

GAO

Report to the Congress

March 2010

**STATE AND LOCAL
GOVERNMENTS'
FISCAL OUTLOOK**

March 2010 Update





Highlights of [GAO-10-358](#), a report to the Congress

Why GAO Did This Study

Fiscal sustainability presents a national challenge shared by all levels of government. Since 2007, GAO has published long-term fiscal simulations for the state and local government sector. These simulations show that, like the federal government, the state and local government sector faces persistent and long-term fiscal pressures.

Using the Bureau of Economic Analysis's National Income and Product Accounts (NIPA) as the primary data source, GAO's model projects the level of receipts and expenditures for the sector until 2060 based on current and historical spending and revenue patterns. GAO assumes the current set of policies in place across federal, state, and local governments remains constant. This update incorporates NIPA data including increased federal grant funding made available to the sector through the American Recovery and Reinvestment Act of 2009. The model simulates the long-term fiscal outlook for the state and local sector as a whole and, while the model incorporates the Congressional Budget Office's economic projections, adjustments are made to capture the budgetary effects of near-term cyclical swings in the economy. Because the model covers the sector in the aggregate, the fiscal outcomes for individual states and localities cannot be captured. This product is part of a body of work on the nation's long-term fiscal challenges. Related products can be found at <http://www.gao.gov/special.pubs/longterm/>.

View [GAO-10-358](#) or [key components](#). For more information, contact Stanley J. Czerwinski at (202) 512-6806 or czerwinski@gao.gov or Thomas J. McCool at (202) 512-2700 or mccoolt@gao.gov.

STATE AND LOCAL GOVERNMENTS' FISCAL OUTLOOK

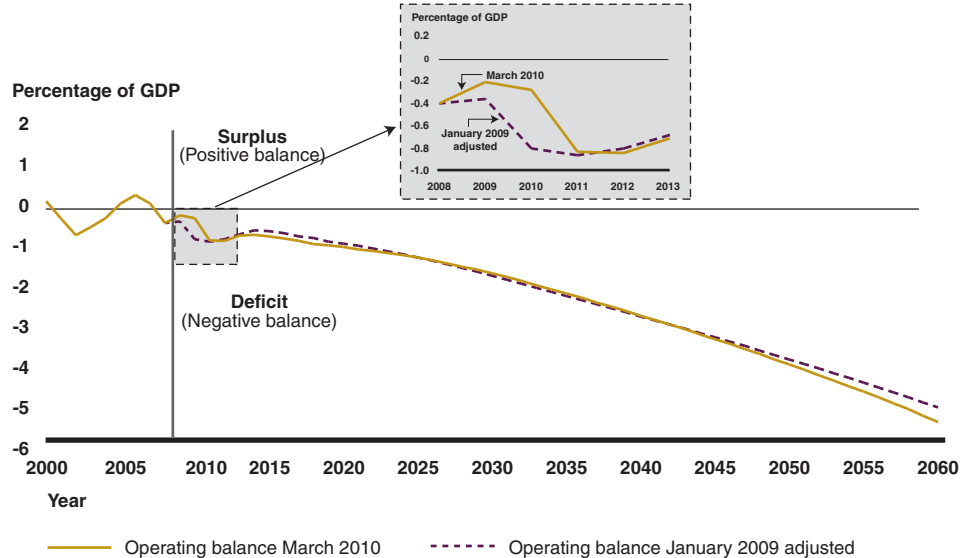
March 2010 Update

What GAO Found

The state and local government sector continues to face near- and long-term fiscal challenges which grow over time. Although the sector's near-term operating balance remains negative, increases in federal grants-in-aid—largely from the Recovery Act—alleviated some near-term pressure. As shown in the insert to the figure below, the March 2010 operating balance measure (including 2009 Recovery Act funds) shows an improvement compared to the January 2009 simulation. In the near-term, the sector's fiscal position can be attributed to several factors, including steep revenue declines.

GAO projects that the sector's long-term fiscal position will steadily decline through 2060 absent any policy changes, as shown in figure 1. The decline in the sector's operating balance is primarily driven by rising health care costs. The fiscal challenges confronting the state and local sector add to the nation's overall fiscal difficulties. Because most state and local governments are required to balance their operating budgets, the declining fiscal conditions shown in GAO's simulations suggest the fiscal pressures the sector faces and the extent to which these governments will need to make substantial policy changes to avoid growing imbalances.

State and Local Operating Balance Measure, as a Percentage of Gross Domestic Product
 Insert magnifying near-term fiscal position



Source: GAO simulations, updated March 2010 and January 2009 adjusted.

Notes: The operating balance is a measure of the sector's ability to cover its current expenditures out of current receipts. Historical data are from the Bureau of Economic Analysis's NIPA accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. Simulations are based on current policy.

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United States Government Accountability Office
Washington, DC 20548

March 2, 2010

Report to the Congress

Fiscal sustainability presents a national challenge shared by all levels of government. Recent economic events and state and local government efforts to maintain balance during the current recession have called attention to the immediate challenges facing these governments. The recession has substantially reduced states' and local governments' combined tax revenues. These immediate challenges exist alongside daunting long-term fiscal challenges for all levels of government.

For almost two decades, GAO has run long-term simulations showing that absent a change in policy, the combined effects of demographic changes and growing health care costs drive ever-increasing federal deficits and debt levels.¹ Under the authority of the Comptroller General, GAO began publishing long-term fiscal simulations for the state and local government sector in 2007. This report updates GAO's state and local fiscal model for the purposes of (1) analyzing the near-term effects of the recent economic downturn on the sector and (2) assessing the long-term outlook of the sector and identifying the key drivers of this outlook.

Using the U.S. Bureau of Economic Analysis's National Income and Product Accounts (NIPA) as the primary data source, our model projects the level of receipts and expenditures for the sector until 2060 based on current and historical spending and revenue patterns. We assume the current set of policies in place across federal, state, and local governments remains constant. This update incorporates NIPA data including increased federal grant funding made available to the sector through the American Recovery and Reinvestment Act of 2009 (Recovery Act). The model simulates the long-term fiscal outlook for the state and local sector as a whole and, while the model incorporates the Congressional Budget Office's economic projections, adjustments are made to capture the budgetary effects of near-term cyclical swings in the economy. Because the model covers the sector in the aggregate, the fiscal outcomes for individual states and localities cannot be captured. Also, the model does

¹See GAO, *The Federal Government's Long-Term Fiscal Outlook: January 2010 Update*, GAO-10-468SP (Washington, D.C.: March 2010). This and related products can be found at <http://www.gao.gov/special.pubs/longterm/>.

not identify whether the state or local government sector faces greater challenges. For additional information on the model's key assumptions, see Appendix I.

