



December 2019

STATE AND LOCAL GOVERNMENTS' FISCAL OUTLOOK

2019 Update

Accessible Version

GAO Highlights

Highlights of [GAO-20-269SP](#), a report to the Congress

View [GAO-20-269SP](#). For more information, contact Michelle Sager at (202) 512-6806 or sagem@gao.gov or Oliver Richard, (202) 512-8424 or richardo@gao.gov.

Why GAO Did This Study

Fiscal sustainability presents a national challenge shared by all levels of government. Since 2007, GAO has published simulations of long-term fiscal trends in the state and local government sector, which have consistently shown that the sector faces long-term fiscal pressures. While a great majority of states have requirements related to balancing their budgets, deficits can arise for reasons including planned annual revenues are not generated at the expected rate, demand for services exceeds planned expenditures, or both, resulting in a near-term operating deficit.

This report updates GAO's state and local fiscal model to simulate the fiscal outlook for the state and local government sector. This includes identifying the components of state and local expenditures likely to contribute to the sector's fiscal pressures as well as the effects of revenue changes on the sector's outlook.

GAO's model uses the Bureau of Economic Analysis's National Income and Product Accounts as the primary data source and presents the results in the aggregate for the state and local government sector as a whole. The model shows the expected level of receipts and expenditures for the sector until 2068, based on historical spending and revenue patterns. In addition, the model assumes that the current set of policies in place across state and local governments remains constant to show a simulated long-term outlook. Because the model covers the sector in the aggregate, the fiscal outcomes for individual states and localities cannot be identified.

December 2019

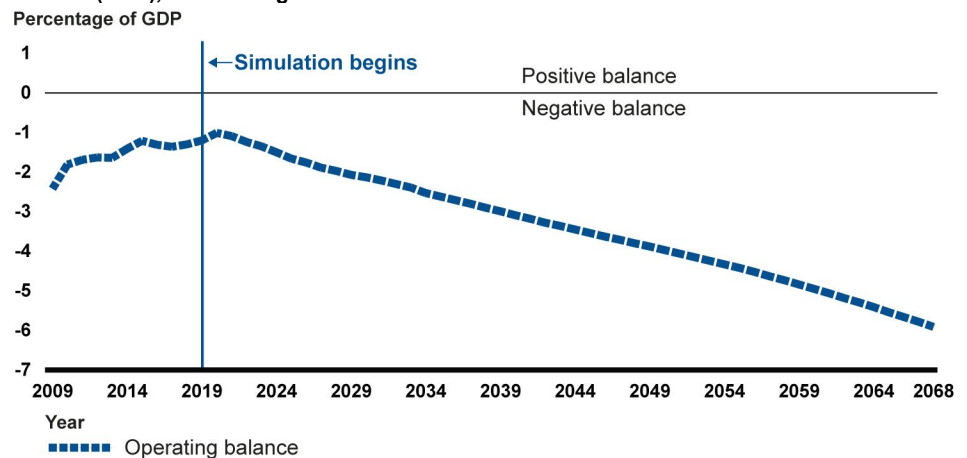
STATE AND LOCAL GOVERNMENTS' FISCAL OUTLOOK

2019 Update

What GAO Found

GAO's simulations suggest that state and local governments will likely face an increasing difference between expenditures and revenues during the next 50 years as reflected by the operating balance—a measure of the sector's ability to cover its current expenditures out of its current revenues. While both expenditures and revenues are projected to increase as a percentage of United States' gross domestic product (GDP), a difference between the two is projected to persist because expenditures are expected to grow faster than revenues throughout the simulation period. The sector would need to make changes to avoid fiscal imbalance and assure that revenues are at least equal to expenditures.

