 1-6.**Proposed Changes in Discretionary Budget Authority in the President's Budget, 2007 to 2009**

(Billions of dollars)

	Actual 2007	Administration's Request		Percentage Change	
		2008	2009	2007-2008	2008-2009
Budget Authority					
Defense	622	690 ^a	608	10.8	-11.9
Nondefense					
Homeland security ^b	32	35 ^a	37	7.9	7.8
Other	418	429 ^a	422	2.6	-1.6
Subtotal, nondefense	450	464 ^a	460	3.0	-0.9
Total	1,073	1,153^a	1,067	7.5	-7.5
Budget Authority, Excluding Funding for Operations in Iraq and Afghanistan and Other Activities Related to the War on Terrorism ^c					
Defense	457	502	538	9.8	7.2
Nondefense					
Homeland security ^b	32	35	37	7.9	7.8
Other	412	424	422	2.8	-0.5
Subtotal, nondefense	445	459	460	3.2	0.2
Total	902	961	997	6.5	3.8

Source: Congressional Budget Office.

Note: These numbers do not include obligation limitations for certain transportation programs.

- a. Includes the Administration's request totaling \$108 billion for supplemental appropriations to fund military operations in Iraq and Afghanistan and various other programs.
- b. CBO's classification of homeland security funding is based on designations established by the Administration. Those designations are not limited to the activities of the Department of Homeland Security. In fact, some of the department's activities (such as disaster relief) are not included in the Administration's definition of homeland security, whereas nondepartmental activities (such as some defense-related programs and some funding for the National Institutes of Health) fall within that definition. About 55 percent of all spending considered to be for homeland security is for activities outside the Department of Homeland Security.
- c. In 2007, the Congress and the President provided \$170 billion in funding for military operations in Iraq and Afghanistan and for activities related to the war on terrorism. Thus far in 2008, \$88 billion in funding has been provided for operations in Iraq and Afghanistan. In his 2009 budget, the President requests another \$105 billion in supplemental funding for 2008 and \$70 billion for 2009 for operations in Iraq and Afghanistan and for the war on terrorism.

2.1 percent rate of inflation that CBO projects for the period).¹¹ Discretionary funding provided for nondefense programs and activities would decline from the level proposed for 2009—falling from \$460 billion next year to \$450 billion in 2013. The amount proposed for 2013 represents a reduction from the 2009 amount of about 10 percent in inflation-adjusted terms.

Defense Programs

CBO estimates that, relative to its baseline, enactment of the President's proposals would add \$28 billion to defense outlays in 2008 and \$50 billion in 2009. Most of those outlays stem from the additional funding requested for military operations in Iraq and Afghanistan.¹² If those

11. The defense discretionary category in Tables 1-6 and 1-7 also includes spending for atomic energy and other defense-related programs that are not administered by the Department of Defense.

12. Out of the \$108 billion supplemental request in the President's budget, \$103 billion is categorized as funding for national defense—\$101 billion for military operations in Iraq and Afghanistan and \$1 billion for other activities.

Table 1-7.

Discretionary Budget Authority Requested by the President for 2009 Compared with Funding for 2008, by Budget Function

(Billions of dollars)

	Funding for 2008			Total
	Regular Enacted	Emergency Enacted ^a	Supplemental Requested ^a	
Defense	500.2	87.0	102.6	689.8
Nondefense				
International affairs	34.3	2.4	5.4	42.1
General science, space, and technology	27.3	0	0	27.3
Energy	5.0	0	0	5.0
Natural resources and environment	30.9	0.8	0	31.7
Agriculture	5.9	*	*	5.9
Commerce and housing credit	3.1	*	*	3.1
Transportation	27.0	0.4	*	27.4
Community and regional development	14.2	6.1	0	20.3
Education, training, employment, and social services	79.8	0	0	79.8
Health	53.1	0.1	*	53.1
Medicare (Administrative costs)	4.9	0	0	4.9
Income security	51.7	0.7	*	52.3
Social Security (Administrative costs)	5.0	*	*	5.0
Veterans benefits and services	39.6	3.7	0	43.3
Administration of justice	42.9	2.6	*	45.5
General government	16.6	0.5	0	17.1
Allowances for emergencies and other needs	0	0	0	0
Subtotal, nondefense	441.2	17.1	5.4	463.7
Total	941.4	104.1	108.0	1,153.5
Memorandum:				
Transportation Obligation Limitations ^c	53.7	0	0	53.7

Source: Congressional Budget Office.

Note: * = between -\$500 million and \$500 million; n.a. = not applicable.

- a. Mostly for military activities in Iraq and Afghanistan.
- b. Includes a rescission of \$3.9 billion in mandatory contract authority.
- c. Spending from the Highway Trust Fund and the Airport and Airway Trust Fund is provided through obligation limitations. Budget authority for those programs is provided in authorizing legislation and is not considered discretionary.

Funding for 2009			Change in Regular Funding, 2008–2009	
Regular Requested	Supplemental Requested	Total	Billions of Dollars	Percent
537.8	70.0	607.8	37.5	7.5
39.8	0	39.8	5.5	16.0
29.4	0	29.4	2.1	7.9
4.9	0	4.9	-0.1	-1.5
28.9	5.8	34.7	-2.0	-6.5
5.7	0	5.7	-0.2	-3.2
4.3	0	4.3	1.2	39.9
23.4 ^b	*	23.4 ^b	-3.6	-13.4
11.5	0	11.5	-2.8	-19.4
79.6	0	79.6	-0.1	-0.2
54.5	0	54.5	1.4	2.7
5.4	0	5.4	0.5	10.1
54.4	0	54.4	2.7	5.3
5.2	0	5.2	0.3	5.1
44.9	0	44.9	5.3	13.5
43.3	0	43.3	0.4	0.8
18.6	0	18.6	2.0	12.0
*	0	*	*	n.a.
453.9	5.8	459.6	12.7	2.9
991.6	75.8	1,067.4	50.2	5.3
51.9	0	51.9	-1.8	-3.4

sums were appropriated, budget authority for defense would total \$690 billion this year—10.8 percent more than the \$622 billion provided for 2007. Measured in relation to the economy, defense outlays would reach 4.2 percent of GDP in 2008, up from 3.0 percent of GDP just seven years ago.

Under the President's proposals, budget authority provided for military operations in Iraq and Afghanistan and for the war on terrorism would total \$188 billion in 2008—mostly for operations and maintenance (\$93 billion), procurement (\$71 billion), and personnel (\$18 billion). The request for 2008 is \$23 billion above the amount provided for such purposes in 2007, with nearly all of that growth resulting from an increase of \$20 billion in funding for procurement. The increase in procurement funding is mostly to purchase trucks, armored vehicles, and radios for the Army. In total, appropriations for operations in Iraq and Afghanistan and for the war on terrorism would constitute more than 27 percent of defense budget authority for 2008. Similar comparisons cannot yet be made for 2009 because the \$70 billion requested for that year is expected to cover only part of the year's costs.

If funding for Iraq and Afghanistan was excluded from the comparison, budget authority for defense would grow by 9.8 percent, or \$45 billion, from 2007 to 2008. Under the President's budgetary proposals, it would rise by 7.2 percent, or \$36 billion, from 2008 to 2009.

All major categories of regularly enacted funding for defense would receive increases in 2009, by CBO's estimates. Operations and maintenance activities would receive the largest boost, growing by nearly \$16 billion (10 percent). The funds that the President is requesting would also cover certain costs associated with a planned increase in the number of Army and Marine Corps personnel, as well as additional expenditures for depot maintenance, training, recruiting, transportation, logistics, and other support.

The military personnel category would receive an increase of nearly \$9 billion (or 8 percent) under the President's plans, and funding for procurement would rise by \$5 billion (or 5 percent). In addition, both military

construction and activities related to research, development, test, and evaluation would rise by about \$3 billion.

If the President's policies were enacted as specified in the budget, budget authority for defense would fall during the 2009–2013 period, dropping from \$608 billion in 2009 to \$571 billion in 2013. That decline occurs because the President did not specify any funding for military operations in Iraq and Afghanistan or for other activities related to the war on terrorism beyond 2009 (see Figure 1-2). Under that assumption, outlays for defense would be \$151 billion below the amounts in CBO's baseline between 2009 and 2013. (In keeping with the rules that govern baseline projections, CBO assumes that the \$87 billion in defense funding already appropriated this year for military operations in Iraq and Afghanistan and other activities related to the war on terrorism will continue to be provided in each subsequent year through 2018, with adjustments for inflation.) Comparing only defense spending that is unrelated to military operations in Iraq and Afghanistan or other activities related to the war on terrorism, outlays in the President's budget would be about \$80 billion above CBO's baseline.

Nondefense Discretionary Programs

Under the President's budget, funding for nondefense discretionary programs would reach \$464 billion in 2008, an amount that includes a request for an additional \$5 billion in supplemental funding.¹³ For 2009, the President seeks to reduce budget authority for nondefense discretionary programs to \$460 billion (a figure that includes almost \$6 billion in emergency funding for hurricane-related construction).

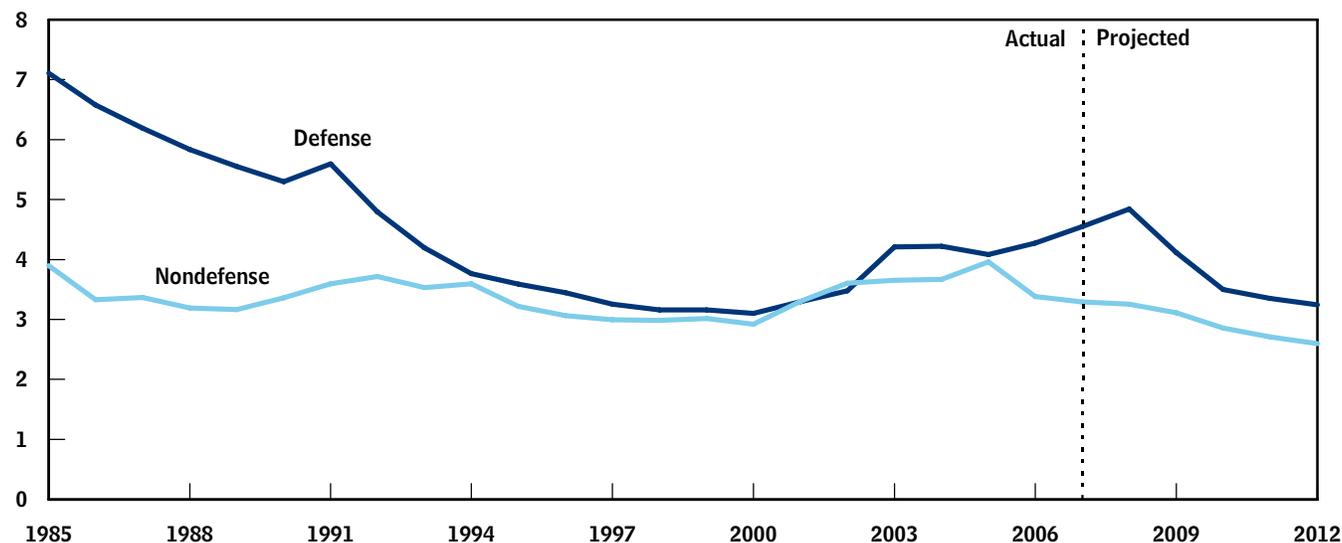
Excluding emergency funding (both enacted and requested), total budget authority for nondefense discretionary activities in 2009 under the President's budget would increase by nearly \$13 billion (or 3 percent) over the amount provided in 2008. Budget authority would rise for some activities and fall for others. For example,

13. Virtually all such funding is related to international affairs. Nearly \$4 billion is for diplomatic operations and foreign aid for Iraq and Afghanistan and other activities related to the war on terrorism. Almost \$2 billion is for other international assistance and peace-keeping initiatives.

Figure 1-2.

Discretionary Budget Authority in Recent Decades and Under Policies Proposed in the President's 2009 Budget

(Percentage of gross domestic product)



Source: Congressional Budget Office.

funding for activities related to international affairs would grow by \$5.5 billion (16.0 percent); foreign aid, diplomatic and consular programs, and the Millennium Challenge Corporation would all receive significant increases. Budget authority for veterans' benefits and services in 2009 would rise by \$5.3 billion (13.5 percent), primarily because of additional funding for medical services. Income security programs would see their funding climb by \$2.7 billion (5.3 percent), largely because of growth in housing assistance.

Other areas of the budget would see a drop in funding for 2009 under the President's proposals. Community and regional development would receive \$2.8 billion (19.4 percent) less in funding for 2009, mostly because of reductions in funding for grants and other assistance to improve the readiness of state and local governments to respond to catastrophic events, and for the community development fund. Budget authority for natural resources would fall by about \$2 billion (6.5 percent).

Differences Between CBO's and the Administration's Economic Forecasts and Budget Estimates

CBO's estimate of the deficit for 2008 under the President's budget (\$396 billion) is \$14 billion less than the Administration's estimate (\$410 billion). For 2009, CBO's estimate of the deficit is \$65 billion below that of the Administration. For subsequent years, however, CBO anticipates somewhat larger deficits than does the Administration. The cumulative five-year deficits and surpluses that CBO and the Administration project differ by \$90 billion—equivalent to 0.6 percent of projected outlays during that period (see Table 1-4 on page 8).

CBO's and the Administration's Economic Assumptions

There are appreciable differences between CBO's and the Administration's forecasts of the economic variables that underlie their budget projections. Those differences have little effect on the deficit estimates for 2008 but add \$221 billion to CBO's cumulative deficit projection

Table 1-8.**Comparisons of CBO's, the Administration's, and Private-Sector Economic Projections for Calendar Years 2008 to 2013**

	Actual 2007	Forecast		Projected Annual Average, 2010-2013
		2008	2009	
Nominal GDP (Billions of dollars)				
CBO	13,843	14,358	14,946	18,278 ^a
Administration	13,843	14,480	15,215	18,462 ^a
<i>March Blue Chip</i>				
Top 10 average	13,843	14,494	15,305	18,870 ^b
Consensus	13,843	14,383	15,059	18,286 ^b
Bottom 10 average	13,843	14,244	14,771	17,649 ^b
Nominal GDP (Percentage change)				
CBO	4.9	3.7	4.1	5.2
Administration	4.9	4.6	5.1	5.0
<i>March Blue Chip</i>				
Top 10 average	4.9	4.7	5.5	n.a.
Consensus	4.9	3.9	4.5	n.a.
Bottom 10 average	4.9	3.2	3.3	n.a.
Real GDP (Percentage change)				
CBO	2.2	1.9	2.3	3.2
Administration	2.2	2.7	3.0	2.9
<i>March Blue Chip</i>				
Top 10 average	2.2	2.1	3.0	n.a.
Consensus	2.2	1.5	2.3	n.a.
Bottom 10 average	2.2	0.9	1.3	n.a.
GDP Price Index (Percentage change)				
CBO	2.7	1.8	1.7	1.9
Administration	2.7	1.9	2.0	2.0
<i>March Blue Chip</i>				
Top 10 average	2.7	2.8	2.6	n.a.
Consensus	2.7	2.4	2.2	n.a.
Bottom 10 average	2.7	2.1	1.7	n.a.
Consumer Price Index (Percentage change) ^c				
CBO	2.9	2.8	1.9	2.1
Administration	2.9	2.7	2.1	2.3
<i>March Blue Chip</i>				
Top 10 average	2.9	4.0	3.3	n.a.
Consensus	2.9	3.4	2.4	n.a.
Bottom 10 average	2.9	2.7	1.6	n.a.
Unemployment Rate (Percent)				
CBO	4.6	5.2	5.5	4.9
Administration	4.6	4.9	4.9	4.8
<i>March Blue Chip</i>				
Top 10 average	4.6	5.5	6.0	n.a.
Consensus	4.6	5.3	5.4	n.a.
Bottom 10 average	4.6	5.1	4.9	n.a.