In summary, this March 2010 update to our model shows that the state and local government sector continues to face near-term budget and long-term fiscal challenges which grow over time. Although the sector's near-term operating balance remains negative, increases in federal grants-in-aid—largely from the Recovery Act—alleviated some near-term pressure. In the near-term, declines in the sector's fiscal position are attributable to several factors, including steep revenue declines.

In the long-term, we project that the fiscal position will steadily decline through 2060 absent any policy changes. The decline in the sector's operating balance is primarily driven by rising health care costs. The fiscal challenges confronting the state and local sector add to the nation's overall fiscal difficulties. Because most state and local governments are required to balance their operating budgets, the declining fiscal conditions shown in our simulations suggest the fiscal pressures the sector faces and foreshadow the extent to which these governments will need to make substantial policy changes and other adjustments to avoid growing fiscal imbalances.

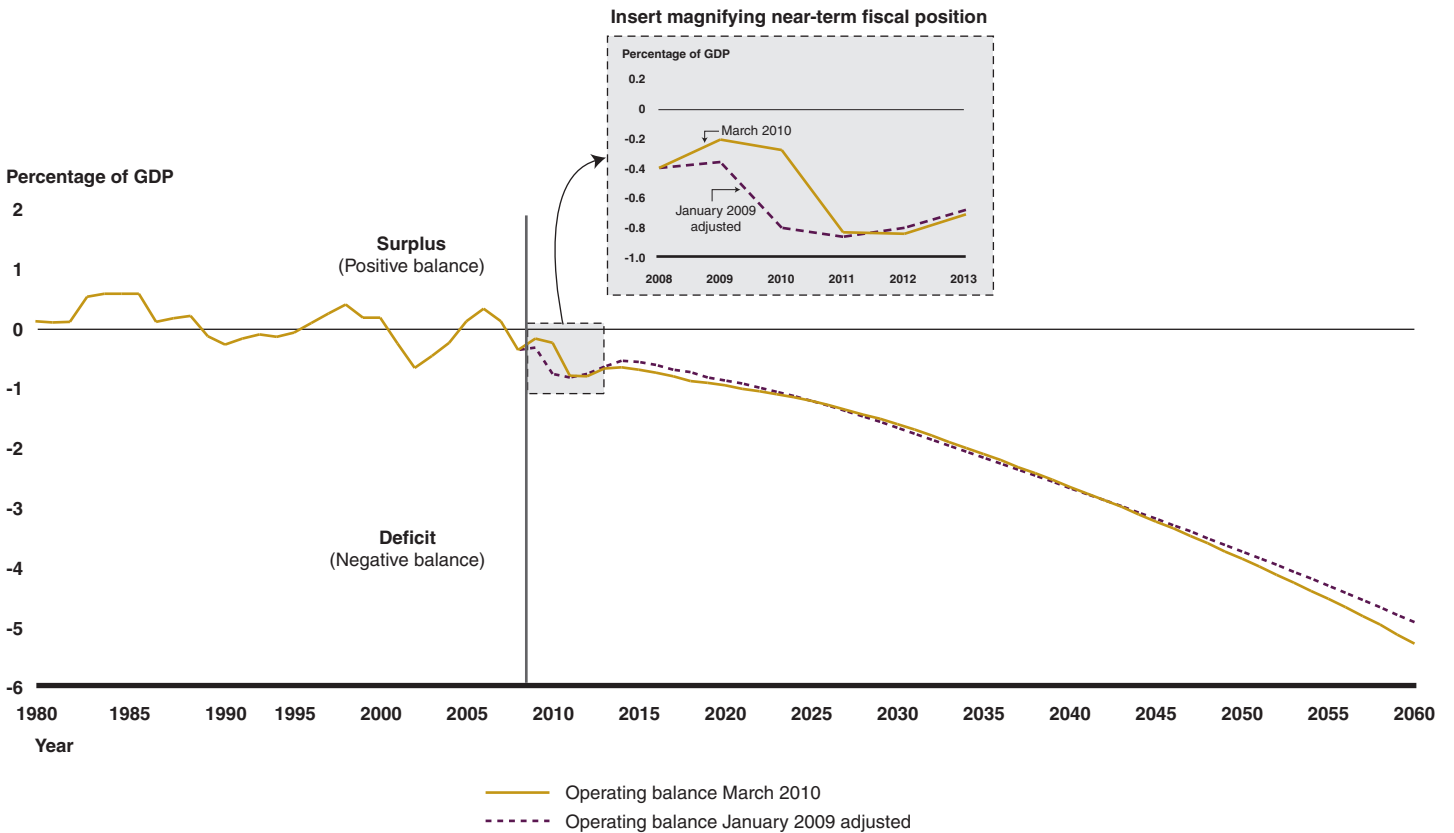
Infusion of Recovery Act Funds Helped State and Local Governments Address Budget Gaps in the Near-Term

This March 2010 update to our model shows that the state and local government sector faces near-term declines in its operating balance (figure 1).² These declines in the sector's fiscal position are attributable to several factors, including a reduction in projected tax receipts. An increase in federal grants-in-aid—largely from the Recovery Act—has helped state and local governments address fiscal challenges in the near-term.³ As shown in the insert to the figure below, the March 2010 operating balance measure (which includes the 2009 Recovery Act funds) shows an improvement compared to the January 2009 simulation.

²In figure 1, we use the term “January 2009 Adjusted” to refer to the results of our model published in GAO, Update of State and Local Government Fiscal Pressures, [GAO-09-320R](#) (Washington, D.C.: Jan. 26, 2009), which we adjusted to reflect the effect of reduced oil prices on the sector's expenditures. “March 2010” refers to the results of our most recent simulation, published in this report. See table 1 for a description of adjustments made to our simulations since the January 2009 report.

³Pub. L. No. 111-5, 123 Stat. 115 (Feb. 17, 2009).

Figure 1: State and Local Operating Balance Measure, as a Percentage of Gross Domestic Product^a



Source: GAO simulations, updated March 2010 and January 2009 adjusted.

Notes: Historical data are from the Bureau of Economic Analysis's National Income and Product Accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. Simulations are based on current policy.

^aData for this and other figures in this report can be downloaded at <http://www.gao.gov/special.pubs/longterm/data.html>.