State and Local Government Sector Operating Balance as a Percentage of Gross Domestic Product (GDP), 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data table for State and Local Government Sector Operating Balance as a Percentage of Gross Domestic Product (GDP), 2009 through 2068

Year	Operating Balance
2009	-2.42
2010	-1.81
2011	-1.69
2012	-1.63
2013	-1.64
2014	-1.41
2015	-1.21
2016	-1.31

Year	Operating Balance
2017	-1.36
2018	-1.30
2019	-1.20
2020	-1.01
2021	-1.09
2022	-1.24
2023	-1.35
2024	-1.50
2025	-1.66
2026	-1.76
2027	-1.89
2028	-1.97
2029	-2.07
2030	-2.13
2031	-2.21
2032	-2.30
2033	-2.39
2034	-2.53
2035	-2.62
2036	-2.71
2037	-2.80
2038	-2.90
2039	-2.99
2040	-3.09
2041	-3.18
2042	-3.28
2043	-3.36
2044	-3.45
2045	-3.54
2046	-3.63
2047	-3.71
2048	-3.80
2049	-3.88
2050	-3.97
2051	-4.06
2052	-4.15
2053	-4.24
2054	-4.33
2055	-4.42
2056	-4.52
2057	-4.63
2058	-4.73
2059	-4.84
2060	-4.95
2061	-5.06
2062	-5.18
2063	-5.29

Year	Operating Balance
2064	-5.41
2065	-5.54
2066	-5.66
2067	-5.78
2068	-5.91

GAO's simulations suggest that growth in the sector's overall expenditures is largely driven by health care, with states' share of Medicaid spending as the primary driver. These expenditures are projected to grow more than GDP each year. Employee compensation, the largest share of operating expenditures, decreases as a share of GDP during the simulation period. Health benefits are the only component of employee compensation that increase as a percentage of GDP. Revenues from federal grants to states and localities are also expected to increase during the simulation period, in part because of Medicaid grants to states.

GAO also conducts sensitivity analyses to see how the sector's outlook changes when using alternative assumptions of key model variables – economic growth, health care excess cost growth, and the real rate of return on pension assets. Using these alternative assumptions highlights the operating balance's sensitivity to changes and possible shifts in the future fiscal outcomes for the sector.

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Abbreviations

BEA	Bureau of Economic Analysis
CBO	Congressional Budget Office
CHIP	Children’s Health Insurance Program
CMS	Centers for Medicare & Medicaid Services
GDP	gross domestic product
NIPA	National Income and Product Accounts
OASDI Trustees	the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds
Treasury	U.S. Department of the Treasury

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December 19, 2019

Report to the Congress

Fiscal sustainability presents a national challenge shared by all levels of government. The federal government and state and local governments share responsibility in fulfilling important national goals and providing essential services to citizens. State and local governments provide primary and secondary education, health care, libraries, police and fire protection services, social programs, roads and other infrastructure, public colleges and universities, and more. These subnational governments rely on the federal government for significant portions of their revenue. Given the nature of the partnership among levels of government in providing services, understanding potential future fiscal conditions of the state and local government sector is important for federal policymaking.

To provide Congress and the public with this broader context, we developed a fiscal model of the state and local government sector, which we first reported on in 2007 and have regularly updated since.¹ This report presents our updated fiscal outlook for the sector based on the most recently available data and identifies drivers of the state and local revenues and expenditures that are likely to require attention in the future. Further, to illustrate uncertainties in the sector's fiscal outlook, we developed simulations using alternative assumptions of key model variables. For information on the model's key assumptions and our methodology for developing the model and alternative simulations, see appendix I.

We conducted our work for this model update from August 2019 to December 2019 in accordance with all sections of our 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 in this product.

¹A complete listing of our past products is shown at the end of this report.

State and Local Governments Will Need to Make Policy Changes to Achieve Fiscal Balance

Our simulations suggest that the sector will likely continue to face a difference between revenues and expenditures during the next 50 years, as measured by its operating balance.² We simulated the state and local government sector's operating balance—a measure of the sector's ability to cover its current expenditures out of current revenues—to understand the sector's long-term fiscal outlook based on historical revenue patterns and other assumptions.³ Because a great majority of states and many local governments are required to balance or nearly balance their operating budgets, the operating balance illustrates the magnitude of

Operating Balance

A measure of the state and local government sector's ability to cover current expenditures out of current revenues net of funds for capital expenditures. It is defined as total revenues minus (1) capital outlays not financed by long-term debt issuance, (2) current expenditures less depreciation, (3) current surplus of state and local government enterprises, and (4) net social insurance fund balance.