Continued

Table 1-8.

Continued

Comparisons of CBO's, the Administration's, and Private-Sector Economic Projections for Calendar Years 2008 to 2013

	Actual 2007	Forecast		Projected Annual Average, 2010-2013
		2008	2009	
Three-Month Treasury Bill Rate (Percent)				
CBO	4.4	2.1	2.4	4.6
Administration	4.4	3.7	3.9	4.1
March <i>Blue Chip</i>				
Top 10 average	4.4	2.5	3.7	n.a.
Consensus	4.4	2.1	2.7	n.a.
Bottom 10 average	4.4	1.7	1.9	n.a.
Ten-Year Treasury Note Rate (Percent)				
CBO	4.6	3.6	3.8	5.1
Administration	4.6	4.6	4.9	5.2
March <i>Blue Chip</i>				
Top 10 average	4.6	4.1	4.9	n.a.
Consensus	4.6	3.8	4.3	n.a.
Bottom 10 average	4.6	3.4	3.7	n.a.
Wages and Salaries (Billions of dollars) ^d				
CBO	6,367	6,651	6,936	8,421 ^a
Administration	6,405	6,710	7,057	8,401 ^a
Wages and Salaries (As a percentage of GDP) ^d				
CBO	46.0	46.3	46.4	46.2
Administration	46.3	46.3	46.4	46.1

Sources: Congressional Budget Office; Office of Management and Budget; Randell E. Moore, *Blue Chip Economic Indicators* (New York: Aspen Publishers, March 2008); Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Department of Labor, Bureau of Labor Statistics.

Notes: Percentage changes are measured from one year to the next.

GDP = gross domestic product; n.a. = not available.

- a. Level in 2013.
- b. Estimated by CBO.
- c. The consumer price index for all urban consumers.
- d. The *Blue Chip* measure does not include wages and salaries.

over the 2009–2013 period, relative to that of the Administration.

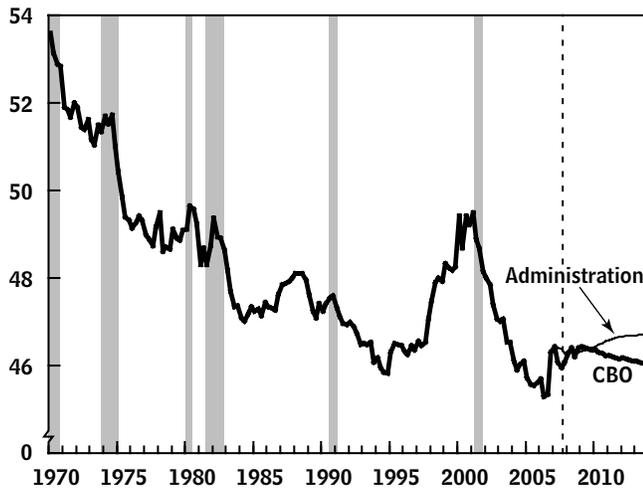
The Administration's economic outlook was prepared in November 2007, before several pieces of information suggesting near-term economic weakness were released. As a result, the Administration forecasts stronger economic growth in 2008 and 2009 than CBO does in its current forecast, which was completed in early February (see Table 1-8). The Administration also assumes that interest rates will be higher in the near term, which implies higher

outlays for debt service. On balance, however, the Administration's forecast implies a more favorable outlook for the budget.

The primary differences between the two sets of economic assumptions appear in the variables that affect revenues—particularly nominal GDP and wage and salary income—and the differences are largest during the first two years of the forecast period. CBO anticipates that real GDP will grow more slowly in 2008 and early 2009 than the Administration expects; however, it also anticipates

Figure 1-3.**CBO's and the Administration's Forecasts of Wages and Salaries**

(Percentage of gross domestic product)



Sources: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

that real GDP growth will accelerate beginning in mid-2009 and be slightly faster than the pace that the Administration foresees for the remainder of the five-year period. CBO also forecasts that inflation (as measured by the change in the GDP price index) will be below the Administration's estimate in 2008 and 2009 and slightly lower during the 2010–2013 period. Consequently, CBO expects that nominal GDP will grow considerably more slowly during the first two years of the forecast period than the Administration anticipates but that it will grow slightly faster during the 2010–2013 period.

The Administration's estimates for wages and salaries—the category of income that has the biggest effect on revenue projections—for the years from 2008 to 2013 are larger than CBO's. Most of the difference arises because the Administration assumes that nominal GDP will be higher throughout the 2008–2013 period than CBO foresees. However, during the years from 2010 to 2013, some of the difference between the two sets of estimates occurs because wages and salaries make up a larger share of GDP in the Administration's forecast than they do in CBO's forecast (see Figure 1-3).

Much of the near-term differences between the economic projections of CBO and the Administration can be attributed to revised and newly available data. The

Administration completed its economic forecast before the Bureau of Economic Analysis published a revision to the national income and product accounts that revealed a lower level of wages and salaries for the second and third quarters of 2007. In addition, other data released since then indicate that economic conditions have weakened and that the near-term outlook for economic growth has dimmed. As a result, CBO updated its macroeconomic forecast in mid-February and used that updated forecast for the analysis contained in this report.

Differences in Estimates of Revenues

If the President's proposals were enacted, revenues would total \$2.5 trillion this year, CBO estimates—\$16 billion more than the Administration projects. For the 2009–2013 period, however, CBO's projection of \$15.2 trillion in total revenues is lower than the Administration's by \$210 billion, or 1.4 percent. Differing economic assumptions—CBO's lower projections for wages and salaries as well as for corporate profits—reduce CBO's estimates, relative to those of the Administration, by \$13 billion for 2008 and by \$331 billion over the 2009–2013 period. Technical estimating differences go in the other direction, raising CBO's projections by \$29 billion for 2008 and \$120 billion over the five-year period.

The divergences related to technical factors fall into three categories: differences between CBO's and the Administration's baselines; differences between the Administration's budget assumptions regarding an economic growth package and the estimates by CBO and JCT of the effects of the Economic Stimulus Act, which was enacted between the release of the President's budget and the release of this report; and differences between estimates by CBO and JCT of the President's revenue proposals and the Administration's estimates.

The technical differences between CBO's and the Administration's revenue projections under current law arise largely because CBO estimates a higher revenue yield, on average, over the 2008–2013 period from any given economic scenario. First, CBO estimates a higher average tax rate on both corporate profits and on personal income as measured in the national income and product accounts than the Administration estimates. Such technical differences raise CBO's revenue projections, relative to those of the Administration, by \$11 billion for 2008 and by \$13 billion for the 2009–2013 period. The differences are largest for 2009, when CBO anticipates revenues that are \$51 billion higher than those the Administration

foresees, and for 2013, when CBO anticipates revenues that are \$24 billion lower.

Another difference that CBO characterizes as technical occurs because the revenue impact of fiscal stimulus legislation assumed in the budget was different from JCT's estimate of the effects of the legislation that was enacted. That difference causes CBO's projections of revenues under the President's budget to be higher than the Administration's by \$11 billion in 2008 and \$14 billion between 2009 and 2013.

A final technical difference results from varying estimates of the effects of the President's revenue proposals (excluding the stimulus package). CBO, using JCT's estimates for most revenue provisions, projects that if the President's proposals were enacted, they would reduce revenues by a total of about \$777 billion between 2009 and 2013, which is \$94 billion less than the Administration's estimate of \$871 billion.

That difference can largely be attributed to differing estimates of the proposed change in the treatment of health insurance premiums and medical expenses. By JCT's estimates, the proposal would raise revenues by \$43 billion between 2009 and 2013, whereas by the Administration's estimates, the proposal would reduce revenues by \$94 billion. JCT's estimates of revenue reductions for several other proposals are also smaller than the Administration's. For instance, JCT estimates that if the proposal to permanently extend the research and experimentation tax credit was enacted, it would reduce revenues by about \$38 billion over the five-year period, \$14 billion less than the Administration projects. Similarly, JCT estimates smaller revenue reductions from permanently extending expensing for small businesses (a difference of \$1 billion).

In a number of other cases, JCT's estimates of the President's revenue proposals indicate larger reductions in revenues than the Administration's estimates anticipate. For example, by JCT's estimates, permanently extending the EGTRRA estate and gift tax provisions would reduce revenues by almost \$181 billion over the five-year period, \$31 billion more than the Administration's estimates suggest. Likewise, extending the provisions of EGTRRA and JGTRRA that affect tax rates, the child tax credit, and income tax brackets would reduce revenues by almost \$403 billion over the 2009–2013 period, according to JCT's calculations. That figure is \$18 billion more than the Administration's estimate.

Differences in Estimates of Outlays

With the exception of 2009 and 2013, CBO's estimates of total outlays under the President's proposals are almost identical to those of the Administration.

Differences for Fiscal Year 2008. For 2008, CBO's estimate of total outlays under the President's budget differs by only \$2 billion from that of the Administration (see Table 1-4 on page 8). CBO's estimate of mandatory spending is higher than the Administration's estimate by \$27 billion (2 percent of such outlays); its estimates of discretionary spending and net interest outlays are lower than the Administration's by \$15 billion (1 percent of such outlays) and \$10 billion (4 percent of such outlays), respectively.

CBO's estimate of mandatory outlays in 2008 is higher than the Administration's primarily because the President's budget was prepared before the Economic Stimulus Act of 2008 was signed into law and did not include any outlays from such legislation. Using JCT's calculations, CBO estimates that the act will provide \$38 billion in rebates to tax filers who had little or no tax liability in 2007; such payments are counted on the outlay side of the budget (see Table 1-9). CBO also anticipates that spending for unemployment compensation in 2008 will be \$5 billion more than the Administration expects, mostly because CBO anticipates that the unemployment rate will be higher than the Administration assumes.

CBO's lower estimates of mandatory outlays in other areas partially offset those higher projections. In particular, the following account for the largest differences:

- CBO's estimates of receipts from the auction of licenses to use the electromagnetic spectrum are about \$7 billion above those of the Administration for 2008, reflecting the actual results of the recent auction;
- CBO's projections of receipts from oil and gas leasing activity on the Outer Continental Shelf are \$3 billion above the Administration's, largely because of recent information about the bids for new leases in the Chukchi Sea, off the coast of Alaska.
- CBO estimates that spending for Medicare will be \$6 billion less than the Administration expects, mostly because of differing assumptions about benefit payments.

Table 1-9.**Differences Between CBO's and the Administration's Estimates of Mandatory Outlays in the President's Budget, by Source**

(Billions of dollars)

	2008	2009	2010	2011	2012	2013	Total, 2009- 2013
Administration's Estimate of Mandatory Outlays	1,551	1,636	1,711	1,818	1,866	2,034	9,065
Sources of Differences							
Social Security	1	1	-2	-6	-9	-41	-57
Medicaid	3	6	8	8	9	10	39
Veterans' compensation, pensions, and burials	-2	-3	-5	-7	-7	-10	-32
Agriculture	4	3	3	3	4	4	16
Unemployment compensation	5	10	5	-1	*	1	16
Medicare	-6	-2	-6	*	-3	1	-11
Economic stimulus	38	4	0	0	0	0	4
Other	-17	-1	-2	-5	2	-1	-6
	<u>27</u>	<u>17</u>	<u>1</u>	<u>-8</u>	<u>-5</u>	<u>-37</u>	<u>-31</u>
CBO's Estimate of Mandatory Outlays	1,578	1,653	1,712	1,810	1,862	1,997	9,034

Source: Congressional Budget Office.

Notes: The Administration did not provide budget estimates beyond 2013.

* = between -\$500 million and \$500 million.

CBO's estimate of discretionary spending in 2008 is \$15 billion lower than that of the Administration, and, mostly because of economic factors, CBO expects that outlays for net interest for this year will be \$10 billion less than the Administration's total. (Short- and long-term interest rates in CBO's forecast are, respectively, 125 basis points and 75 basis points lower than those in the Administration's forecast.)

Differences Over the 2009–2013 Period. CBO's estimate of total outlays under the President's budget over the 2009–2013 period is \$121 billion less than the Administration's, a difference of about 1 percent of total outlays. More than half of that difference is attributable to 2009; most of the rest is attributable to 2013. That difference is largely the result of estimates of net interest costs. CBO's estimate of net interest payments over the next five years is \$104 billion lower than that of the Administration, mostly because of CBO's forecast of lower interest rates.

CBO and the Administration have similar estimates of mandatory spending over the 2009–2013 period; CBO's

estimate is 0.3 percent lower than the Administration's. The biggest difference between the two estimates is for Social Security. CBO projects \$57 billion less in such outlays through 2013 than does the Administration. About \$29 billion of that difference is attributable to CBO's estimate that the first substantial outlays for the President's proposal to establish individual retirement accounts would occur in 2014 rather than in 2013, as shown in the Administration's budget. Another \$20 billion of the difference relates to projections of caseloads under current law in the Old-Age and Survivors Insurance program, and \$9 billion results from differing economic assumptions involving wages and cost-of-living adjustments. In addition, CBO projects that outlays for veterans' compensation, pensions, and burials will be \$32 billion below what the Administration estimates, largely because of differing projections of caseloads and benefits.

CBO's projection of Medicare spending between 2009 and 2013 is \$11 billion below the Administration's, a difference of just 0.5 percent of total Medicare outlays.

CBO estimates \$37 billion less in outlays under current law than does the Administration but \$26 billion more in outlays that would result from enacting the President's policy proposals.

In the other direction, CBO's estimate of Medicaid outlays for the 2009–2013 period exceeds the Administration's by \$39 billion, primarily because of differing projections of spending under current law. Outlays for agriculture programs will be about \$16 billion higher, according to CBO's estimates, with the largest differences attributable to spending for the Federal Crop Insurance Corporation and the Commodity Credit Corporation. CBO also anticipates higher outlays—its estimate is above the Administration's by \$16 billion—for

unemployment compensation, largely as a result of higher projected unemployment.

CBO estimates that between 2009 and 2013, discretionary outlays will be \$15 billion higher (a difference of 0.3 percent of such outlays) than the total in the President's budget. CBO's estimate of discretionary outlays for 2009 is less than the Administration's by \$41 billion (3.5 percent of such outlays), mostly because of differences in the estimates of spending from supplemental appropriations for military operations in Iraq and Afghanistan. CBO's estimate of discretionary outlays from 2010 to 2013 exceeds that of the Administration by \$55 billion, or 1 percent per year, on average.

The Economy Under the President's Budget and Under CBO's Baseline Policy Assumptions

In addition to estimating the direct budgetary impact of the President's proposals (see Chapter 1), the Congressional Budget Office has analyzed how those policies would affect the economy as a whole. CBO estimates that the direct budgetary effect of the President's proposals would be an increase in the cumulative deficit, relative to that shown in the current-law baseline, of \$336 billion, or about 0.4 percent of cumulative gross domestic product, from 2009 to 2013, and a reduction in the cumulative surplus of \$651 billion, or 0.6 percent of cumulative GDP, from 2014 to 2018. (Those estimates do not consider the influence of economic feedback.) Taken together, several major provisions would tend to have mutually offsetting effects on the economy: Some that would tend to reduce output would offset other provisions that would tend to expand it, resulting in modest effects overall.

CBO's estimates of the economic feedback associated with the President's proposals depend on a variety of specific assumptions. However, under any of the assumptions incorporated into this analysis, economic feedback would modify the budgetary effects of the proposals: From 2009 to 2013, the feedback could raise the proposals' cumulative impact to about \$410 billion or reduce it to about \$185 billion. From 2014 to 2018, the feedback could raise the proposals' cumulative impact to about \$670 billion or reduce it to about \$460 billion (see Figure 2-1 and Table 2-1).

How Federal Budget Policies Affect the Economy

Over the long run, the nation's potential to produce goods and services depends on the size and quality of the labor force, on the stock of productive capital (such as factories, vehicles, and computers), and on the nation's

technological expertise. Changes in those determinants of potential output—which economists call “supply-side” changes—can have a lasting, sustainable influence on the economy's ability to supply goods and services.