The model uses the operating balance as a measure of fiscal balance for the sector for each year until 2060.⁴ As illustrated in figure 1, the operating balance generally was positive in the past except during and after recent

⁴The operating balance is a measure of the sector's ability to cover its current expenditures out of current receipts.

recessions. This suggests that, in the aggregate, the sector had been able to cover its expenses with incoming receipts.

The model results in near-term projected deficits, even after the inclusion of updated NIPA data which reflect Recovery Act grant funds received by state and local governments.⁵ Specifically, the model estimates operating deficits for the state and local sector of about \$39 billion for 2010 and \$124 billion for 2011. The cumulative two-year projected operating deficit is estimated to total approximately \$163 billion for 2010 and 2011.⁶ These results confirm our recent finding that while states' near-term revenue shortfalls have been cushioned by the temporary infusion of Recovery Act funds, states will continue to be fiscally stressed.⁷

One of the factors contributing to the model's projected near-term deficits is the sector's decline in some tax receipt categories, as illustrated in figure 2. Total tax receipts for the sector declined from about 9.25 percent of GDP in 2008 to 8.80 percent of GDP in 2009. We project a slight increase in total tax receipts to 8.82 percent of GDP in 2010.⁸ Personal income tax receipts declined from about 2.3 percent of GDP in 2008 to 1.9 percent in 2009. We project that these receipts will increase as a share of GDP beginning in 2009. As a percentage of GDP, state and local personal income tax declines exceeded revenue shifts from sales and property tax.

⁵While most states have requirements related to balancing their budgets, deficits might arise because of unanticipated events such as recessions. These cyclical deficits can occur because the planned annual revenues are not generated at the expected rate, demand for services exceeds planned expenditures, or both, thus resulting in a near-term or cyclical operating deficit.

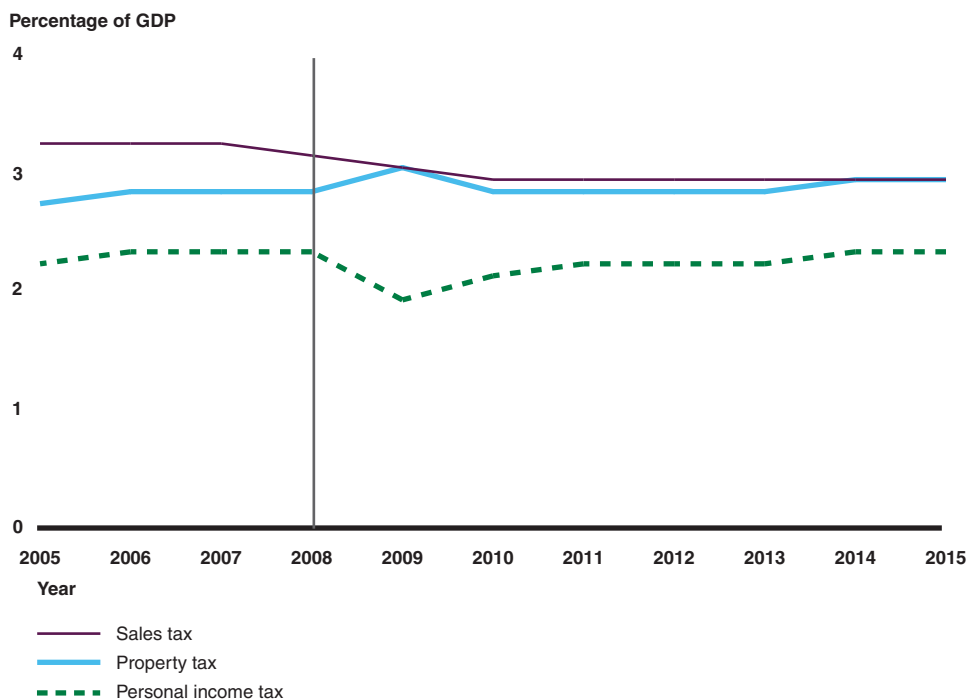
⁶These estimates do not attempt to assume forthcoming policy actions by federal, state or local governments and are based on analysis of historical data. Actual amounts will reflect policy actions taken by state and local governments to balance their budgets. Years are calendar years.

⁷See GAO, *Recovery Act: Status of States' and Localities' Use of Funds and Efforts to Ensure Accountability*, [GAO-10-231](#) (Washington, D.C.: Dec. 10, 2009); and GAO, *Recovery Act: Funds Continue to Provide Fiscal Relief to States and Localities, While Accountability and Reporting Challenges Need to Be Fully Addressed*, [GAO-09-1016](#) (Washington, D.C.: Sept. 23, 2009). See also National Governors Association and National Association of State Budget Officers, *The Fiscal Survey of States* (Washington, D.C.: Dec. 2009); National Association of Counties, *How are Counties Doing? An Economic Status Survey* (Washington, D.C.: Nov. 2009); and National League of Cities, *Research Brief on America's Cities, City Fiscal Conditions in 2009* (Washington, D.C.: Sept. 2009).

⁸We use historical data from BEA NIPA from 1980 to 2008. Data in 2009 are GAO estimates based on data available through the third quarter of 2009. GAO projections are from 2010 to 2060.

Property tax receipts as a percentage of GDP increased from about 2.8 percent in 2008 to about 3.0 percent in 2009. While property taxes increased as a percentage of GDP, property tax receipts increased just 2.7 percent—from about \$411 billion in 2008 to \$422 billion in 2009, the lowest annual increase since 1995. In addition, GDP decreased 1.3 percent—from about \$14.4 trillion to about \$14.3 trillion during the same period. We project that property tax receipts will continue to be about 3.0 percent of GDP through 2015.

Figure 2: State and Local Government Taxes, as a Percentage of Gross Domestic Product



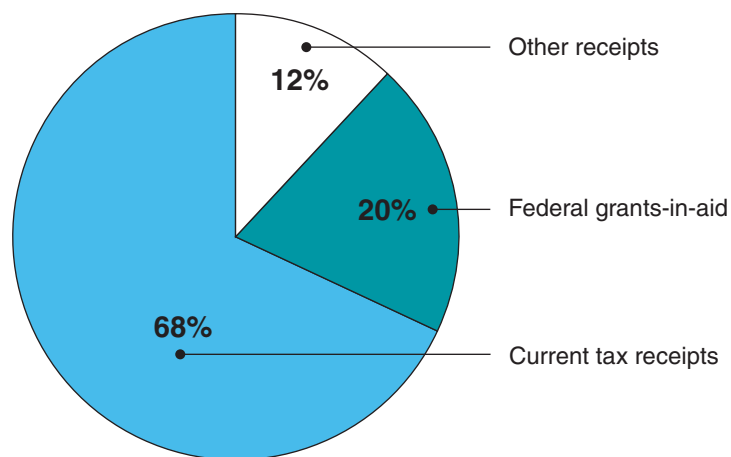
Source: GAO simulations, updated March 2010.