Source: GAO. | GAO-20-269SP

²The operating balance measure includes all receipts, excluding funds used for long-term investments, less 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 be unavailable to cover current expenses. Similarly, we exclude capital-related expenditures from spending. While most states have requirements related to balancing their budgets, deficits can arise because of unanticipated events such as recessions. These deficits can occur because the planned annual revenues are not generated at the expected rate, demand for services exceeds planned expenditures, or both, resulting in a near-term operating deficit. States have tapped fiscal reserves to cope with revenue shortfalls during recessions, as indicated by their reported total balances, which are composed of general fund ending balances and amounts in state budget stabilization “rainy day” funds. Figure 1 depicts the state and local simulated operating balance only, and does not include fiscal reserves or other budget measures used to cope with revenue shortfalls.

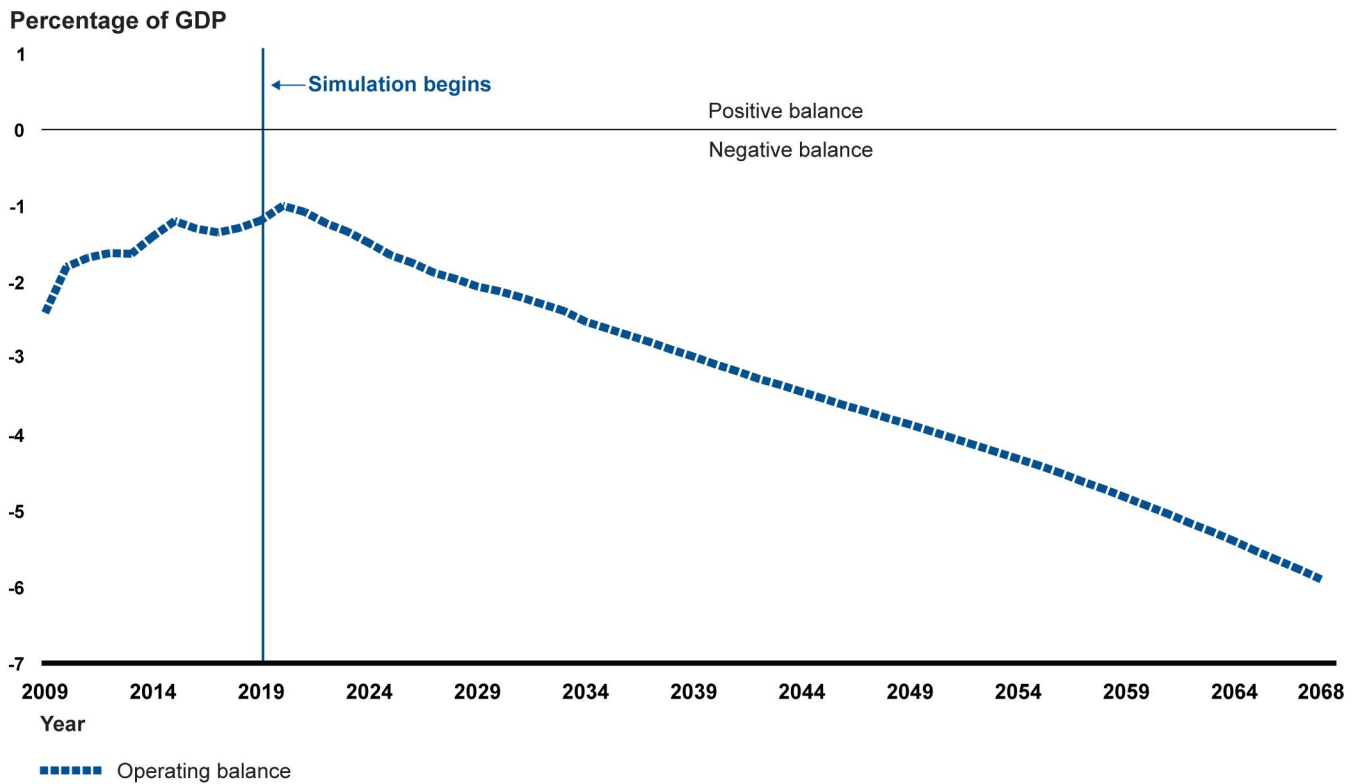
³See appendix I for our scope and methodology; The level of receipts and expenditures for the state and local government sector as a whole in future years is based on current and historical spending and revenue patterns. Even though we know that these governments regularly make changes in tax laws and expenditures, the model essentially holds current policies in place and analyzes the fiscal future for the sector as if those policies were maintained because it would be highly speculative to make any assumptions about future policy adjustments.