In the short run, however, economic activity can deviate from its potential level in response to changes in aggregate demand. For example, CBO estimates that output is currently below its potential level, in part because of the collapse of the housing market and the resulting turmoil in the financial markets. Such “demand-side” variations can alter the employment of labor and the use of capital relative to their long-term potential levels.¹ Unlike movements on the supply side of the economy, however, changes in demand generally balance out over time: Long-term corrective forces tend to move the economy back toward its sustainable potential determined by the supply side. Nevertheless, when aggregate demand is low (as it appears to be currently), the positive demand-side effects of government policies such as tax cuts or spending increases can hasten a return to potential output.

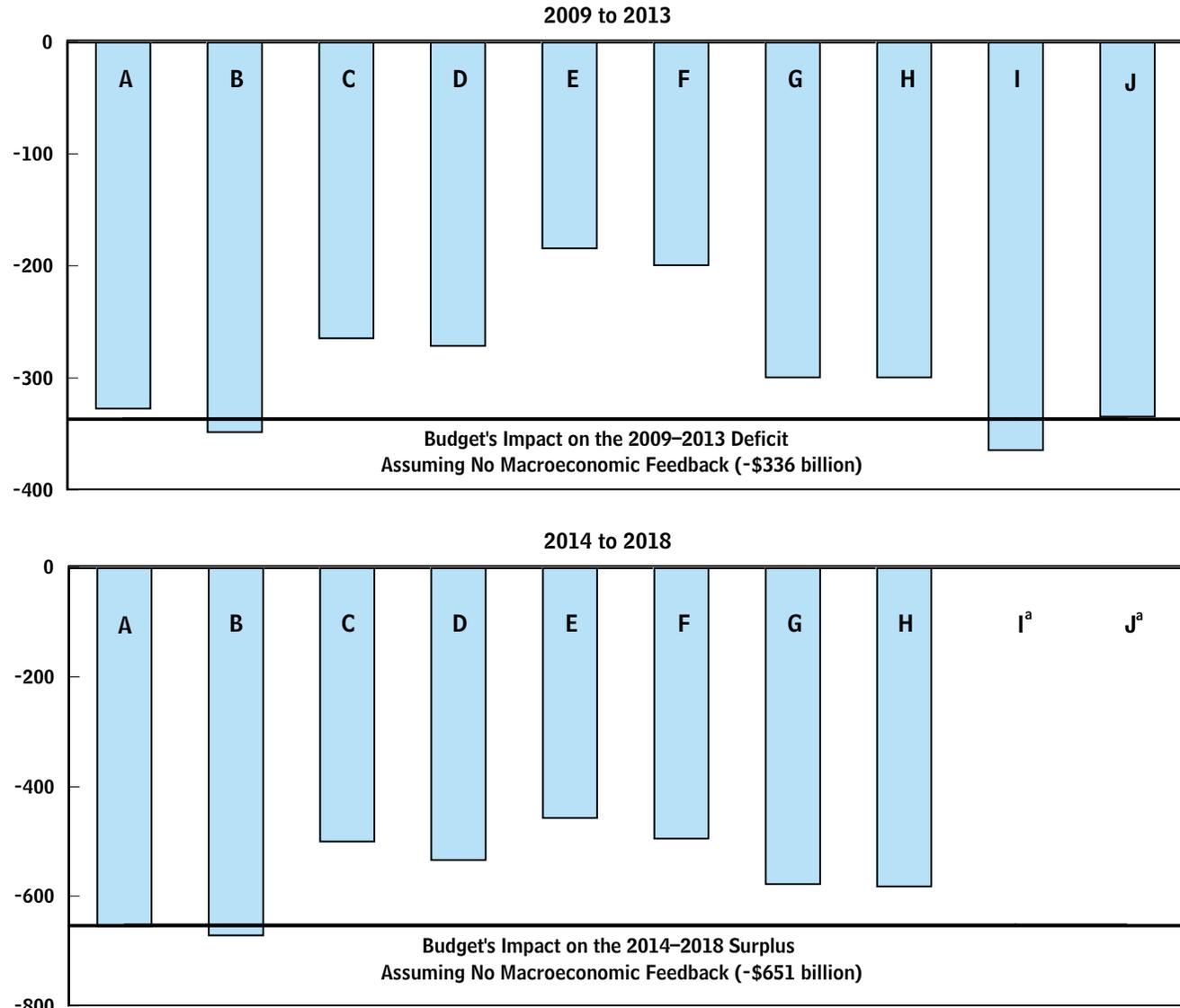
The government's budgetary policies can influence the economy through various channels, some of them affecting the supply side of the economy, some affecting the demand side, and some affecting both. Changes in tax rates can affect the willingness of people to work and to save, potentially influencing short-run demand but also affecting sustainable, long-term supplies of labor and capital. Similarly, changes in government spending for goods and services and in government transfers can affect short-run demand and increase or reduce the amount of resources available for private investment, thus affecting

1. Precipitous changes in supply-side factors, such as the cost of energy, and other types of shocks also can trigger temporary economic shifts.

Figure 2-1.

CBO's Estimates, Using Various Models, of How the President's Budget Would Affect the Deficit or Surplus After Accounting for Economic Effects

(Cumulative change from CBO's baseline, in billions of dollars)



Source: Congressional Budget Office.

Notes: The estimates in the panels above reflect the supply-side effects of the President's proposals on the economy but exclude demand-side economic impact, as explained in the text. A negative change indicates an increase in the cumulative deficit or a decrease in the cumulative surplus relative to CBO's baseline.

CBO's analysis used the following models (which are described in the text): (A) "textbook" high model, (B) "textbook" low model, (C) closed-economy life-cycle model with lower government spending after 2018, (D) closed-economy life-cycle model with higher taxes after 2018, (E) open-economy life-cycle model with lower government spending after 2018, (F) open-economy life-cycle model with higher taxes after 2018, (G) infinite-horizon model with lower government spending after 2018, (H) infinite-horizon model with higher taxes after 2018, (I) Macroeconomic Advisers' model, and (J) Global Insight's model.

a. Because this model is designed primarily to capture business-cycle developments, which are hard to predict beyond a few years, CBO did not compute an estimate for the 2014–2018 period.

Table 2-1.

CBO's Estimates of How the President's Budget Would Affect the Deficit or Surplus After Accounting for Economic Effects

(Cumulative change from CBO's baseline, in billions of dollars)

	2009 to 2013	2014 to 2018
Growth Models		
<i>Without Forward-Looking Behavior</i>		
Textbook Model		
High (Hours worked respond strongly to tax-rate changes)	-328	-655
Low (Hours worked respond weakly to tax-rate changes)	-349	-672
<i>With Forward-Looking Behavior</i>		
Closed-Economy Life-Cycle Model		
Government spending adjusted after 2018	-265	-501
Taxes adjusted after 2018	-272	-535
Open-Economy Life-Cycle Model		
Government spending adjusted after 2018	-185	-458
Taxes adjusted after 2018	-200	-496
Infinite-Horizon Model		
Government spending adjusted after 2018	-300	-579
Taxes adjusted after 2018	-300	-583
Macroeconometric Models		
<i>Supply-Side Contribution</i>		
Macroeconomic Advisers' Model	-365	n.a.
Global Insight's Model	-335	n.a.
<i>Supply-Side and Demand-Side Contributions</i>		
Macroeconomic Advisers' Model	-412	n.a.
Global Insight's Model	-373	n.a.
Memorandum:		
CBO's Estimate of the Budgetary Effects of the President's Proposals Under Baseline Economic Assumptions	-336	-651

Source: Congressional Budget Office.

Notes: A negative number indicates an increase in the cumulative deficit or a decrease in the cumulative surplus relative to CBO's baseline.

The "textbook" growth model is an enhanced version of a model developed by Robert Solow. The life-cycle growth model, developed by CBO, is an overlapping-generations general-equilibrium model. The infinite-horizon growth model is an enhanced version of a model first developed by Frank Ramsey. The models by Macroeconomic Advisers and Global Insight, which are available commercially, are designed to forecast short-term economic developments. The various models reflect a wide range of assumptions about the extent to which people are forward-looking in their behavior: In the textbook model and those by Macroeconomic Advisers and Global Insight, people have the least foresight, whereas in the infinite-horizon model, people's foresight is perfect and extends indefinitely to include a full consideration of effects on descendants.

In models with forward-looking behavior, CBO had to make assumptions about how the President's budget would be financed after 2018. CBO chose two alternatives—adjusting government purchases of goods and services and transfer payments or adjusting marginal tax rates.

n.a. = not applicable.

the long-term size of the capital stock. (CBO's macroeconomic analysis distinguishes between the government's transfers of funds to people and its purchases of goods and services, but most of CBO's models do not differentiate more finely among the various types of government spending to distinguish specific effects on long-term economic performance. In reality, the economic effects of different types of government spending vary.)

The economic effects of changes in revenues and in spending depend on how those changes are financed. In the short run, reductions in taxes or increases in spending can be absorbed into larger budget deficits. Over the long term, however, other policy changes are needed to offset the loss of revenues or the increase in spending and prevent unchecked growth in government debt relative to output.² Those policy changes significantly influence the long-term economic effects of the initial change in spending or revenues.

Supply-Side Effects

The President's budgetary proposals can affect the quantity and the quality of the labor force, the size and composition of the capital stock, and the strength of the nation's technological progress. Each of those supply-side effects helps determine the course of potential economic output.

Labor Force. Potential output is strongly tied to the supply and the quality of labor in the economy. A sustained, long-term increase in total hours worked improves the economy's potential to generate output. CBO's analysis focused on channels through which the President's proposals could affect the number of hours of labor supplied.

The President's proposals could affect the quantity of labor through two main channels. First, several of the policies proposed would *change people's after-tax income*, although those proposals would not significantly alter the marginal tax rates on income resulting from labor.³ (The extension of the child tax credit would raise the after-tax income of some workers, for example, but it would not

affect their marginal tax rates.) In the absence of a change in marginal rates, an increase in after-tax income tends to reduce the number of hours of labor supplied because people can maintain their standard of living with less work; conversely, a decline in income tends to increase hours supplied.

Second, some provisions would *change after-tax income and after-tax compensation for each additional hour of work*. (The extension of the marginal tax rates on income enacted in the Economic Growth and Tax Relief Reconciliation Act of 2001 would increase both. Other provisions, such as the President's health proposal, would reduce them in most years.) Provisions that raise after-tax income and incremental after-tax compensation (and provisions that reduce both) have opposing effects on people's incentives. In the case of the extension of EGTRRA, for example, workers would be encouraged to work longer hours if they earned more for each extra hour of labor they supplied. But a disincentive also is possible: Workers might find they could maintain current after-tax income without working extra hours, so they would consider not increasing their work hours.

On balance, those opposing incentives largely offset one another, although the first set (more pay for more hours) slightly outweighs the second. Reductions in marginal tax rates will tend to increase modestly the hours of labor that workers supply, primarily because those reductions will draw secondary earners (for example, the spouse of a household's primary breadwinner) into the labor force.⁴ Conversely, increases in marginal tax rates will modestly decrease hours worked.

CBO estimates that if enacted, the President's policies would lower the marginal tax rate on labor by more than 3 percent in 2008, compared with the rate shown in CBO's baseline, largely as a result of the proposal to extend for one year an increase in the exemptions allowed under the alternative minimum tax (see Table 2-2).

2. Increased deficits and the attendant increases in interest payments must be offset by policy changes at some point, or interest costs would compound relative to output over time, driving the debt-to-output ratio ever higher (under the assumption, which CBO's findings incorporate, that the rate of interest on government debt is higher than the rate of economic growth).
3. The marginal tax rate is the rate on the last dollar of income.

4. See Congressional Budget Office, *Labor Supply and Taxes* (January 1996). Since that report was published, CBO has revised downward its estimates of total wage elasticity and substitution elasticity for secondary earners because of evidence that their responsiveness has declined over time as their participation in the labor force has grown. Also see Francine D. Blau and Lawrence M. Kahn, "Changes in the Labor Supply Behavior of Married Women: 1980–2000," *Journal of Labor Economics*, vol. 25, no. 3 (2007), pp. 393–438.

Table 2-2.**CBO's Estimates of Effective Federal Marginal Tax Rates on Labor Income**

(Percent)

Calendar Year	Tax Rate Under Current Law	Tax Rate Under the President's Budget	Difference	
			Percentage Points	Percent
2008	30.5	29.4	-1.1	-3.5
2009	30.7	30.6	-0.1	-0.4
2010	31.0	31.0	0.1	0.2
2011	32.3	31.0	-1.2	-3.8
2012	32.5	31.5	-1.0	-2.9
2013	32.5	31.9	-0.7	-2.0
2014	32.6	32.2	-0.4	-1.3
2015	32.7	32.5	-0.2	-0.6
2016	32.7	32.7	*	0.1
2017	32.8	33.1	0.3	0.8
2018	32.8	33.3	0.5	1.5

Source: Congressional Budget Office.

Note: The effective federal marginal tax rate on income from labor is the share of the last dollar of such income taken by federal individual income and payroll taxes.

* = between zero and 0.5 percentage points.

The President's policies would leave marginal rates nearly unchanged in 2009 and 2010. After 2010, two sets of proposals would have opposing effects on marginal tax rates. Proposals that would make some provisions of the 2001 and 2003 tax legislation permanent would reduce marginal rates by nearly 6 percent in 2011 and by somewhat less in the following years (because the AMT would offset an increasing share of the marginal rate reductions over time). However, beginning in 2009, proposed changes in the tax treatment of health insurance premiums would raise marginal rates on labor by gradually increasing amounts.⁵ Together, those proposals would reduce the effective marginal federal tax rate on labor income by about 4 percent in 2011. As the effects of the health proposals grew larger each year, however, that reduction would shrink, until the net result would be a

small increase that began in 2016 and rose to about 1.5 percent by 2018.

Taking into account the effects described above, CBO estimates that the President's budgetary proposals would probably increase the number of hours people work in 2008 but have only a small effect in 2009 and 2010. In the first few years after 2010, reductions in marginal tax rates might lead workers to increase their work effort. However, over the 2014–2018 period, the President's proposals would tend to have a modest influence, on average, on the number of hours supplied.

Improvements in the amount of education, training, and experience workers have and in their efforts on the job—all improve the quality of each hour worked—also could result in higher potential output. However, CBO did not incorporate such additional labor quality effects into this analysis because they would not produce a measurable effect in the 10-year projection period.

5. CBO's current estimate of the effect on marginal tax rates of the proposal to change the tax treatment of health insurance premiums is initially smaller than last year's because this year's estimate assumes that the effect on marginal rates would phase in slowly. The proposal affects marginal tax rates only to the extent that people are able to adjust the quantity of employer-provided health insurance they receive. This year's estimate assumes that people are able to make that adjustment only slowly, whereas last year's estimate assumed they could make it right away.

Capital Stock. The President's budgetary policies would influence the size of the nation's capital stock primarily by affecting national saving. National saving is private saving minus the budget deficit; an increase in private saving raises national saving, whereas an increase in the budget

deficit reduces it. An overall decline in national saving reduces the capital stock owned by U.S. citizens over time, either through a decrease in domestic investment or through an increase in net borrowing from abroad, or both.

In every year from 2008 to 2018, except 2010, the President's proposals would expand the federal deficit or shrink the surplus relative to that in CBO's baseline. However, two proposals that contribute significantly to that outcome would, in CBO's judgment, have little effect on national saving. First, the establishment of individual accounts in Social Security would expand private saving but add to the budget deficit; the net effect on national saving would be much smaller than would be the increase in the deficit itself. (The net effect of that proposal on national saving depends on the reaction of households to the funds deposited into individual accounts and on the effect of the deposits on federal budget policy.) Second, extending the repeal of the estate tax would produce an increase in income that would nearly all be saved, almost entirely offsetting the resulting decline in government revenues. As a result, the higher deficits that stemmed from those proposals, by themselves, would have only a slight, negative effect on national saving.