Notes: Historical data are from the Bureau of Economic Analysis's National Income and Product Accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. Simulations are based on current policy.

The state and local government sector's receipts in 2008 totaled almost \$2 trillion. As illustrated in figure 3, 68 percent—or about \$1.3 trillion in 2008—of the sector's receipts are comprised of tax receipts, including personal income, sales, and property taxes. Federal grants-in-aid comprise

the second largest source of receipts for the sector, providing about \$392 billion to the sector. In 2008, the sector had about \$246 billion in other receipts, including income on assets and contributions for government insurance.

Figure 3: State and Local Government Current Receipts by Category, 2008



Source: GAO analysis of NIPA data.

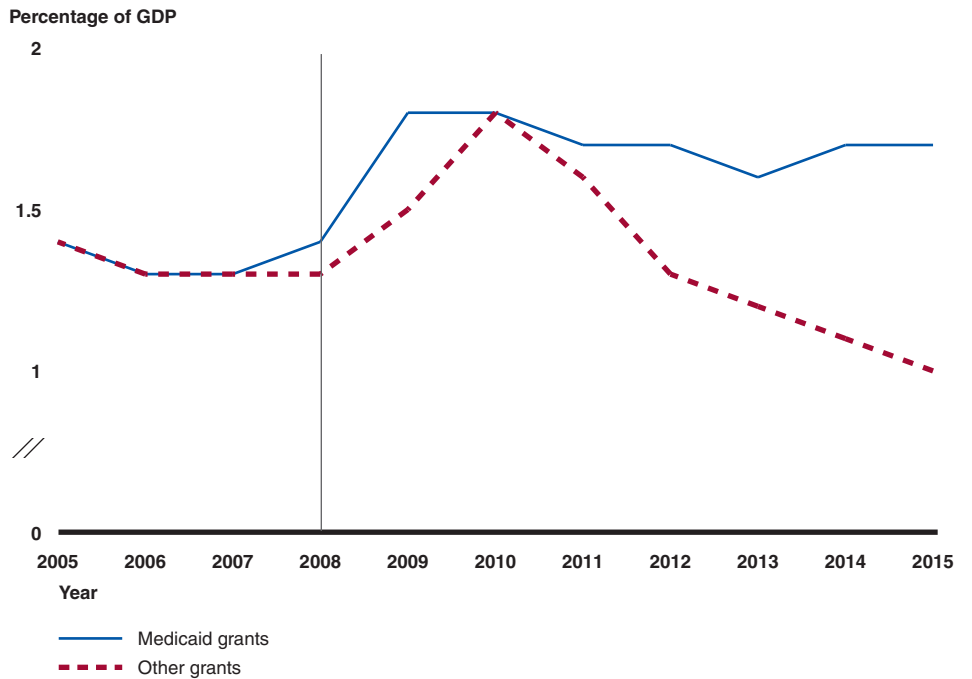
Notes: Other receipts includes income on assets, contributions for government insurance, surplus from government enterprises, and transfer receipts from businesses and persons.

In the near-term, federal grants-in-aid—which in 2009 included funding from the Recovery Act—helped offset the sector’s tax receipt declines. Medicaid and other federal grants are projected to grow as a share of GDP through 2010 (figure 4).⁹ After 2010, the model projects that as a percentage of GDP, Medicaid grants will decline through 2012 and then begin to increase. Other federal grants—including those for education, highways, weatherization, housing, and other programs—are projected to

⁹Medicaid is a joint federal-state program that finances health care for certain categories of low-income individuals, including children, families, persons with disabilities, and persons who are elderly. The federal government provides assistance to states (known as the Federal Medical Assistance Percentage, or FMAP) for Medicaid services according to a formula based on each state’s per capita income in relation to the national average per capita income. Under the Recovery Act, states are eligible for an increased FMAP for expenditures that states make in providing services to their Medicaid populations. The Recovery Act provides eligible states with this increased FMAP for 27 months between October 1, 2008, and December 31, 2010.

decline as a percentage of GDP after 2010, consistent with CBO's assumptions.

Figure 4: State and Local Government Grants, as a Percentage of Gross Domestic Product



Source: GAO simulations, updated March 2010.

Note: Historical data are from the Bureau of Economic Analysis's National Income and Product Accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. Simulations are based on current policy.

State and Local Sector Continues to Face Long-Term Fiscal Challenges Driven by Growing Health Care Costs

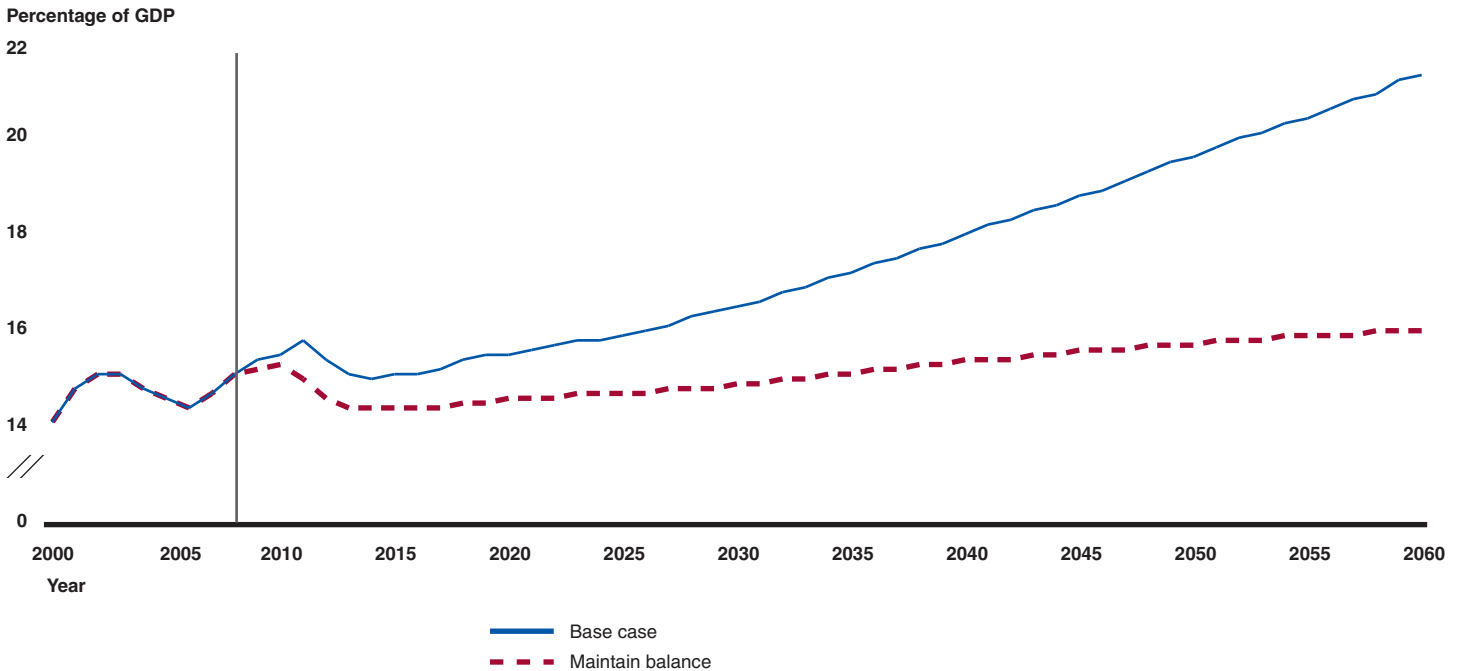
The fiscal challenges confronting the state and local sector add to the nation's overall fiscal difficulties. As we have reported in previous model updates, and as shown in figure 1 above, the sector faces growing long-term fiscal challenges.¹⁰ We project that the fiscal position of the sector will steadily decline through 2060 absent any policy changes.¹¹ The decline in the sector's operating balance is primarily driven by rising health care costs. Because most state and local governments are required to balance their operating budgets, the declining fiscal conditions shown in our simulations suggest the fiscal pressures the sector faces and foreshadow the extent to which these governments will need to make substantial policy changes to avoid growing fiscal imbalances.