Several of the President's tax proposals might spur private saving by reducing the effective marginal tax rates on capital income and thus raising the after-tax rate of return on savings. Through that channel, the tax proposals would influence private saving in two opposing ways, just as lowering the marginal tax rate on labor income would have opposing effects on the supply of labor: Higher after-tax returns would tend to increase saving and thus reduce current consumer spending, but they also would boost the value of existing assets, making households wealthier and thus tending to encourage spending. On balance, the combined effect on spending of higher after-tax returns can be either positive or negative, and researchers generally conclude that the effect is small. Nevertheless, to cover other possibilities, CBO included in its analysis a range of plausible assumptions about how households might respond to changes in the after-tax rate of return on savings. At one end of the range, some of CBO's models assumed that the rate would have little or no effect on how households allocated income between spending and saving; at the other end, some models

assumed that raising the rate of return would boost saving and reduce spending significantly.

The provisions of the President's budget that could affect the after-tax rate of return on capital include extending EGTRRA's marginal income tax rates, extending the cuts in tax rates on dividends and capital gains (enacted in the Jobs and Growth Tax Relief Reconciliation Act of 2003), and expanding tax-free savings accounts. (Appendix B provides greater detail on the potential economic effects of the President's proposals for dividend and capital gains taxation, tax-free savings accounts, the estate tax, and individual accounts in Social Security.) CBO summarized the effects of most of those provisions on the rate of return on savings by estimating the aggregate effect they would have on the average effective marginal tax rate on capital income, compared with CBO's estimate of that rate under current law (see Table 2-3).⁶ According to CBO's estimates, the effective marginal federal tax rate on capital income during the 2011–2018 period would be about 14 percent to 15 percent lower under the President's proposals than under the policies assumed in CBO's baseline.⁷

Taking into account the effects discussed above, CBO estimates that between 2009 and 2013, policies in the President's proposed budget could result in either a smaller or a larger capital stock in private hands than would be predicted on the basis of CBO's baseline. The estimated effect on the capital stock depends to a great extent on how much a change in the after-tax rate of return on saving is assumed to alter consumer spending. Under the assumption that the effect is small, the higher deficits under the President's proposals would lead to a lower capital stock. Under the assumption that higher rates of return on saving tend to significantly reduce consumer spending, the resulting boost in saving could outweigh the effect of higher deficits, resulting in increases in the capital stock.

6. Both sets of estimates yield effective tax rates that are below all but the lowest statutory marginal rates because some capital income (for example, interest income that flows into tax-free savings accounts or pension funds and rental income from owner-occupied housing) is not taxed. The expansion of tax-free savings accounts was analyzed differently. See Appendix B for details.

7. For a description of CBO's method for estimating effective tax rates, see Congressional Budget Office, *Computing Effective Tax Rates on Capital Income* (December 2006).

Table 2-3.**CBO's Estimates of Effective Federal Marginal Tax Rates on Capital Income**

(Percent)

Calendar Year	Tax Rate Under Current Law	Tax Rate Under the President's Budget	Difference	
			Percentage Points	Percent
2008	14.0	14.2	0.2	1.2
2009	14.1	14.1	*	0.3
2010	14.0	14.0	*	0.3
2011	16.3	13.8	-2.5	-15.1
2012	16.3	13.8	-2.5	-15.2
2013	16.2	13.8	-2.4	-15.0
2014	16.1	13.7	-2.4	-14.7
2015	16.1	13.7	-2.3	-14.4
2016	16.0	13.7	-2.3	-14.6
2017	16.0	13.6	-2.4	-14.7
2018	16.0	13.6	-2.3	-14.5

Source: Congressional Budget Office.

Note: The effective federal marginal tax rate on income from capital is the share of the last dollar of such income taken by federal individual income and corporate income taxes.

* = between zero and 0.5 percentage points.

Some policies proposed in the President's budget would not only affect the amount of the capital stock but would change the mix of different types of capital within that stock—a shift that also could affect potential output. The proposal in the President's budget to extend the lower tax rates on corporate dividends and capital gains would probably have the largest effect on the composition of the capital stock because it would reduce taxes on personal income received from the corporate sector, thus encouraging a shift of some capital from the noncorporate to the corporate sector.

Currently, some corporate income is taxed once at the business level (through the corporate income tax) and again at the personal level (through the individual income tax on dividends and capital gains). (Not all corporate income is taxed in this fashion—some is effectively not taxed at the business level, and some is not taxed at the personal level.) That tax treatment affects the way that capital is allocated in the economy because it discourages investment in the corporate sector relative to investment in the housing and noncorporate business sectors. As a result, less capital may be held in the corporate sector than is optimal for the economy's efficient operation. Extending lower tax rates on dividends and capital gains would reduce that effect, enhancing economic output.

Extending the current tax rates on dividends and capital gains also would diminish the impact of the baseline's current-law assumption that tax rates will rise after 2010. The taxation of dividends and capital gains may encourage greater corporate reliance on debt to finance investment than would otherwise be the case. Because businesses may deduct interest payments on debt they owe (such as bonds they have issued) from any taxable income, they can lower their tax payments by borrowing instead of issuing stock to finance their investments. Interest payments thus are taxed once, at the personal level. If the current tax rates expire as assumed in the baseline, the tax treatment of interest payments on debt may influence businesses' decisions about financing and lead to an inefficient allocation of resources.

Technological Progress. New and improved technical processes and products are the source of most long-term growth in productivity, and the President's budgetary proposals could affect the economy by influencing the rate at which technological progress is made. Researchers, however, understand little about how taxation and spending policies affect technological innovation. Therefore, for the most part CBO has not incorporated into its

analysis effects on technological progress arising from the President's proposals.⁸

Demand-Side Effects

The demand-side effects of the President's proposals would vary over time. In 2008 and 2009, increased discretionary spending would provide a boost to demand. Starting in 2010, however, the proposals would reduce discretionary spending, which tends to reduce demand, but also cut taxes, which in turn tends to encourage private consumption and thereby to enhance demand. The net effect on demand is positive in the early years and negative in the later years (CBO analyzes demand-side effects only through 2014).

In general, increases in demand may cause businesses to temporarily gear up production and hire more workers; decreases in demand may have opposite effects. From a demand-side perspective, budgetary policies that raised private and public consumption might offset some of the current slowdown in economic output. Nevertheless, demand-side effects are relatively fleeting: They can only temporarily raise or lower output beyond what it would otherwise be because stabilizing economic forces tend to move output back toward its potential level. Moreover, policies that increase demand above its potential level by raising government consumption or spurring private consumer spending are likely to lower national income in the long run because such policies eventually can tend to reduce the size of the nation's capital stock and thus reduce national income.

The President's budget included one proposal in particular, the "economic growth package" of tax reductions, which would tend to produce positive demand-side effects. However, that proposal is not included in this analysis because a largely equivalent measure, the Economic Stimulus Act of 2008, has already been signed into law. It is therefore included in CBO's baseline rather than in the President's budget.

8. CBO used two commercial macroeconomic models to estimate the demand-related effects of the President's proposals. Global Insight's model has potential GDP responding positively to spending for research and development—which in turn would be stimulated by the proposal to extend tax credits for such activities.

The Models and Their Results

CBO used five economic models to estimate the effects of the President's budgetary proposals relative to the policy assumptions underlying CBO's baseline. The models, which fall into two broad categories, focus on somewhat different aspects of the economy and reflect distinct ways of thinking about it. Three of the models estimate supply-side effects only; the other two are commercial macroeconomic models that emphasize the business-cycle aspects of the economy and are designed primarily to analyze demand-side effects, although they incorporate some supply-side influences as well. Each type of model represents individuals' economic decisions—in particular, the degree to which individuals anticipate future developments—in an idealized way that does not capture all aspects of actual behavior. Even so, the results provide a reasonable range of estimates of individuals' responses to changes in policy. (Figure 2-2 presents, year by year, the estimated effect of the President's proposals on some key inputs for CBO's various models—effective tax rates on labor and capital and the size of the deficit or surplus.)

Supply-Side Effects

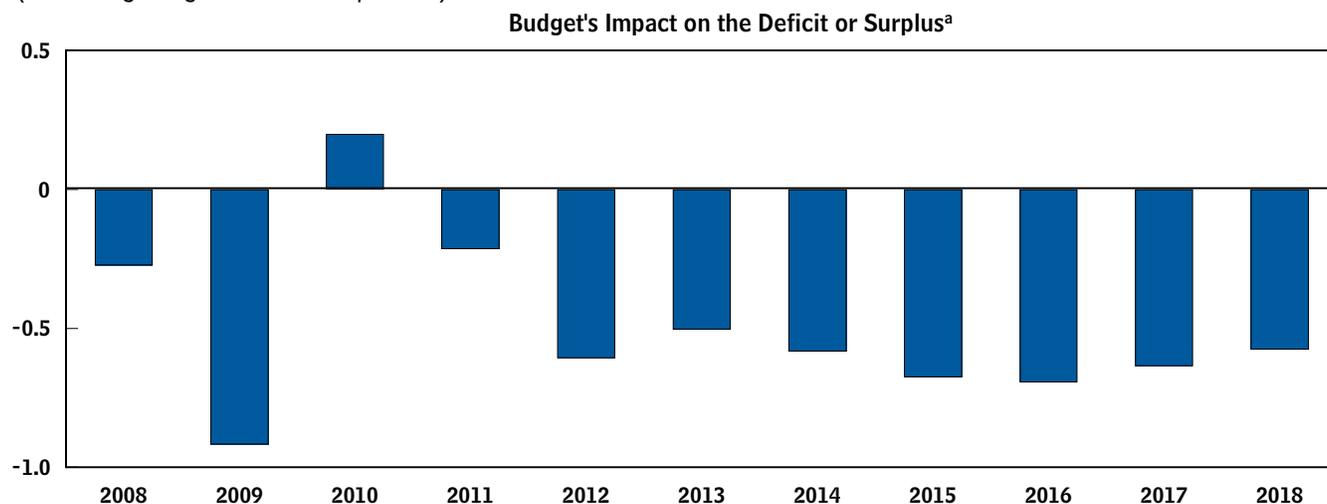
CBO used three growth models to analyze the supply-side effects of the President's proposals from 2008 through 2018.⁹ The models—a "textbook" growth model, a life-cycle growth model, and an infinite-horizon growth model—differ mainly in their assumptions about how far into the future people look in making plans (see Appendix C). The textbook growth model assumes, in effect, that people do not explicitly consider expected future policies when they make plans—that is, the model incorporates no forward-looking behavior. Moreover, the model does not account for the way the changes in marginal tax rates on capital income might influence investment.

9. Growth models are often called "supply-side models." They assume that the labor market is always in equilibrium (that fiscal policy has no effect on the unemployment rate). CBO presents effects for the 2009–2013 and 2014–2018 periods because the main purpose of this discussion is to illustrate how economic feedback could affect the budget numbers presented in Chapter 1 for those periods. The models showed positive supply-side effects on output in 2008 that stemmed mainly from reduced tax rates on labor income as a result of the proposal to extend for one year the increase in the exemptions allowed under the alternative minimum tax. The positive effects in 2008 are reflected in calculations of revenues, government debt, and interest costs for 2009 and beyond.

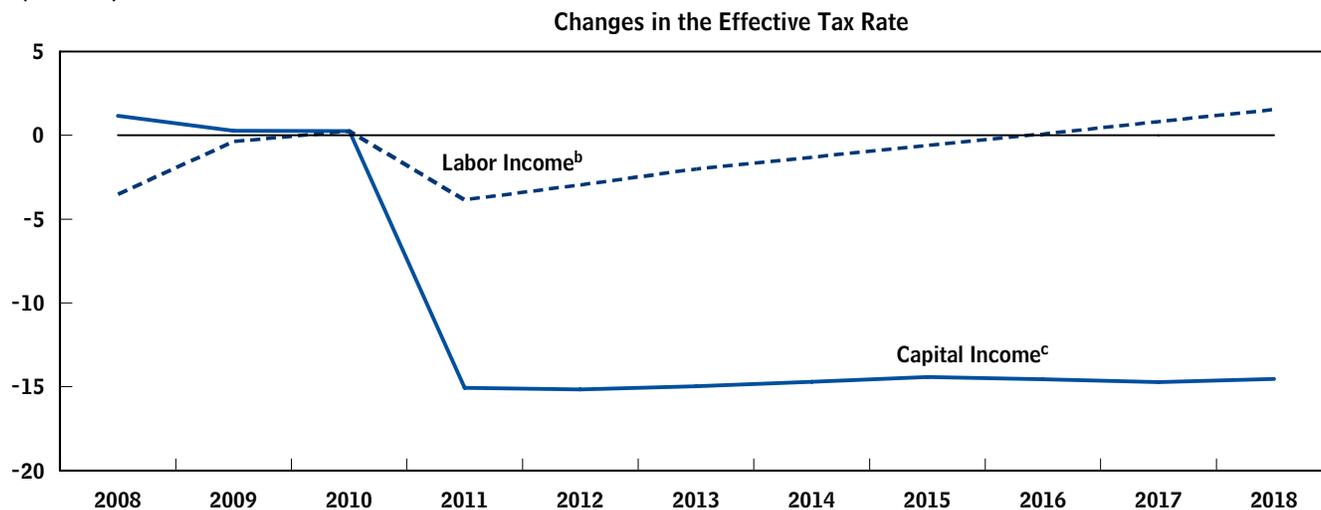
Figure 2-2.

Estimated Effects of the President's Budget on the Deficit or Surplus and on the Effective Tax Rates on Capital Income and Labor Income

(Percentage of gross domestic product)



(Percent)



Source: Congressional Budget Office.

Note: Effects on the deficit or surplus are by fiscal year; impacts on effective tax rates are by calendar year.

- a. The bars represent the effects of the President's proposals on the deficit or surplus under CBO's baseline economic assumptions. A negative change indicates an increase in the annual deficit or a decrease in the annual surplus relative to CBO's baseline.
- b. Changes in the effective federal marginal tax rate on income from labor (the share of the last dollar of such income taken by federal individual income and payroll taxes).
- c. Changes in the effective federal marginal tax rate on income from capital (the share of the last dollar of such income taken by federal individual income and corporate income taxes).

In contrast, the life-cycle model incorporates the assumption that people make lifelong plans for working and saving but do not consider events that might occur after they die. The infinite-horizon model differs yet again, assuming, in effect, that people behave as if they will live forever—or, more realistically, that they care about the well-being of their descendants as well as their own.¹⁰ Moreover, the life-cycle and infinite-horizon models assume that people know with certainty how the government will resolve its long-term budget imbalance, whether by higher tax rates, by lower spending and transfer payments, or by some combination of the two. Both the life-cycle and the infinite-horizon models assume that households face uncertainty about future wages and could become credit constrained (that is, unable to borrow to maintain their spending) if their wages decline significantly.

CBO used the textbook growth model to estimate effects under two separate assumptions about how much people will adjust their work hours in response to changes in marginal tax rates: a “low” assumption, under which workers respond very little, and a “high” assumption, under which their response is on the high side of the consensus range of empirical estimates from studies based on one-year changes in labor supply.¹¹ CBO found that under the low assumption, the President’s proposals would decrease gross national product (GNP) by 0.2 percent, on average, over the 2009–2013 period.¹² Under the high assumption, the proposals would have little effect on GNP during those years. Over the 2014–2018 period, the proposals would reduce GNP by 0.1 percent to 0.2 percent (see Table 2-4). The effects estimated by the textbook growth model become more negative over time as effects of the proposed extension of the provisions in EGTRRA and JGTRRA on marginal tax rates on labor

income are increasingly offset by the effects of the health proposal. (The model projects negative effects on the capital stock over the entire period, on average.)

For several reasons, the results of the life-cycle and infinite-horizon growth models differ from those of the textbook growth model. Unlike the textbook growth model, they are built on the assumption that individuals adjust their decisions about work, spending, and saving both in response to changes in marginal tax rates and after-tax rates of return and in anticipation of future changes in policy.

The forward-looking characteristics of the life-cycle and infinite-horizon growth models require CBO to make assumptions about what people believe will happen in the future, both in current law and under the President’s proposed policies, not only during the 10-year projection period but into the indefinite future as well. For its analysis, CBO assumed that people believe that the budgetary policies being assessed—those of the President or of CBO’s baseline—will be maintained over the entire 10-year projection period. (In reality, people may well believe that the policies might change at some point during that time.)

For the years after 2018, however, matters are complicated by the fact that the policies reflected both in CBO’s baseline and in the President’s proposals are unsustainable in the long run, owing to projected increases in spending for health and retirement programs.¹³ To address that difficulty, CBO assumed that people expect the fiscal imbalances projected under current law to be resolved over the long run. It then made explicit assumptions about the manner in which *changes* in deficits or surpluses under the President’s budgetary policies, relative to those

10. This year CBO incorporated a new assumption about income variability in the infinite-horizon model. On the basis of academic research, CBO increased the year-to-year variation in income that people are assumed to face (see David Domeij and Jonathan Heathcote, “On the Distributional Effects of Reducing Capital Taxes,” *International Economic Review*, vol. 45, no. 2 (May 2004), pp. 531–532). That change tends to reduce the estimated effect of policy actions (such as changes in marginal tax rates).

11. CBO’s estimates used data from a large sample of taxpayers to account for the effects of changes in marginal tax rates and in after-tax income under the President’s proposals. The models incorporated a larger response to changes in marginal tax rates among secondary earners than among primary earners.

12. In presenting the economic effects of the President’s budgetary proposals, CBO uses gross national product as its measure of output rather than the more commonly cited gross domestic product. Changes in GNP exclude foreigners’ earnings on investments in the domestic economy but include domestic residents’ earnings overseas and are therefore a better measure of the proposals’ effects on domestic residents’ income than are changes in GDP in an open economy like that of the United States. The budget calculations presented in Table 2-5 reflect the fact that tax treaties and other factors result in some foreign income being effectively untaxed.

13. See Congressional Budget Office, *The Long-Term Budget Outlook* (December 2007).

Table 2-4.

CBO's Estimates of How the President's Budget Would Affect Real Gross National Product

(Average percentage difference from CBO's economic assumptions, by calendar year)

	2009 to 2013	2014 to 2018
Growth Models		
<i>Without Forward-Looking Behavior</i>		
Textbook Model		
High (Hours worked respond strongly to tax-rate changes)	*	-0.1
Low (Hours worked respond weakly to tax-rate changes)	-0.2	-0.2
<i>With Forward-Looking Behavior</i>		
Closed-Economy Life-Cycle Model		
Government spending adjusted after 2018	0.4	0.6
Taxes adjusted after 2018	0.4	0.4
Open-Economy Life-Cycle Model		
Government spending adjusted after 2018	0.8	1.2
Taxes adjusted after 2018	0.7	1.0
Infinite-Horizon Model		
Government spending adjusted after 2018	0.2	0.3
Taxes adjusted after 2018	0.2	0.2
Macroeconometric Models		
<i>Supply-Side Contribution</i>		
Macroeconomic Advisers' Model	-0.2	n.a.
Global Insight's Model	*	n.a.
<i>Supply-Side and Demand-Side Contributions</i>		
Macroeconomic Advisers' Model	-0.2	n.a.
Global Insight's Model	-0.4	n.a.

Source: Congressional Budget Office.

Notes: The "textbook" growth model is an enhanced version of a model developed by Robert Solow. The life-cycle growth model, developed by CBO, is an overlapping-generations general-equilibrium model. The infinite-horizon growth model is an enhanced version of a model first developed by Frank Ramsey. The models by Macroeconomic Advisers and Global Insight, which are available commercially, are designed to forecast short-term economic developments. The various models reflect a wide range of assumptions about the extent to which people are forward-looking in their behavior: In the textbook model and those by Macroeconomic Advisers and Global Insight, people have the least foresight, whereas in the infinite-horizon model, people's foresight is perfect and extends indefinitely to include a full consideration of effects on descendants.

In models with forward-looking behavior, CBO had to make assumptions about how the President's budget would be financed after 2018. CBO chose two alternatives—adjusting government purchases of goods and services and transfer payments or adjusting marginal tax rates.

* = between -0.05 percent and 0.05 percent; n.a. = not applicable.

in CBO's baseline, would eventually be reflected in spending and taxes.

The life-cycle and infinite-horizon models each generated two sets of estimates that were based on different assumptions about that financing. Under one assumption, people believe that the proposals will be financed by gradually adjusting government spending for goods and

services and for transfer payments (as shares of GNP) over the 2019–2028 period. Under the other assumption, people believe that the proposals will be financed by gradually adjusting marginal tax rates over the same period.

Under either financing assumption, the infinite-horizon model projects that the President's proposals will increase GNP by 0.2 percent over the 2009–2013 period.

Depending on the assumption, the model projects increases in GNP of 0.2 percent or 0.3 percent over the 2014–2018 period. The infinite-horizon model estimates more positive effects on output than does the textbook growth model in part because it projects a larger boost in private saving when the extension of the 2001 and 2003 tax provisions increases the after-tax return on saving, leading to a higher level of the capital stock, on average. (In the textbook growth model, those higher returns are not assumed to affect private saving.) The effects of the proposals on labor supply are also somewhat more positive under the assumptions of the infinite-horizon model than under those of the textbook growth model.

The life-cycle model projects considerably more positive effects on output. Depending on which assumption about financing is used and whether the economy is considered to be open or closed to flows of foreign capital, it projects that the President's proposals will increase GNP by 0.4 percent to 0.8 percent over the 2009–2013 period and by 0.4 percent to 1.2 percent over the 2014–2018 period. The life-cycle model estimates a larger effect on output than does the infinite-horizon model in part because its assumptions imply a greater response of labor supply to marginal tax rates, and, in most years, marginal tax rates on labor income are lower under the President's proposals. In addition, the life-cycle model assumes that private saving and labor supply increase by a greater amount in response to reduced transfer payments (such as the reductions in Medicare spending proposed by the President) because people have a shorter horizon over which to make up for those reductions than they do in the infinite-horizon model.

The effects of the President's proposals are smaller under the assumption of a closed economy because changes in wages and interest rates offset some of the effects of the proposals on labor supply and saving. For example, in 2011 and 2012, reduced marginal tax rates on labor encourage more hours of work, but under the closed-economy assumption the resulting addition to labor supply leads to a decline in wages, damping the effect. Similarly, in the later years of the projection, when reduced taxes on capital lead to increases in saving, growth in the capital stock causes interest rates to decline, offsetting some of the effect of taxes on the rate of return to saving. Under the open-economy assumption, by contrast, wages and interest rates are assumed always to be equal to worldwide levels and are not affected by domestic

policies. The United States' economy probably lies somewhere between the open- and closed-economy assumptions used in the life-cycle model. It is open to capital flows, but it also is large enough to influence world rates of interest and wages.¹⁴

The supply-side effects of the President's proposed policy changes would feed back to the budget (see Tables 2-1 and 2-5). Using the assumptions underlying its baseline, CBO projects that the President's proposals will expand the cumulative deficit over the 2009–2013 period by \$336 billion, ignoring economic feedback, but that feedback could add as much as \$13 billion to the total or subtract as much as \$151 billion from it, depending on which set of assumptions is used in the analysis. For the period from 2014 to 2018, the President's budgetary policies are projected to boost the cumulative deficit by \$651 billion, ignoring economic feedback, but that feedback could add as much as \$21 billion to the increase or subtract as much as \$193 billion from it. No single number is likely to provide an accurate measure of the feedback, but the numbers presented here illustrate the range of its probable magnitude.

Demand-Side Effects

Because demand-side economic developments become increasingly hard to estimate the farther projections extend into the future, CBO analyzed demand-side effects of the President's budgetary proposals only for the first five years of the 2009–2018 period. To do so, it used macroeconomic forecasting models created by two private forecasting concerns—Macroeconomic Advisers and Global Insight. Each model includes an embedded growth model, but each concentrates primarily on demand-side economic effects.

As with the textbook growth model, CBO adjusted the models of Macroeconomic Advisers and Global Insight to incorporate its own estimates of how workers would adjust their hours worked in response to the changes in marginal tax rates on labor income implied by the President's proposals.

14. The infinite-horizon model assumes a closed economy. The textbook growth model and the models of Macroeconomic Advisers and Global Insight make assumptions that are effectively intermediate between the life-cycle model's open- and closed-economy assumptions.

Table 2-5.**Budgetary Implications of the Macroeconomic Effects**

(Cumulative change from CBO's estimate of the President's budget, in billions of dollars)

	2009 to 2013	2014 to 2018
Growth Models		
<i>Without Forward-Looking Behavior</i>		
Textbook Model		
High (Hours worked respond strongly to tax-rate changes)	8	-4
Low (Hours worked respond weakly to tax-rate changes)	-13	-21
<i>With Forward-Looking Behavior</i>		
Closed-Economy Life-Cycle Model		
Government spending adjusted after 2018	70	150
Taxes adjusted after 2018	64	116
Open-Economy Life-Cycle Model		
Government spending adjusted after 2018	151	193
Taxes adjusted after 2018	135	155
Infinite-Horizon Model		
Government spending adjusted after 2018	35	72
Taxes adjusted after 2018	35	68
Macroeconometric Models		
<i>Supply-Side Contribution</i>		
Macroeconomic Advisers' Model	-29	n.a.
Global Insight's Model	*	n.a.
<i>Supply-Side and Demand-Side Contributions</i>		
Macroeconomic Advisers' Model	-76	n.a.
Global Insight's Model	-38	n.a.

Source: Congressional Budget Office.

Notes: Numbers in this table reflect the effects on the cumulative deficit or surplus of the economic effects shown in Table 2-4. (Negative numbers indicate an increase in the deficit; positive numbers, a reduction.) They do not include the estimated costs of the President's budgetary proposals under CBO's baseline economic assumptions. The total effect of the proposals on the cumulative deficit or surplus, including both those direct costs and the secondary effects shown above, appear in Table 2-1.

The "textbook" growth model is an enhanced version of a model developed by Robert Solow. The life-cycle growth model, developed by CBO, is an overlapping-generations general-equilibrium model. The infinite-horizon growth model is an enhanced version of a model first developed by Frank Ramsey. The models by Macroeconomic Advisers and Global Insight, which are available commercially, are designed to forecast short-term economic developments. The various models reflect a wide range of assumptions about the extent to which people are forward-looking in their behavior: In the textbook model and those by Macroeconomic Advisers and Global Insight, people have the least foresight, whereas in the infinite-horizon model, people's foresight is perfect and extends indefinitely to include a full consideration of effects on descendants.

In models with forward-looking behavior, CBO had to make assumptions about how the President's budget would be financed after 2018. CBO chose two alternatives—adjusting government purchases of goods and services and transfer payments or adjusting marginal tax rates.

* = between zero and \$500 million; n.a. = not applicable.

Like the textbook growth model, Macroeconomic Advisers' and Global Insight's models are not forward-looking—people, as the models represent them, do not behave as though they have specific expectations about future policies or economic developments. However, the models do represent individuals as responding to some economic changes in the same way that they have responded in the past, regardless of the source of those changes. For example, people are assumed to react to proposals to change marginal income tax rates and after-tax labor income in roughly the same way they did, on average, when after-tax wages and income changed in the past.

The lack of forward-looking behavior in the macroeconomic models implies that specific policy changes that are scheduled to occur in the future will not affect current behavior unless special adjustments are made to mimic such behavior.¹⁵ For example, the President's proposals would reduce taxes throughout the projection period. Those lower taxes would increase the amount of after-tax income that people expected in the future, which might cause them to boost their spending today (as the forward-looking models imply). In the macroeconomic models, however, those changes in taxes affect consumer spending only when they occur.

CBO explored the relative magnitude of demand- and supply-side effects of the proposed policies by adjusting monetary policy responses in the models. For one set of scenarios, CBO assumed that the Federal Reserve would respond to economic developments in a standard way that would accommodate demand- and supply-side effects.¹⁶ For a second set, CBO assumed that the Federal Reserve would respond in such a way as to hold the unemployment rate as projected in CBO's baseline. The second approach produced an estimate of the implications of the proposals for potential (nonsyclical) GNP—in other words, the supply-side effects. Subtracting the

second set of results from the first provides an estimate of the demand-side effects of the proposed policies.¹⁷

Incorporating CBO's estimate of effects on labor supply, the Macroeconomic Advisers' model predicted that the demand- and supply-side effects of the President's proposed policies would decrease GNP by 0.2 percent, on average, between 2009 and 2013 (see Table 2-4 on page 39). Global Insight's model forecast a decrease of 0.4 percent. The Macroeconomic Advisers' model projected that the supply-side effects of the President's proposals would decrease output by 0.2 percent over the 2009–2013 period, whereas the Global Insight model projected, on average, little supply-side effect on output.

Both models conclude that the proposals' projected economic impacts would feed back to the budget and affect the size of the projected deficit. According to the projections from the Macroeconomic Advisers' model, feedback effects on the supply side could add \$29 billion to the \$336 billion increase in the deficit projected for the 2009–2013 period under the CBO baseline's economic assumptions (see Table 2-5). By the estimates of Global Insight's model, the supply-side feedback of the President's proposals over the same period would have little effect on the deficit.

On the demand side, the proposals' feedback effects on the budget would be similar in the two models. In the Macroeconomic Advisers' model, the proposals' effect on demand would increase the deficit by about \$47 billion over the 2009–2013 period, yielding an overall feedback from demand- and supply-side effects of raising the deficit by \$76 billion over the period. In Global Insight's model, negative demand-side effects lead to an overall feedback effect that raises the deficit by \$38 billion from 2009 to 2013. The overall increase in the deficit is greater as estimated by the Macroeconomic Advisers' model than it is by Global Insight's model, despite a smaller estimated decline in output, because the Macroeconomic Advisers' model projects an increase in interest rates, on average, which raises federal interest payments, whereas Global Insight's model projects a decrease in interest rates.

15. One such adjustment is that stock prices are assumed to immediately incorporate the effects of extending lower rates on income earned from capital gains and dividends, even though the extension would not affect tax rates until after 2010.

16. More specifically, those scenarios assume that the Federal Reserve acts according to a "Taylor rule" in which the target interest rate depends on the gap between the actual and desired rate of inflation and the gap between actual and potential output.

17. The use of monetary policy to model supply-side effects is only an approximation because changes in monetary policy yield changes in interest rates that are not completely analogous to supply-side effects.

Changes in CBO's Baseline Since January 2008

In conjunction with its annual analysis of the President's budgetary proposals, the Congressional Budget Office (CBO) typically updates its baseline budget projections, which show the paths of federal spending and revenues over the next 10 years under current laws and policies (see Table A-1). This year, the updated baseline reflects new information from various sources, including the President's budget, an updated economic forecast by CBO, and legislation enacted since mid-January, when CBO completed its previous baseline projections.¹ In most years, CBO does not update its economic forecast when it prepares its March baseline. However, this year, in light of new data about the weakness of the economy, recent actions by the Federal Reserve, and the enactment of the stimulus package, CBO revised its economic projections in February.

CBO constructs its baseline in accordance with provisions set forth in the Balanced Budget and Emergency Deficit Control Act of 1985 and the Congressional Budget and Impoundment Control Act of 1974. (Although the provisions of the Deficit Control Act that pertain to the baseline expired at the end of September 2006, CBO continues to follow that law's specifications in preparing its baseline.) To project revenues and mandatory spending, CBO assumes that current laws continue unchanged in the future, with only a few exceptions.² That approach includes the assumption that various changes in tax law enacted since 2001 expire as scheduled, by the end of December 2010, causing a rise in revenues thereafter. To project discretionary spending, CBO adjusts the current year's budget authority for inflation and for certain other factors, as the Deficit Control Act specified. The resulting baseline projections are not intended to be a prediction of future budget outcomes. Rather, they serve as a bench-

mark that lawmakers can use to measure the effects of spending or revenue proposals, such as those in the President's budget.