One way of measuring the long-term challenges faced by the state and local sector is through a measure known as the "fiscal gap." The fiscal gap is an estimate of the action needed today and maintained for each and every year to achieve fiscal balance over a certain period. We measured the gap as the amount of spending reduction or tax increase needed to prevent operating deficits (or negative operating balances). As shown in figure 5, we calculated that closing the fiscal gap would require action to be taken today and maintained for each and every year going forward equivalent to a 12.3 percent reduction in state and local government current expenditures. Closing the fiscal gap through revenue increases would require action of a similar magnitude through increased state and local tax receipts.

¹⁰The most recent prior update is GAO, *Update of State and Local Fiscal Pressures*, [GAO-09-320R](#) (Washington, D.C.: Jan. 26, 2009). See also GAO, *State and Local Fiscal Challenges: Rising Health Care Costs Drive Long-term and Immediate Pressures*, [GAO-09-210T](#) (Washington, D.C.: Nov. 19, 2008).

¹¹The explicit definition of our operating balance measure is all receipts, excluding funds used for long-term investments, minus current expenditures. To develop this measure, we subtract funds used to finance longer-term projects—such as investments in buildings and roads—from receipts since these funds would not be available to cover current expenses. Similarly, we exclude capital-related expenditures from spending.

Figure 5: Extent of State and Local Government Action Required to Maintain Balance (State and Local Expenditures, as a Percentage of Gross Domestic Product)



Source: GAO simulations, updated March 2010.

Note: Historical data are from the Bureau of Economic Analysis’s National Income and Product Accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. Simulations are based on current policy. In the “base case” model we assume that the tax structure is not changed in the future and that the provision of real government services per capita remains roughly constant. That is, a basic assumption of our model is that the current set of policies in place across state and local government remains constant.

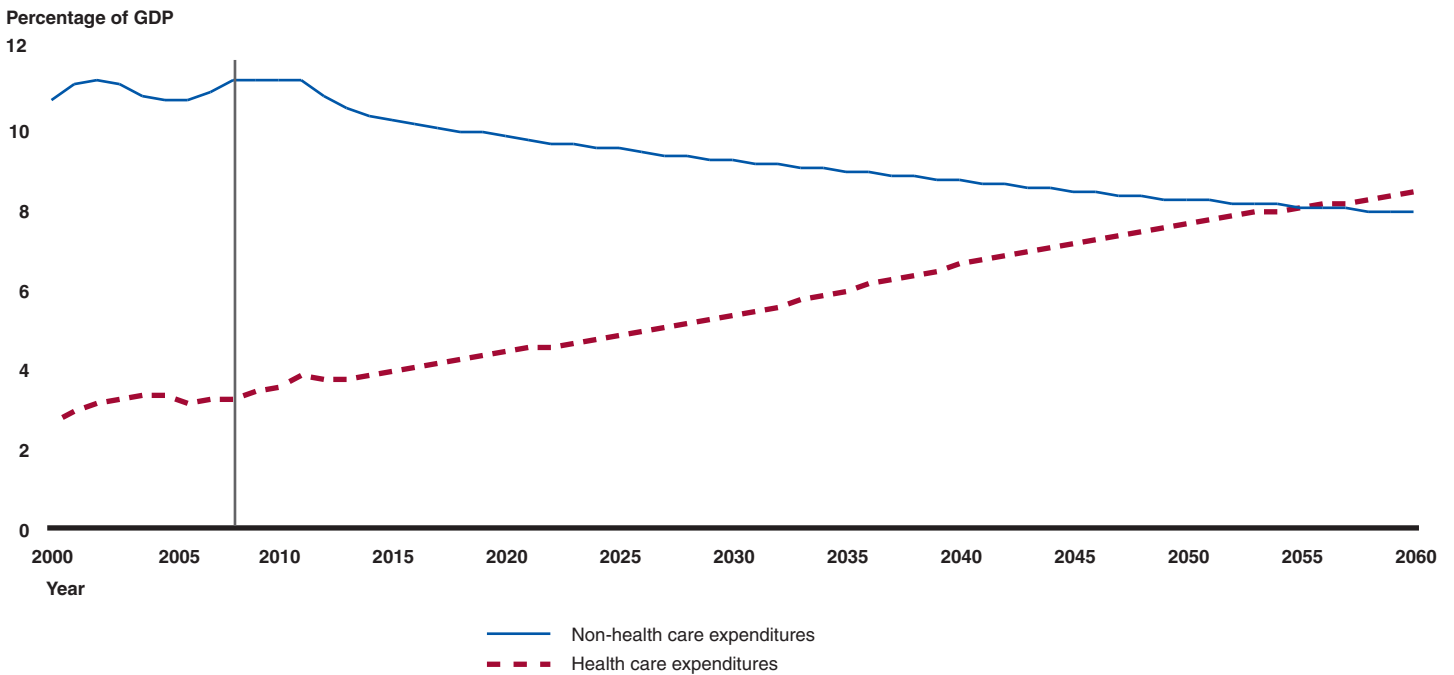
The primary driver of fiscal challenges for the state and local government sector continues to be the growth in health-related costs. Specifically, state and local expenditures on Medicaid and the cost of health insurance for state and local retirees and employees are projected to grow more than