Since January, CBO has increased its current-law estimate of the deficit for 2008 by \$138 billion, to \$357 billion (see Table A-2). Most of that change stems from the enactment of the Economic Stimulus Act of 2008 (Public Law 110-185) in February. The net impact that CBO's baseline updates have had on its projection of the cumulative surplus for 2009 through 2018, however, has been minimal—a drop of \$4 billion from CBO's January estimate of \$274 billion. For that 10-year period, changes in economic assumptions improve the budget outlook by an average of \$30 billion a year—but technical changes and the impact of enacted legislation more than offset those economic effects. (Technical changes are those not directly related to changes in law or in the economic outlook.)

Changes to Projections of Revenues

Revisions to CBO's January baseline reduce anticipated revenues in 2008 by \$108 billion and increase projected revenues in the subsequent 10-year period by \$76 billion. The bulk of those revisions stem from the recent fiscal stimulus legislation.

1. Those projections were published in Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2008 to 2018* (January 2008).

2. The Deficit Control Act specified that mandatory spending programs whose authorizations are set to expire should be assumed to continue if they have outlays of more than \$50 million in the current year and were established on or before the date when the Balanced Budget Act of 1997 was enacted. (Programs established after that date are not automatically assumed to continue.) The Deficit Control Act also specified that expiring excise taxes whose revenues are dedicated to trust funds should be assumed to be extended at their current rates. (The law did not provide for the extension of other expiring tax provisions, even if they had been routinely extended in the past.)

Table A-1.**CBO's Baseline Budget Projections**

	Actual 2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
In Billions of Dollars														
Revenues														
Individual income taxes	1,163	1,141	1,337	1,412	1,624	1,767	1,875	1,969	2,076	2,192	2,314	2,445	8,014	19,009
Corporate income taxes	370	326	338	331	332	356	325	339	347	357	369	384	1,683	3,480
Social insurance taxes	870	912	950	1,002	1,056	1,107	1,154	1,202	1,251	1,303	1,357	1,413	5,268	11,793
Other	165	168	168	171	188	234	246	261	274	287	300	313	1,008	2,443
Total	2,568	2,546	2,793	2,916	3,200	3,463	3,600	3,770	3,947	4,138	4,341	4,555	15,973	36,725
On-budget	1,933	1,880	2,097	2,183	2,428	2,653	2,755	2,889	3,028	3,180	3,342	3,515	12,116	28,071
Off-budget	635	667	696	734	772	810	845	882	919	958	998	1,040	3,857	8,654
Outlays														
Mandatory spending	1,451	1,577	1,664	1,740	1,853	1,889	2,031	2,151	2,286	2,470	2,597	2,725	9,177	21,406
Discretionary spending	1,042	1,092	1,122	1,146	1,171	1,187	1,218	1,245	1,274	1,309	1,336	1,363	5,844	12,371
Net interest	237	234	214	243	270	282	281	284	283	280	274	266	1,291	2,677
Total	2,730	2,903	3,000	3,130	3,294	3,358	3,530	3,680	3,843	4,059	4,207	4,354	16,312	36,455
On-budget	2,277	2,433	2,500	2,604	2,748	2,787	2,929	3,047	3,175	3,353	3,458	3,559	13,567	30,159
Off-budget	454	470	500	526	546	572	601	633	668	707	749	794	2,745	6,296
Deficit (-) or Surplus	-162	-357	-207	-213	-93	105	70	90	104	79	134	202	-339	270
On-budget	-343	-553	-403	-421	-320	-133	-174	-158	-147	-172	-116	-44	-1,451	-2,088
Off-budget	181	197	196	208	227	238	244	249	251	251	250	246	1,112	2,358
Debt Held by the Public	5,035	5,367	5,591	5,822	5,933	5,845	5,792	5,717	5,627	5,563	5,444	5,255	n.a.	n.a.
Memorandum:														
Gross Domestic Product	13,671	14,242	14,773	15,589	16,490	17,284	18,077	18,885	19,713	20,569	21,457	22,386	82,213	185,223
As a Percentage of Gross Domestic Product														
Revenues														
Individual income taxes	8.5	8.0	9.0	9.1	9.8	10.2	10.4	10.4	10.5	10.7	10.8	10.9	9.7	10.3
Corporate income taxes	2.7	2.3	2.3	2.1	2.0	2.1	1.8	1.8	1.8	1.7	1.7	1.7	2.0	1.9
Social insurance taxes	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.3	6.3	6.3	6.3	6.4	6.4
Other	1.2	1.2	1.1	1.1	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.2	1.3
Total	18.8	17.9	18.9	18.7	19.4	20.0	19.9	20.0	20.0	20.1	20.2	20.3	19.4	19.8
On-budget	14.1	13.2	14.2	14.0	14.7	15.4	15.2	15.3	15.4	15.5	15.6	15.7	14.7	15.2
Off-budget	4.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.6	4.7	4.7
Outlays														
Mandatory spending	10.6	11.1	11.3	11.2	11.2	10.9	11.2	11.4	11.6	12.0	12.1	12.2	11.2	11.6
Discretionary spending	7.6	7.7	7.6	7.4	7.1	6.9	6.7	6.6	6.5	6.4	6.2	6.1	7.1	6.7
Net interest	1.7	1.6	1.5	1.6	1.6	1.6	1.6	1.5	1.4	1.4	1.3	1.2	1.6	1.4
Total	20.0	20.4	20.3	20.1	20.0	19.4	19.5	19.5	19.5	19.7	19.6	19.4	19.8	19.7
On-budget	16.7	17.1	16.9	16.7	16.7	16.1	16.2	16.1	16.1	16.3	16.1	15.9	16.5	16.3
Off-budget	3.3	3.3	3.4	3.4	3.3	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.3	3.4
Deficit (-) or Surplus	-1.2	-2.5	-1.4	-1.4	-0.6	0.6	0.4	0.5	0.5	0.4	0.6	0.9	-0.4	0.1
On-budget	-2.5	-3.9	-2.7	-2.7	-1.9	-0.8	-1.0	-0.8	-0.7	-0.8	-0.5	-0.2	-1.8	-1.1
Off-budget	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.1	1.4	1.3
Debt Held by the Public	36.8	37.7	37.8	37.3	36.0	33.8	32.0	30.3	28.5	27.0	25.4	23.5	n.a.	n.a.

Source: Congressional Budget Office.

Note: n.a. = not applicable.

Legislative Changes

The Economic Stimulus Act of 2008 provides a tax rebate to individual tax filers who satisfy specific income requirements; it also provides special depreciation allowances to businesses. CBO and the Joint Committee on Taxation estimate that the act will diminish revenues by \$114 billion in 2008 and \$12 billion in 2009.³ Because much of the initial effect of the depreciation allowances on revenues will result from an acceleration in the timing of deductions, initial revenue losses in 2008 and 2009 will be followed by increases in later years—totaling \$44 billion over the 2010–2018 period.

Economic Changes

With respect to revenues, the most important differences between CBO's current economic forecast and the one released in January are in the assumptions about nominal gross domestic product (GDP) and taxable income. CBO now anticipates that nominal GDP will be slightly higher in 2008, slightly lower in 2009 and 2010, and slightly higher in the following years (see Table A-3).⁴ In addition, taxable income as a percentage of GDP is now projected to be slightly lower over the next two fiscal years. Those differences between forecasts result in a near-term decline in projected revenues—\$23 billion for 2008 through 2010—followed by an increase of \$57 billion from 2011 through 2018.

Technical Changes

Technical factors have led CBO to increase its estimate of revenues for 2008 by \$6 billion and by smaller amounts thereafter. Between 2009 and 2018, technical revisions total \$8 billion. Those revisions mainly affect individual income tax receipts, which have been slightly stronger in recent months than CBO expected in January.

Changes to Projections of Outlays

CBO has added about \$30 billion to its estimate of outlays for 2008 and a total of \$79 billion (0.2 percent) to its projection for the 2009–2018 period. The new total for

2008 mainly reflects an increase of \$39 billion in projected outlays stemming from the recently enacted economic stimulus legislation, partially offset by an expected increase of \$11 billion in receipts from auction and leasing activities.

Legislative Changes

As a result of the economic stimulus legislation, some individuals will receive a rebate in excess of the amount of income taxes that they paid; such rebates are classified as mandatory outlays and are estimated to total \$38 billion in 2008 and \$4 billion in 2009. The increase in government borrowing necessitated by the stimulus package will add more than \$70 billion to interest costs from 2009 to 2018, CBO estimates.

Economic Changes

Primarily because sharply lower interest rates have diminished projected borrowing costs, revisions to CBO's economic assumptions have reduced its estimate of outlays by \$10 billion for 2008 and by a total of \$265 billion over the 2009–2018 period. Those changes also include a reduction in projected outlays for Medicare, Social Security, and other mandatory programs because of slightly lower near-term inflation.

Net Interest. Most of the budgetary impact of the revised economic outlook stems from the lower interest rates that CBO projects for 2008 through 2010. Those revisions, in conjunction with the effects that other economic changes have on debt service, reduce CBO's estimates of net interest costs by \$90 billion between 2008 and 2011 and by about \$15 billion a year thereafter.

Medicare. Changes to CBO's economic forecast have not affected its projection of Medicare spending for 2008, but they have reduced projected spending in CBO's Medicare baseline for the following 10 years by a total of \$34 billion. That change is primarily the result of updated economic projections that affect two components of the program. CBO has reduced projected spending for Hospital Insurance (Part A of Medicare) by a cumulative \$15 billion, a change attributable to smaller projected increases in the so-called market basket used to update prices for institutional providers. CBO has also reduced projected Medicare outlays for prescription drugs (Part D) by a total of \$13 billion from 2009 through 2018 as a result of smaller anticipated increases in drug prices.

3. The rebates also affect mandatory spending, as discussed in the section "Changes to Projections of Outlays." See CBO's cost estimate for H.R. 5140, the Economic Stimulus Act of 2008 (February 11, 2008), for more information on the legislation.

4. See the letter to the Honorable Kent Conrad, Chairman, Senate Committee on the Budget, from Peter R. Orszag, Director, Congressional Budget Office, updating CBO's economic forecast, February 15, 2008.

Table A-2.**Changes in CBO's Baseline Projections of the Deficit or Surplus Since January 2008**

(Billions of dollars)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
Total Deficit (-) or Surplus as Projected in January 2008	-219	-198	-241	-117	87	61	96	117	95	151	223	-408	274
Changes to Revenue Projections													
Legislative	-114	-12	12	9	8	6	4	2	1	1	1	22	31
Economic	-1	-15	-6	8	12	9	5	5	6	6	7	7	36
Technical	6	3	4	2	1	*	-1	-1	*	*	-1	11	8
Total Revenue Changes	-108	-24	9	19	21	15	8	6	7	7	8	40	76
Changes to Outlay Projections													
Legislative													
Mandatory													
Refundable tax credits	38	4	0	0	0	0	0	0	0	0	0	4	4
Other	*	*	*	*	*	*	*	*	*	*	*	*	*
Subtotal, mandatory	38	4	*	*	*	*	*	*	*	*	*	4	4
Discretionary	*	*	*	*	*	*	*	*	*	*	*	2	3
Net interest (Debt service)	1	4	6	7	7	7	8	8	8	9	9	31	73
Subtotal, legislative	39	8	6	7	7	8	8	8	9	9	10	37	80
Economic													
Mandatory													
Medicare ^a	*	-1	-2	-2	-2	-3	-3	-4	-5	-5	-6	-10	-34
Social Security	0	0	-2	-4	-4	-4	-4	-3	-3	-2	-2	-14	-28
Other	-1	-1	-2	-3	-2	-2	-2	-2	-2	-1	-1	-11	-19
Subtotal, mandatory	-1	-2	-6	-9	-9	-9	-9	-9	-9	-9	-10	-36	-81
Discretionary	0	-1	-1	-1	*	*	*	*	*	*	*	-4	-4
Net interest													
Debt service	*	*	-2	-3	-5	-7	-8	-10	-11	-12	-14	-18	-73
Rate effect/inflation	-10	-31	-25	-19	-9	-7	-5	-3	-2	-2	-2	-92	-106
Subtotal, net interest	-10	-32	-27	-22	-15	-14	-13	-13	-13	-15	-16	-109	-180
Subtotal, economic	-10	-35	-34	-32	-24	-24	-23	-21	-22	-24	-26	-149	-265

Continued

Table A-2.

Continued

Changes in CBO's Baseline Projections of the Deficit or Surplus Since January 2008

(Billions of dollars)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009- 2013	Total, 2009- 2018
Changes to Outlay Projections (Continued)													
Technical													
Mandatory													
Medicare ^a	1	5	8	13	12	16	20	23	26	26	26	56	177
Veterans' benefits and services	1	1	1	2	2	2	2	2	2	2	2	8	18
Spectrum auction and OCS receipts	-11	1	-1	*	-1	-1	-1	-1	-1	-1	-1	-2	-5
Other	-1	2	1	1	1	*	1	*	*	*	2	5	8
Subtotal, mandatory	-10	9	9	16	14	18	22	25	28	28	29	66	198
Discretionary	3	2	2	2	1	1	1	1	1	1	3	8	16
Net interest													
Debt service	*	*	*	1	3	4	5	7	9	11	13	8	54
Other	8	1	-2	1	1	-1	-1	-1	-2	-2	*	1	-4
Subtotal, net interest	8	1	-2	3	4	3	5	6	7	9	13	9	49
Subtotal, technical	1	11	9	21	20	22	28	32	36	38	44	83	263
Total Outlay Changes	30	-16	-18	-5	3	6	14	19	23	24	29	-29	79
Total Impact on the Deficit or Surplus^b	-138	-8	28	24	18	9	-6	-13	-16	-17	-21	69	-4
Total Deficit (-) or Surplus as Projected in March 2008	-357	-207	-213	-93	105	70	90	104	79	134	202	-339	270
Memorandum:													
Total Legislative Changes ^b	-153	-20	5	2	*	-2	-4	-6	-7	-8	-9	-15	-49
Total Economic Changes ^b	10	20	27	41	36	32	27	26	28	30	33	156	300
Total Technical Changes ^b	5	-8	-5	-19	-18	-22	-29	-33	-37	-39	-45	-72	-255

Source: Congressional Budget Office.

Note: * = between -\$500 million and \$500 million; OCS = Outer Continental Shelf.

a. Includes offsetting receipts.

b. Negative numbers indicate an increase in the deficit or decrease in the surplus.

Table A-3.**CBO's Current and Previous Economic Projections for Calendar Years 2008 to 2018**

	Actual 2007	Forecast		Projected Annual Average	
		2008	2009	2010 to 2013	2014 to 2018
Nominal GDP (Billions of dollars)					
February 2008	13,843	14,358	14,946	18,278 ^a	22,625 ^b
January 2008	13,828	14,330	14,997	18,243 ^a	22,593 ^b
Nominal GDP (Percentage change)					
February 2008	4.9	3.7	4.1	5.2	4.4
January 2008	4.8	3.6	4.7	5.0	4.4
Real GDP (Percentage change)					
February 2008	2.2	1.9	2.3	3.2	2.5
January 2008	2.2	1.7	2.8	3.1	2.5
GDP Price Index (Percentage change)					
February 2008	2.7	1.8	1.7	1.9	1.9
January 2008	2.5	1.9	1.8	1.9	1.9
Consumer Price Index ^c (Percentage change)					
February 2008	2.9	2.8	1.9	2.1	2.2
January 2008	2.8	2.9	2.3	2.2	2.2
Unemployment Rate (Percent)					
February 2008	4.6	5.2	5.5	4.9	4.8
January 2008	4.6	5.1	5.4	4.9	4.8
Three-Month Treasury Bill Rate (Percent)					
February 2008	4.4	2.1	2.4	4.6	4.7
January 2008	4.4	3.2	4.2	4.6	4.7
Ten-Year Treasury Note Rate (Percent)					
February 2008	4.6	3.6	3.8	5.1	5.2
January 2008	4.6	4.2	4.9	5.2	5.2
Tax Bases (Billions of dollars)					
Economic profits					
February 2008	1,601	1,588	1,588	1,831 ^a	2,310 ^b
January 2008	1,599	1,620	1,649	1,842 ^a	2,320 ^b
Wages and salaries					
February 2008	6,367	6,651	6,936	8,421 ^a	10,364 ^b
January 2008	6,368	6,615	6,913	8,401 ^a	10,354 ^b
Tax Bases (Percentage of GDP)					
Economic profits					
February 2008	11.6	11.1	10.6	10.2	10.0
January 2008	11.6	11.3	11.0	10.3	10.1
Wages and salaries					
February 2008	46.0	46.3	46.4	46.2	45.9
January 2008	46.0	46.2	46.1	46.1	45.9
Memorandum:					
Real Potential GDP (Percentage change)					
February 2008	2.8	2.8	2.7	2.6	2.5
January 2008	2.8	2.8	2.7	2.6	2.5

Sources: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

Note: GDP = gross domestic product; percentage changes are measured from one year to the next.

a. Level in 2013.

b. Level in 2018.

c. The consumer price index for all urban consumers.

Social Security. Economic changes have led CBO to reduce projected spending for Social Security by \$28 billion for 2010 through 2018. CBO now anticipates that the cost-of-living adjustments that Social Security beneficiaries will receive in January 2010 and 2011 will be smaller (by 0.4 and 0.3 percentage points, respectively) than the increases that CBO projected in its previous baseline; as a result, outlays over the 2010–2018 period are expected to be about \$38 billion less than CBO previously anticipated. However, revisions to projections of growth in wages and salaries boost benefit payments for those years by nearly \$10 billion.

Discretionary Outlays. CBO's new forecast incorporates a small downward revision to the estimate of the GDP price index for 2009 and small increases in the estimates for later years. Those changes combine to reduce projected discretionary outlays in the baseline by \$4 billion from 2009 through 2018.

Technical Changes

For 2008, technical changes to CBO's projections of total outlays produce a net increase of only \$1 billion; however, for the 2009–2018 period, such changes add \$263 billion. The largest change for 2008 results from CBO's estimates of receipts from a recent auction of licenses to use the electromagnetic spectrum and from new oil and gas leasing activity on the Outer Continental Shelf (OCS); that increase in receipts is offset by additional projected net interest payments and other technical revisions. For the 10-year projection period, CBO's estimates of higher projected spending for the Medicare program (\$177 billion) and for veterans' benefits and services (\$18 billion) are the biggest technical changes in outlays.

Medicare. Since publishing its January baseline, CBO has raised its estimate of Medicare spending by \$1 billion for 2008 and by \$177 billion, or about 2.5 percent, for the following 10 years.

Much of that change stems from an increase in projected spending that occurs because the Centers for Medicare and Medicaid Services has reclassified certain expenditures for recent years. That reclassification shifts expenditures originally attributed to services provided under Part B (Supplementary Medical Insurance), a category that is expected to grow relatively slowly, to faster-growing components of Part A (Hospital Insurance). Moreover, the reduction in projected Part B spending contributes to lower estimates of Medicare premiums over the

next 10 years. In addition, CBO has increased its forecast of participation in Medicare Advantage—which is more expensive than traditional fee-for-service Medicare—boosting it from 26 percent of Part A enrollment by 2018 to 29 percent.

Veterans' Benefits and Services. CBO projects that spending for veterans' programs will be about \$18 billion (1.8 percent) higher between 2009 and 2018 than it anticipated in January. Recent data from the Department of Veterans Affairs regarding caseloads for veterans' disability compensation suggest that the number of new recipients of such compensation will be larger than previously expected.

Spectrum Auction and OCS Receipts. The results of recent auction and leasing activities have led to an \$11 billion increase in CBO's estimate of offsetting receipts for 2008. In late January, the Federal Communications Commission began auctioning licenses for commercial use of radio frequencies that are currently used for television broadcasts. Bidding results through February suggest that net proceeds from that auction will total about \$19 billion, compared with CBO's previous estimate of \$10 billion to \$15 billion. CBO increased its projection of receipts for 2008 by \$8 billion to reflect not only that higher value but also its expectation that receipts will be recorded more quickly than it had previously assumed. In addition, CBO boosted its estimate of 2008 receipts from oil and gas leasing activity on the Outer Continental Shelf by about \$3 billion, largely because the bids for new leases in the Chukchi Sea (off the coast of Alaska) exceeded its previous expectations.

Other Mandatory Programs. Technical changes to projections of spending for other mandatory programs were relatively modest; on net, they increase mandatory outlays by \$8 billion over the 2009–2018 period.

For Social Security, CBO has reduced its projections of outlays by \$10 billion, or 0.1 percent, over the 10-year period. The overall reduction comprises a \$13 billion decrease in spending for the Disability Insurance (DI) program and a \$3 billion increase in outlays for the Old-Age and Survivors Insurance (OASI) program. CBO raised its estimates of retroactive DI payments for 2008 and 2009 but reduced its projection of average monthly DI payments throughout the 10-year period. For OASI, CBO increased its estimates of monthly and retroactive

retirement-benefit payments but reduced anticipated caseloads.

Smaller changes in CBO's projections for several other areas of the budget have added a net \$18 billion to total projected mandatory spending over the 2009–2018 period.

Discretionary Programs. Technical changes since January have had a much smaller effect on CBO's baseline projections of discretionary spending than on its projections of mandatory spending. Upward and downward adjustments in several areas of the budget resulted in net increases in CBO's estimates of discretionary outlays totaling \$3 billion for 2008 and \$16 billion for the 2009–2018 period.

Net Interest. For 2008, CBO's current estimate of net interest spending is \$8 billion higher than the agency

estimated in January. That increase stems from higher estimated intragovernmental interest payments, lower expected interest earnings for the Railroad Retirement Investment Trust Fund, and an increase in projected outlays for interest on delayed tax refunds.

Technical changes to projections of spending for net interest have boosted projected outlays over the next 10 years by \$49 billion. That increase is the result of two changes—in opposite directions. First, CBO has lowered its projections of interest costs for the 2009–2018 period by \$4 billion, in large part because of revisions to estimates of intragovernmental interest payments. Second, because of increases in projected deficits (or decreases in projected surpluses) resulting from other technical changes to the baseline—changes dominated by the higher estimates for Medicare spending—CBO has added \$54 billion to projected debt-service costs between 2009 and 2018.

The Potential Economic Effects of Selected Proposals in the President's 2009 Budget

Considerable uncertainty surrounds the possible economic impact of four of the President's budgetary proposals for 2009—those that would extend beyond 2010 the lower tax rates on dividends and capital gains, expand the availability of tax-free savings accounts, extend the repeal of the estate tax, and establish individual accounts as part of Social Security. The factors that the Congressional Budget Office (CBO) considered and the methods it used in assessing that impact are explained below. (CBO's analysis of the overall economic effects of the President's budgetary proposals is described in Chapter 2.)

Extend the Lower Tax Rates on Dividends and Capital Gains

Enactment of the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) reduced through 2008 the tax rates on dividends and capital gains. Until the end of last year, those rates comprised a bottom bracket of 5 percent and a top bracket of 15 percent; in 2008, the bottom bracket dropped to zero. The Tax Increase Prevention and Reconciliation Act of 2006 extended the zero and 15 percent rates through 2010. Before JGTRRA was enacted, dividends were subject to the same tax rates as ordinary income—ranging from 10 percent to 35 percent—and most capital gains were subject to rates of 8 percent, 10 percent, or 20 percent (depending on a filer's income tax bracket). In his 2009 budget, the President has proposed making permanent the zero and 15 percent rates.

Reduced rates on capital gains and dividends lower the overall taxation of corporate profits, some of which are taxed twice: once under the corporate income tax and again when people receive dividends and realize capital gains—brought about by a business's reinvestment of its profits—on sales of stock. Lowering the tax rates that individuals face on the two types of income would reduce the total rate of taxation.

In addition to decreasing tax rates on corporate income, JGTRRA reduced taxes on some income that is currently taxed only once. A substantial portion of taxable capital gains arises from investments whose earnings are not subject to the corporate income tax, such as gains on real estate held by individuals. The lower capital gains tax rate reduced the level of taxation on those investments as well.

Many types of productive capital are sufficiently long-lived that investments in them today will continue to earn returns long after JGTRRA's rate changes are scheduled to expire. Permanently extending those rates would enhance the incentive to invest in long-lived capital stock by increasing the expected returns.

One effect of extending the tax rates on dividends and capital gains involves the cost of financing for businesses. Lower tax rates on capital gains and dividends might be expected to lower the cost of financing, because businesses could pay investors less before taxes to yield the same after-tax return. But how much the cost of capital might fall is unclear. Some analysts argue that only the decrease in taxes on capital gains will act to reduce that cost. Others hold that both the decrease in taxes on

dividends and the decrease in taxes on capital gains will reduce the cost of capital.¹

A related difference of views among analysts involves how much the value of businesses' stock might rise if the lower rates of taxation became permanent. (Share values rise because the decrease in taxes increases the after-tax return to shareholders, making the investments more valuable to them.) The view of corporate finance that predicts a relatively large increase in those values predicts a relatively small decrease in the cost of capital, and vice versa.

In the absence of a consensus about which view is correct, CBO has adopted middle-ground estimates of the effects of the President's proposal on the cost of capital for firms and on share values.

Higher values for shares of stock raise the net wealth of shareholders and encourage more spending on goods and services; this is the so-called wealth effect. Through that channel, the President's proposal would boost overall demand in the short run. But the more it enhanced demand by raising consumer spending in the short run, the more it would reduce national saving and thus national income in the long run.

The enactment of JGTRRA has provided an opportunity to examine how changes in dividend taxes affect a business's value. Some researchers have found evidence that reductions in dividend taxes raised stock prices, although it is uncertain whether those changes will be permanent or temporary.² Other researchers have identified no mea-

surable effects on the value of the total U.S. stock market, but their work does not rule out the possibility of a modest positive effect.³

Extending the lower rates on capital gains and dividends is likely to lessen the disadvantage that the corporate sector now faces in competing for capital. For example, although some income from the corporate sector is taxed twice under current law, income from unincorporated businesses is taxed only at the personal level, and income from owner-occupied housing—that is, the value of the housing “services” consumed by the owner—is not taxed at all by the federal government. That disparity in tax treatment could lead to less investment in the corporate sector than is optimal for economic output. Lowering the taxes that businesses face would allow them to attract additional capital from the housing and small-business sectors and could thus improve the economy's efficiency. Such a shift in investment might, however, conflict with other policy goals, such as supporting owner occupancy of homes or supporting unincorporated businesses.

The proposal to extend the lower rates on dividends and capital gains might affect commercial financial behavior in two ways: Businesses could choose to finance more investment by issuing stock (equity financing) rather than debt, and they could decide to pay out more in dividends and retain fewer earnings. Currently, businesses may deduct the interest they pay on debt from their taxable income, so those payments are taxed only once. (The individual who receives the payment pays the tax.) But if a business finances a project by issuing stock, some of the returns on the investment that the project generates are subject to personal and corporate taxation. The President's proposal would narrow that disparity in tax treatment.

The evidence amassed so far is consistent with the view that dividend taxation affects payout policies, at least in

1. Economists do not agree about how the taxation of dividends affects the economy. Two views prevail: The first (or “traditional”) view holds that reducing the tax on dividends lowers the cost of capital and increases investment. In the short run, stock prices rise because expected after-tax returns to investors increase. But, over time, the additional investment drives back down the pretax return to capital, so the effect on stock prices is temporary. The second (or “new”) view holds that reducing the tax on dividends permanently raises the value of a business, and therefore its stock price, but leaves unaffected both the cost of capital and investment by the business. For an overview of those issues, see Alan Auerbach, “Taxation and Corporate Financial Policy,” in Alan Auerbach and Martin Feldstein, eds., *Handbook of Public Economics*, vol. 3 (Amsterdam: North-Holland, 2003); Roger Gordon and Martin Dietz, *Dividends and Taxes*, Working Paper 12292 (Cambridge, Mass.: National Bureau of Economic Research, June 2006); and George R. Zodrow, “On the ‘Traditional’ and ‘New’ Views of Dividend Taxation,” *National Tax Journal*, vol. 44, no. 4, part 2 (December 1991), pp. 497–509.

2. Alan J. Auerbach and Kevin A. Hassett, “The 2003 Dividend Tax Cuts and the Value of the Firm: An Event Study,” in A. Auerbach, J. Hines, and J. Slemrod, eds., *Taxing Corporate Income in the 21st Century* (Cambridge, England: Cambridge University Press, 2007), Chapter 3; Alan J. Auerbach and Kevin A. Hassett, “Dividend Taxes and Firm Valuation: New Evidence,” *American Economic Review*, vol. 96, no. 2 (May 2006), pp. 119–123.

3. Gene Amromin, Paul Harrison, and Steven Sharpe, *How Did the 2003 Dividend Tax Cut Affect Stock Prices?* Working Paper 2006-17 (Chicago: Federal Reserve Bank of Chicago, October 2006).

the short run. The reduction in dividend taxation in 2003, for instance, was followed by a significant increase in dividends issued, although it is unclear whether that increase will be permanent or whether the tax cut caused businesses to increase their total payout to shareholders or simply to substitute dividends for share repurchases.⁴ In addition, the factors that explain why some businesses increased dividend payouts more than others did are still being examined. So far, the response to the tax cut appears to be greater among businesses whose top executives held relatively large amounts of company stock (and relatively small amounts of unexercised stock options) and among those whose ownership was dominated by taxable institutions.

The proposed reduction in the future taxation of dividends and capital gains also would interact with some of the President's other proposals and with current law. For instance, the President's proposal to boost the amount that people may deposit in tax-free savings accounts (discussed below) would increase the share of personal assets held in such accounts—duplicating some of the effect on the cost of capital and its allocation among sectors of the economy. However, the expanded accounts would partly mitigate the effects of the proposal on dividends and capital gains in bolstering equity financing because the interest earned on assets in the accounts would not be taxed at either the personal or the corporate level. Also contributing to that lessening of the proposal's impact on equity financing would be the combined effect of the two policies in increasing the proportion of interest-bearing assets in tax-free accounts: Investors' incentives to hold stocks in such accounts would be weakened if their returns already faced lower tax rates.

4. Jennifer Blouin, Jana Raedy, and Douglas Shackelford, *Did Dividends Increase Immediately After the 2003 Reduction in Tax Rates?* Working Paper 10301 (Cambridge, Mass.: National Bureau of Economic Research, February 2004); Jeffrey Brown, Nellie Liang, and Scott Weisbenner, *Executive Financial Incentives and Payout Policy: Firm Responses to the 2003 Dividend Tax Cut*, Working Paper 11002 (Cambridge, Mass.: National Bureau of Economic Research, December 2004); Raj Chetty and Emmanuel Saez, "Dividend Taxes and Corporate Behavior: Evidence from the 2003 Dividend Tax Cut," *Quarterly Journal of Economics*, vol. 120, no. 3 (2005), pp. 791–833, and "The Effects of the 2003 Dividend Tax Cut on Corporate Behavior: Interpreting the Evidence," *American Economic Review*, vol. 96, no. 2 (May 2006), pp. 124–129.