GDP.¹² The model also projects that the sector's health-related costs will be about 3.5 percent of GDP in 2010 and 3.8 percent of GDP in 2011. In contrast, we found that other types of state and local government expenditures—including wages and salaries of state and local workers and investments in capital goods—are expected to grow slightly less than GDP. We also found that revenue growth, excluding Medicaid grants from the federal government, is projected to be relatively flat as a percentage of GDP. As such, the projected rise in health-related costs is the root of the fiscal difficulties these simulations suggest will occur. Our simulations for health-related and other expenditures are shown in figure 6.¹³

¹²One of the most central assumptions we must make to estimate the pay-as-you-go health expenditures for employees and retirees in future years is the cost growth of health care. The extent to which the per-person cost of health care is expected to grow beyond GDP per capita is called the “excess cost factor.” We estimate the excess cost factor using unpublished data from the Centers for Medicare & Medicaid Services’ (CMS) Office of the Actuary. Between 2008 and 2009, CMS reduced its assumption for average annual excess cost growth during 2010-2080 from 1.3 percent to 0.8 percent, which we incorporated into our model. This reduced the growth in our Medicaid and employee and retiree health spending projections from our January 2009 simulation.

¹³Interest payments that these governments will need to pay on their outstanding debt will also likely be a rising expense for the sector in the future. Rising interest costs are merely a reflection of the sustained deficits the model predicts across future years.

Figure 6: Health and Non-Health Expenditures of State and Local Governments, as a Percentage of Gross Domestic Product



Note: Historical data are from the Bureau of Economic Analysis’s National Income and Product Accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. Simulations are based on current policy.

Recent declines in pension asset values stemming from the current recession could also affect the sector’s long-term fiscal position. The sector experienced a decline in pension asset values of 27.6 percent—from \$3.2 trillion at the end of 2007 to \$2.3 trillion at the end of 2008. Our March 2009 estimate of the sector’s required contribution rate rose to 9.9 percent of the sector’s wages, which is higher than the sector’s actual 8.3 percent of wages contributed in 2008. While governments can postpone increasing the annual contribution rate, postponing action could increase the rate needed to fully fund pensions. In addition to declines in pension asset values and the challenge of fully funding pension benefits, state and local

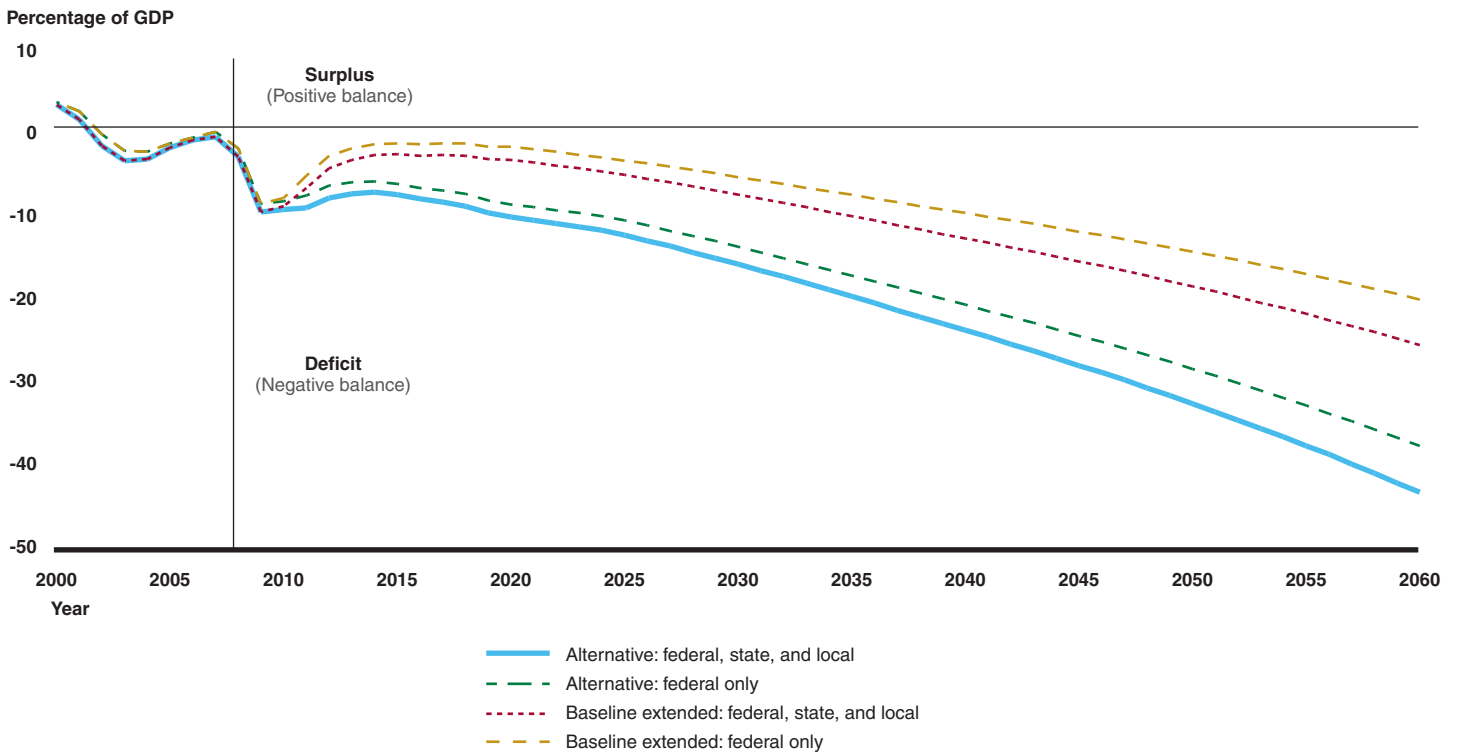
governments also face challenges funding their liabilities for other public employee benefits (which are primarily retiree health benefits).¹⁴

Similar to these state and local model findings, our most recent long-term federal model simulations continue to show health spending as one of the key drivers of long-term, unsustainable structural deficits.¹⁵ As we, the CBO, and others have previously reported, the continued rise in health care costs poses challenges to not only the budgets of federal, state, and local governments, but also to American businesses, families, and societies as a whole. Figure 7 shows two simulations for the federal fiscal path under alternative assumptions and overlays the simulated fiscal imbalance of the state and local government sector. The overlay of the state and local government model's simulations in both the baseline and alternative scenarios shows that state and local governments' fiscal challenges impose further fiscal challenges on the nation's economy in the next several decades.

¹⁴See GAO, *State and Local Government Retiree Health Benefits: Liabilities Are Largely Unfunded, but Some Governments Are Taking Action*, [GAO-10-61](#) (Washington, D.C.: Nov. 30, 2009). Most state and local governments pay for employee and retiree health insurance on a pay-as-you-go basis—that is, these benefits are generally not prefunded. To estimate expenditures for employee and retiree health insurance in future years, we assume that the same percentage of employees and retirees of state and local governments will be enrolled in health insurance through their previous employer as we observe were enrolled in 2005. The Agency for Healthcare Research and Quality updated its Medical Expenditure Panel Survey (MEPS) data in the fall of 2009 covering the period through 2008, which we have incorporated into this update.

¹⁵[GAO-10-468SP](#)

Figure 7: Federal and State/Local Surpluses and Deficits, as a Percentage of Gross Domestic Product



Source: Historical data from NIPA and GAO analysis.

Note: Historical data are from the Bureau of Economic Analysis's National Income and Product Accounts from 1980 to 2008. Data in 2009 are GAO estimates aligned with published data where available. GAO simulations are from 2010 to 2060, using many Congressional Budget Office projections and assumptions, particularly for the next 10 years. The state and local balance measure is similar to the federal unified budget measure. The baseline simulation uses CBO projections and assumes that taxes and expenditures during the next 10 years are in line with current law. The alternative simulation assumes expiring tax provisions are extended and that discretionary spending grows with GDP.

Our federal baseline simulation uses CBO projections for the next 10 years and assumes that taxes and expenditures during this time period are in line with current law. For example, we assume that a variety of federal tax provisions—mostly tax reductions—that are set to expire are allowed to expire, and that discretionary expenditures of the federal government grow with inflation. After the first 10 years, we use the Social Security and Medicare Trustees' 75-year intermediate estimates for those programs and CBO's mid-range Medicaid estimates. All other expenditures, as well as receipts, are held constant as a share of GDP after the first 10 years.

Our alternative federal simulation assumes that during the next 10 years, expiring tax provisions are extended and that federal discretionary spending grows with GDP—a faster pace than inflation. After the 10-year timeframe, we assume that action is taken to return revenue to its historical share of GDP. The alternative simulation also incorporates somewhat higher Medicare estimates reflecting historical trends that physician payments are not reduced as specified under current law.

We conducted our work for this model update from August 2009 to March 2010 in accordance with all sections of GAO's Quality Assurance Framework that are relevant to our objectives. The framework requires that we plan and perform the engagement to obtain sufficient and appropriate evidence to meet our stated objectives and to discuss any limitations in our work. We believe that the information and data obtained, and the analysis conducted, provide a reasonable basis for any findings and conclusions.

We are sending copies of this report to interested congressional committees. The report is part of a body of work on the long-term fiscal challenge and is available free of charge at <http://www.gao.gov/special.pubs/longterm/>.

If you or your staffs have any questions about this report, please contact Stanley J. Czerwinski at (202) 512-6806 or czerwinskis@gao.gov or Thomas J. McCool at (202) 512-2700 or mccoolt@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix II.



Stanley J. Czerwinski
Director, Strategic Issues



Thomas J. McCool
Director, Center for Economics

Appendix I: Scope and Methodology

To answer our two reporting objectives, we incorporated updated data into and analyzed output from GAO's State and Local Fiscal Model. While the model's key data sources and assumptions are summarized below, a detailed explanation of the model's methodology is available in Appendices I-IV of GAO, *State and Local Governments: Growing Fiscal Challenges Will Emerge During the Next 10 Years*, [GAO-08-317](#) (Washington, D.C.: January 2008).

Using the National Income and Product Accounts prepared by the U.S. Bureau of Economic Analysis as a primary data source, our state and local model projects the level of receipts and expenditures for the sector in future years based on current and historical spending and revenue patterns.¹ To develop these long-run simulations, we make projections for each major receipt and expenditure category of the state and local government sector in future years. We project the growth in each category of receipts and expenditures using CBO's economic assumptions whenever possible.² In several cases we were not able to obtain existing projections and needed to develop our own assumptions about the likely future growth path of certain receipts or expenditures. Key categories of receipts for state and local governments include several types of taxes (personal income, sales, property, and corporate), income on assets owned by the sector, and grants from the federal government. Categories of expenditures include wages and salaries of state and local employees, health insurance costs, pension costs, payments of social benefits (e.g. Medicaid and unemployment), depreciation expenses on state and local capital stock, interest payments on state and local financial debt, and other expenditures of the sector. Our model assumes current policies remain in place. Since our last simulation in January 2009, we have made several adjustments to the model in light of recent economic events, as summarized in table 1.

¹The model incorporates data available after BEA's comprehensive revision of the NIPA in July 2009.

²In Congressional Budget Office, *CBO's Economic Forecasting Record: 2009 Update* (Washington, D.C.: July 2009), CBO warns that the uncertainty inherent in its current forecasts exceeds the historical average because the current degree of economic dislocation exceeds that of any previous period in the past half-century.