In its analysis, CBO incorporated the effects of the proposal regarding dividends and capital gains in two ways. First, it estimated the proposal's overall effect on the average cost of capital under the terms of the growth models (the "textbook" growth model, life-cycle growth model, and infinite-horizon growth model) and incorporated that calculation. Second, because the models cannot account for the effect of reallocating capital, CBO turned to the research on how reallocation might influence output. It then determined a midrange estimate and added that amount to the models' underlying estimates of the effect on output. The procedure added an average of 0.07 percent over the 2009–2018 period to the proposal's projected effect on gross national product, as predicted by the models.

CBO used macroeconomic forecasting models (from Macroeconomic Advisers and Global Insight) to estimate the proposal's effect on the cost of capital in different sectors of the economy and on the value of stock shares (under the assumption that investors and businesses are forward-looking). It then incorporated those estimates in the models and projected the effect on the economy.

Expand Tax-Free Savings Accounts

The President's 2009 budget includes a proposal to consolidate and expand the current system of tax-free savings accounts for retirement and other purposes, such as education. Two new kinds of accounts would be created: retirement savings accounts (RSAs) and lifetime savings accounts (LSAs). RSAs would function in some ways like Roth individual retirement accounts (IRAs) in that taxes would not be deferred on contributions, as they are for contributions to traditional IRAs, but returns would accrue tax free. Unlike Roth IRAs, RSAs would be available to all workers (and their spouses) regardless of income. The President's proposal also would eliminate further tax deferrals for IRA contributions.

The tax treatment of the proposed lifetime savings accounts also would be similar to that governing Roth IRAs. However, unlike Roth IRAs or RSAs, LSAs would be open to everyone, regardless of age, income, or employment status, and participants could withdraw funds at any time for any reason. Taxpayers could use LSAs to consolidate other savings plans, including Coverdell education savings accounts and qualified state tuition plans.

In CBO's estimation, the new savings accounts that the President has proposed would have little effect on the economy, on average, over the 2009–2018 period (the current 10-year budget horizon). Most taxpayers' use of the new accounts would be similar to their current saving in tax-free accounts. One possible outcome is that people who currently have assets in taxable accounts would reduce their tax liability by selling those assets and putting the proceeds in the new accounts; similarly, over time some people might contribute less to taxable savings accounts because their contributions would go instead to the tax-preferred accounts. To the extent that such shifting of assets occurred, total private saving would be unaffected but the budget deficit would be larger and the net effect on national saving would be negative (because the change in private saving would fail to offset the increase in the budget deficit). Most new private saving would involve small amounts set aside by taxpayers with few taxable assets to shift.

Beyond 2018, the effects of the proposal might be greater than those just described (because increasing numbers of taxpayers would run out of assets that could be shifted). For those later years, CBO estimates, the proposal would have a modestly positive effect on private saving.

Extend the Repeal of the Estate Tax

The President's proposal to extend the repeal of the estate tax beyond its scheduled expiration at the end of calendar year 2010 could affect consumer spending and saving, depending on people's motives for leaving bequests. There is no consensus, however, about which motives predominate or how estate taxes affect consumer spending. People might be encouraged to reduce their spending in order to leave larger bequests because of the lower estate taxes their heirs would pay. But a lower estate tax also means that people can spend more and still make the same after-tax bequest. To the extent that a lower estate tax has increased the after-tax size of bequests, potential recipients also might increase their spending. CBO found scant evidence to support the contention of some analysts that the estate tax is a particular impediment to the creation of small businesses.⁵

CBO's estimates of the effects of the President's proposal incorporated the assumption that extending the repeal of

the estate tax would increase consumer spending slightly, by about 5 cents for each dollar of tax savings.⁶ That assumption implies that extending the repeal would reduce the capital stock, but by an amount too small to affect the estimates presented in Chapter 2 of this report. CBO considered alternative assumptions (for example, that the positive effect on consumer spending from increasing after-tax income would be balanced by the incentive effects of lower tax rates, resulting in no net impact on that spending) that would yield similar results.

Establish Individual Accounts in Social Security

The President's budget proposes that workers be permitted to redirect a portion of their payroll tax payments from the Social Security trust funds to individual accounts and invest those contributions in various financial assets. In CBO's estimation, the proposal would result in budgetary outlays of \$287 billion from 2012 to 2018; however, it would have no appreciable effect on the economy during that period because it would not change people's projected lifetime income (once the expected returns of the assets in the accounts were adjusted for the risk they carry) and would not alter people's take-home pay. In addition, the accounts would not significantly affect the investment capital available in the economy, because the additional government borrowing to finance the accounts would be roughly offset by the increase in investable funds in the accounts.

Under the proposal, workers could redirect payroll taxes to individual accounts, but their contributions to the accounts would ultimately be offset by reductions in their traditional Social Security benefits, which would be calculated using hypothetical accounts. In addition to tracking the actual balances in an individual account, the Social Security Administration would follow a hypothetical account that held the same amount of contributions and that grew at a specified real (inflation-adjusted) rate of 2.6 percent per year. When a person claimed traditional Social Security benefits, those benefits would be reduced so that the actuarial value of the reduction over the person's lifetime would equal the amount in the

5. See Congressional Budget Office, *Effects of the Federal Estate Tax on Farms and Small Businesses* (July 2005).

6. CBO assumed that consumer spending would increase slightly because recipients of after-tax bequests would be unlikely in any given year to raise their spending by a significant amount and because the effect on recipients might be offset to some degree by increased saving among those planning to leave bequests.

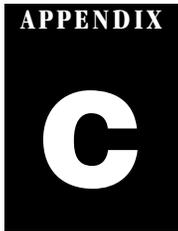
hypothetical account—regardless of the amount actually in the person's individual account.

CBO derived the rate of growth for the notional account from projections by the trustees of the Social Security system. In their estimation, Treasury bonds over the long run will earn an average real return of 2.9 percent; individual accounts would incur annual administrative expenses equal to 0.3 percent of assets—for a net real return of 2.6 percent. Because that rate equals the rate of return on the notional account that would be used to calculate the reduction in benefits, diverting payroll taxes to an individual account and investing entirely in government bonds is projected to leave a person's total benefits (including the account assets) unchanged. If, however, the average rate of return on government bonds turns out to be higher or lower than that projected 2.9 percent, the total benefits of a person who chose to divert some payroll taxes to an individual account and invest in Treasury bonds will also be correspondingly higher or lower.

On average, greater returns would be expected from investing in other assets, such as corporate bonds or

equities. However, those investments would also be riskier than government bonds. The prices of various assets and their expected returns are determined by the preferences and judgments of financial market participants who attempt to balance the risks of various assets against their extra expected returns. An individual account holding assets, such as stocks (with expected returns above 2.6 percent), would yield expected lifetime Social Security benefits whose value was greater than it would be under the traditional system; however, that higher anticipated income would not be expected to change the account holder's behavior (by, for example, inducing the account holder to increase spending now) because the higher expected return would be balanced by additional risk. Shifting some payroll taxes to an individual account also would not be likely to affect the consumption patterns of people who spend all of their income because it would not alter their take-home pay.⁷

7. See Congressional Budget Office, *Evaluating Benefit Guarantees in Social Security* (March 2006).



The Models Used to Analyze the Supply-Side Macroeconomic Effects of the President's Budgetary Proposals

The Congressional Budget Office (CBO) used three models—a “textbook” growth model, a life-cycle growth model, and an infinite-horizon growth model—to estimate the supply-side effects of the President’s budgetary proposals from 2009 to 2018, the period covered by CBO’s current 10-year baseline projection. (Estimates generated by those models are presented in Chapter 2.)

Textbook Growth Model

The textbook growth model is an enhanced version of a model developed by Robert Solow, a pioneer in the theory of growth accounting.¹ The textbook growth model incorporates the assumption that economic output is determined by the number of hours of labor workers supply, the size and composition of the capital stock (for example, factories and information systems), and total factor productivity—which represents the state of technological expertise. The model is not forward-looking: The people it represents base their decisions about working and saving entirely on current economic conditions. In particular, they do not respond to expected future changes in government policy. Moreover, instead of incorporating effects from demand-side variations in the economy, the model assumes that output is always at its potential (or sustainable) level.

The estimates that CBO developed using the textbook growth model incorporate the effects that changes in marginal tax rates specified in the President’s budgetary proposals would have on the number of hours worked.

(CBO made separate calculations of the effects of tax rates.)

The President’s budgetary proposals would increase federal deficits over the 10-year budget window. However, as described in Chapter 2, most of the increase would result from two proposals that, in CBO’s judgment, would have little effect on national saving (government and private saving combined). Excluding those proposals, the rest of the President’s budget shows deficits that are projected in the textbook growth model to have a modest negative effect on the capital stock. The proposals would slightly increase consumer spending, relative to the amount in CBO’s baseline, and that in turn would crowd out investment. The textbook growth model predicts that changes in marginal tax rates on capital have no direct effect on private-sector spending.

Incurred deficits can lead to higher private saving for several reasons, including a response to higher interest rates.

Another factor affecting the results is that the reduction in national saving would not entirely translate into reductions in domestic investment. Instead, part of the reduction would be reflected in increased borrowing from abroad, which allows the domestic capital stock to increase more rapidly than the capital stock (which is mainly but not entirely domestically located) owned by U.S. citizens.²

1. For a detailed description of the textbook growth model, see Congressional Budget Office, *CBO’s Method for Estimating Potential Output: An Update* (August 2001).

2. The ultimate effect of increased borrowing from abroad depends on whether one is examining domestic output (which reflects the return to the domestic capital stock) or national income (which reflects the return to the capital stock owned by U.S. citizens).

The textbook growth model accounts for those tendencies by including two assumptions, each based on past relationships. First, the model assumes that every dollar of deficit leads people to increase their private saving by 40 cents and thus reduces national saving by only 60 cents. Second, the model assumes that every decline of \$1 in national saving leads to a 40 cent increase in the amount of foreign capital invested in the United States. Together, those assumptions imply that a \$1 increase in the budget deficit results in a 40 cent increase in private saving, a 24 cent increase in capital inflows (24 cents equals 60 cents times 0.4), and a 36 cent decline in domestic investment.

Life-Cycle and Infinite-Horizon Growth Models

Like the textbook growth model, the life-cycle and infinite-horizon growth models ignore demand-side effects. Those models differ from the textbook growth model in several fundamental ways, however.³ Each assumes that people decide how much to work and save to make themselves as well off as possible over a lifetime. That behavior is calibrated so that such macroeconomic variables as the total amount of labor supplied and the size of the capital stock match that in the U.S. economy. In the life-cycle and infinite-horizon models, people's spending changes by a relatively large amount in response to changes in the after-tax rate of return on their saving—more, in some cases, than appears consistent with historical experience.

The life-cycle and infinite-horizon models are designed to consider the fact that people make decisions on the basis not only of information about the present but in keeping with their expectations about the future. The President's proposals for any given year can affect government spending and revenues over the 10-year projection period, and any deficits or surpluses that accumulate over that period can affect budgetary decisions in later years. People's expectations about those developments—correct or

not—can affect their behavior long before the changes materialize. Analysts disagree, however, on the extent to which expectations influence people's economic decisions, the time horizon over which people plan, or the future policy shifts they actually expect. CBO therefore analyzed the President's proposals using a wide range of assumptions about the extent of people's foresight and the expectations they might have about future policies. That approach yields a range of plausible estimates about how those proposals could affect economic growth.

The households in the life-cycle and infinite-horizon models are assumed to be forward-looking, to form expectations about future economic and policy developments that are rational and consistent with the model, and to alter their behavior accordingly. They are assumed to have perfect foresight about the future of the economy as a whole and about policies. The models assume the opposite of the range of possibilities in the textbook growth model. Most people's foresight actually falls somewhere between those two extremes, but using those two somewhat dramatic assumptions allows CBO to encompass the broadest possible range of responses to the President's budgetary proposals.

Although the life-cycle and infinite-horizon models do not provide a role for unpredictable fluctuations in aggregate output, the models do assume that individual households face unforeseeable (and idiosyncratic) fluctuations in their income against which they cannot buy insurance.⁴ Faced with that uncertainty, households hold some additional, "precautionary" savings as a buffer against potential drops in income. Because the precautionary motive to save is not strongly affected by changes in tax rates, households' savings do not respond as much to policy changes as they would in models that do not include the precautionary motive. That, in turn, makes CBO's model somewhat more realistic than models in which households are assumed to have no uncertainty about their future income.

Because people's behavior as represented in the life-cycle and infinite-horizon models depends in part on future policies, those models lead analysts to make assumptions about budgetary policies beyond 2018 (the end of the 10-year projection period). Policies that increased

3. For a detailed description of the life-cycle model, see Shinichi Nishiyama, *Analyzing Tax Policy Changes Using a Stochastic OLG Model with Heterogeneous Households*, CBO Technical Paper 2003-12 (December 2003). For a description of a model very similar to the infinite-horizon model, see S.R. Aiyagari, "Optimal Capital Income Taxation with Incomplete Markets, Borrowing Constraints, and Constant Discounting," *Journal of Political Economy*, vol. 103, no. 6 (December 1995), pp. 1158–1175.

4. Accounting for both aggregate uncertainty and idiosyncratic uncertainty in income creates significant computational difficulties.

deficits during the projection period would yield greater debt payments, requiring higher taxes or lower spending than would have been the case under CBO's baseline assumptions. Policies that reduced deficits would require the opposite.

Assumptions about how and when to finance the increased deficits can influence the estimated economic effects of the President's proposed policies over the 2009–2018 period. In the models, people anticipate the offsetting policies and plan accordingly. In its analysis, CBO used two assumptions about how the budget would be stabilized after 2018: Either marginal tax rates or government spending would be adjusted. (Spending adjustments are assumed to be spread roughly equally across government purchases of goods and services—which the models assume do not substitute for private spending—and transfer payments.) In either case, those adjustments are assumed to be phased in over the 10 years from 2019 to 2028.

The life-cycle and infinite-horizon models differ in their assumptions about how far ahead people look in making their plans. The life-cycle model is calibrated so that the probability of death at a given age matches current U.S. mortality rates, and people are assumed to consider the effects of future economic or policy changes only for themselves but not for their children. In the infinite-horizon model, people behave as though they expect to live forever—behavior that is effectively equivalent to acting as though the well-being of their descendants is as important to them as their own well-being. Although many people care about their descendants, there is evidence against the assumption used in the infinite-horizon model that people care as much about their descendants as they do about themselves.⁵

The difference in the models' time horizons has an important effect on the resulting estimates. Although

people in both models anticipate changes in policy under the President's budgetary proposals, older generations in the life-cycle model know that they could retire or die before a policy change occurs. Consequently, anticipation of policy changes tends to have a smaller effect on people's current behavior in the life-cycle model than it has in the infinite-horizon model.

Another characteristic that affects the models' estimates is the degree to which the domestic economy is open to the flow of foreign capital. That is important because foreign capital determines both how easily domestic investment can be financed by sources other than domestic saving and the degree to which budgetary policies can affect wage and interest rates. CBO used two opposite assumptions in the life-cycle model about how open the economy is to flows of capital to and from other countries. One assumption was that the economy is completely closed—no capital can flow into or out of the United States. The other was that the economy is completely open and cannot affect world interest rates—capital flows freely into and out of the country to keep the domestic interest rate equal to a constant world rate. The U.S. economy effectively operates somewhere between those two extremes; even though it is relatively open to investment, it is so large that it can influence world interest rates. By using the two assumptions, CBO obtained a range of results that bounds the probable effects of the modeled policy changes.

5. See Paul Evans, "Consumers Are Not Ricardian: Evidence from Nineteen Countries," *Economic Inquiry*, vol. 31, no. 4 (October 1993), pp. 534–548; Fumio Hayashi, Joseph Altonji, and Laurence Kotlikoff, "Risk Sharing Between and Within Families," *Econometrica*, vol. 64, no. 2 (March 1996), pp. 261–294; and T.D. Stanley, "New Wine in Old Bottles: A Meta-Analysis of Ricardian Equivalence," *Southern Economic Journal*, vol. 64, no. 3 (January 1998), pp. 713–727.



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