Table 1: Modifications to Assumptions for March 2010 Update

Variable	Previous assumptions	Updated assumptions
State and local consumption excluding employee compensation and capital consumption—or “other consumption” (GSLCO)	Other consumption expenditures grow with population plus inflation. In our January 2009 simulations, we adjusted the projected 2008 value of this variable upward because energy price increases raised other consumption expenditures far more than the growth of population plus inflation.	<p>In 2009, oil prices fell greatly, and the level of other consumption expenditures was below the level our standard assumption implies. In 2010 we increased this spending category to its 2000-2007 average as a share of GDP. Thereafter, we let other consumption expenditures grow with population plus inflation as per our standard assumption.</p> <p>In figure 1, we adjusted the January 2009 simulation (now labeled January 2009 adjusted) to incorporate the same assumptions for this spending category. Specifically, we used the same percentage of GDP for other consumption in the January 2009 adjusted simulation as we are using in the March 2010 simulation. This adjustment for years 2008, 2009, and 2010 removes the over-prediction of other consumption caused by our assumption in January 2009 that the 2008 historical peak in consumption expenditures was permanent rather than temporary.</p>
Total state and local government retirement fund assets (L1TOTALFA)	In previous updates, we used the last year-end historical value of pension fund assets, along with other elements, to calculate the contribution that governments must make to fully fund employee pension benefits. ^a	Because asset values can exhibit substantial volatility, governments typically use smoothed asset values in their pension funding calculations. Accordingly, in this update, we use the average value of pension fund assets over the previous five years to calculate the contribution rate needed to fully fund pensions. Even though this smoothing somewhat dampens the effect of the recent drop in asset values, that drop still raises our estimate of the required contribution rate significantly from previous estimates.
Medium and long-term municipal securities outstanding (DBTGSLLT)	The model’s estimate of state and local governments’ issuance of medium- and long-term debt depends on the difference between capital acquisitions and federal investment grants, municipal bond rates, and a first-order autoregressive error term, which adjusts the current year’s estimate by some portion of the amount by which the equation over- or under-estimated the previous year’s value.	Because an anomalously low amount of debt was issued in 2008, the year before the first projection year, the model under-predicted the change in debt in the early projection years. This overstated the model’s estimate for the operating deficit because it implies a greater portion of general revenues must be used to finance investment rather than operating expenditures. ^b To address this issue, we now generate projections for debt issuance by excluding the autoregressive error term, which produces debt issuance values closer to general historical trends.
Employment cost indexes for private wages and salaries (JECIWSP) and state and local government wages and salaries (JECISTLC)	Our standard assumption is that both private wages and salaries and state and local government wages and salaries grow at the rate CBO assumes for the employment cost index in the final years of its ten-year economic projections.	We used a wage growth assumption of 3.1 percent, which is 0.1 percent higher than CBO’s 3.0 percent assumption, to offset the 0.1 percent increase in CBO’s GDP price inflation assumption from 1.7 percent in August 2009 to 1.8 percent in January 2010. If we had used CBO’s wage growth assumption, wages would decline as a share of GDP when compared with our previous projections, which is inconsistent with our projections’ unchanged rates of real GDP growth.

Appendix I: Scope and Methodology

Variable	Previous assumptions	Updated assumptions
Total state and local government employment (EGSLALL)	Our standard assumption is that state and local government employment grows at the same rate as total population. We obtain data from NIPA to estimate this variable.	Because 2009 data on total employment was not available from NIPA at the time of our analysis, we used data from the Bureau of Labor Statistic's Current Employment Statistics program to estimate the sector's 2009 employment level. Also, we chose not to use our standard assumption because the economy was in recession during 2009. Instead, we estimated a non-recessionary employment level for 2010 by multiplying the average share of total population during the 2001-2009 period by 2010's projection population. After 2010, we assume the employment level grows with total population.
Rate on AAA-rated municipal bonds (RMMUNIBB20)	In previous models, we used the rate on Moody's AAA-rated municipal bonds (RMMUNIAAAA) as the interest rate to derive the effective rate on the sector's credit market debt (RATEOWED). Our standard approach to project the AAA-rated municipal bond rate has been to use an estimated relationship between that rate and the 10-year Treasury yield, with an adjustment for the amount by which the relationship under- or over-predicts the last historical value.	To align our methods with other major sources, we now use the Bond Buyer GO 20-Bond Municipal Bond Index as our data source and adjusted our relationships for RATEOWED accordingly. Because municipal bond rates were unusually high relative to Treasury yields in the year preceding our projections, our standard assumption results in what appears to be excessively high projections for the municipal bond rate. We added an adjustment factor that gradually brings the municipal bond rate below the 10-year Treasury note rate.
Federal investment grants (IGRANTCBO) and federal non-Medicaid grants—or other federal grants (GFAIDSLO)	We assume that federal investment grants grow at the same rate as CBO's projections for federal capital transfers for the first 10 years. We project other federal grants by subtracting CBO's Medicaid grant projections from CBO's total grants for current expenditures. For both federal investment and other federal grants, we assume that grants grow with inflation plus population growth after the first 10 years.	At the time of our March 2010 update, CBO's NIPA-consistent values for federal grants were not available. To estimate federal investment and other federal grants, we multiplied the January 2010 GDP projection with an estimate of each variable's respective share of GDP derived from CBO's most recently available projections.
State personal income tax receipts (TXPGSTATE)	We simulate future state personal income tax receipts by estimating the long-run responsiveness, or elasticity, of receipts to taxable personal income. The long-run elasticity estimate depicts the extent to which tax receipts grow in response to income growth but does not capture their short-run reaction to changes in income over the business cycle.	We assumed a delay in adjustment that kept receipts one-tenth of one percent of GDP below the long run level in 2010. In 2011, we let state personal tax receipts return to their long run level.
General sales tax receipts (TXIMGSLGEN)	We estimated the long-term responsiveness of our measure of the sales tax base to aggregate wage and salary income. Given projections of aggregate income, this elasticity provides a future path for the sales tax base.	Because this long-run relationship does not capture cyclical adjustments well, we adjusted the 2010 level downward by a tenth of a percent of GDP so that the category of which it is a part is the same share of GDP as IHS Global Insight projections in 2010.

Appendix I: Scope and Methodology

Variable	Previous assumptions	Updated assumptions
Property tax receipts (TXIMGSLPROP)	Property tax receipts are assumed to grow with our projections of the property tax base. In turn, property tax base projections are based on our estimate of the relationship between real GDP and the real market value of real estate owned by both the household sector and the nonfarm, nonfinancial business sector.	Because our standard assumption does not adequately capture shorter term developments—particularly in recent years—we set property taxes in 2010 equal to their 2.8 percent average share of GDP during the non-recessionary years from 2002 through 2008. Thereafter, we let receipts grow from this level according to the long run relationship.

Source: GAO analysis.

Note: See Appendices I-IV of GAO, *State and Local Governments: Growing Fiscal Challenges Will Emerge During the Next 10 Years*, [GAO-08-317](#) (Washington, D.C.: January 2008) for a description of all assumptions made in the state and local model. Appendix V in [GAO-08-317](#) provides a list of all model variables and definitions.

^aOther elements include employment growth, beneficiary growth, wage growth, inflation, mortality, the real rate of return, and the employees' own contributions.

^bIn developing the operating balance measure, we subtract an estimate of general funds used to finance longer-term projects—such as investments in equipment and roads—from total receipts since these funds would not be available to cover current expenses. The estimate of general funds used for investment equals total investment minus the sum of federal grants and the change in debt.

Appendix II: GAO Contacts and Staff Acknowledgments

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