fiscal pressures they face.⁴ Expenditures and revenues are both simulated to increase as a percentage of gross domestic product (GDP)

⁴Most states have some sort of requirement to balance operating budgets. To address fiscal pressures and comply with balanced budget requirements, state and local governments may offset increased costs in one program by making cuts to other programs. However, they may have less flexibility to adjust certain types of spending. For example, state and local government employee pension benefits are often defined in state law or local ordinances or charters, and, in that sense, pension benefits for current retirees are largely protected from states' or localities' responses to fiscal pressures. On the other hand, retiree health benefits for those employees may not have the same level of legal protection. Spending on programs such as street paving may have no legal protection, but instead be an implicit commitment grounded in the public's expectations for the provision of government services. Flexibility to adjust revenues may also be constrained explicitly (e.g., caps on tax increases) or implicitly (e.g., tax increases can be politically unpopular).

during the simulation period.⁵ However, expenditures are generally expected to grow at a faster rate than revenues, resulting in a declining operating balance (see figure 1).

Figure 1: State and Local Government Sector Operating Balance as a Percentage of Gross Domestic Product (GDP), 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data table for Figure 1: State and Local Government Sector Operating Balance as a Percentage of Gross Domestic Product (GDP), 2009 through 2068

Year	Operating Balance
2009	-2.42
2010	-1.81
2011	-1.69
2012	-1.63

⁵Throughout this report we use GDP to refer to the U.S. GDP.

Year	Operating Balance
2013	-1.64
2014	-1.41
2015	-1.21
2016	-1.31
2017	-1.36
2018	-1.30
2019	-1.20
2020	-1.01
2021	-1.09
2022	-1.24
2023	-1.35
2024	-1.50
2025	-1.66
2026	-1.76
2027	-1.89
2028	-1.97
2029	-2.07
2030	-2.13
2031	-2.21
2032	-2.30
2033	-2.39
2034	-2.53
2035	-2.62
2036	-2.71
2037	-2.80
2038	-2.90
2039	-2.99
2040	-3.09
2041	-3.18
2042	-3.28
2043	-3.36
2044	-3.45
2045	-3.54
2046	-3.63
2047	-3.71
2048	-3.80
2049	-3.88

Year	Operating Balance
2050	-3.97
2051	-4.06
2052	-4.15
2053	-4.24
2054	-4.33
2055	-4.42
2056	-4.52
2057	-4.63
2058	-4.73
2059	-4.84
2060	-4.95
2061	-5.06
2062	-5.18
2063	-5.29
2064	-5.41
2065	-5.54
2066	-5.66
2067	-5.78
2068	-5.91

Fiscal Gap

An estimate of actions—such as revenue increases or expenditure reductions—that must be taken today and maintained for each year going forward to achieve fiscal balance during the simulation period.

Source: GAO. | GAO-20-269SP

One way of measuring the long-term fiscal challenges faced by the state and local government sector is through an indicator known as the “fiscal gap.”⁶ The fiscal gap is an estimate of annual changes in expenditures and in revenues our simulations suggest would be needed to maintain the operating balance equal to zero during the 50-year simulation period. The sector could close the fiscal gap through an increase in revenues, a reduction in expenditures, or a combination of the two of sufficient magnitude. Our simulations suggest that the fiscal gap is about 3.6 percent of GDP over the next 50 years.⁷

The sector will need to take actions in annually reducing its expenditures or raising revenues, to achieve fiscal balance. Assuming no change in simulated expenditures, the sector would need to take actions equivalent to increasing its total revenues by 4.2 percent each year to achieve fiscal balance. Alternatively, assuming no change in its simulated revenues, the sector would need to take actions equivalent to decreasing its noninterest expenditures by an amount equal to 3.2 percent of its total expenditures each year. Total expenditure reductions required by the sector are 20.7 percent each year, which includes interest payments on debt that are simulated to be 17.4 percent of annual spending.⁸ To eliminate the fiscal gap, the sector would most likely take actions that include a combination of expenditure reductions and revenue increases.⁹

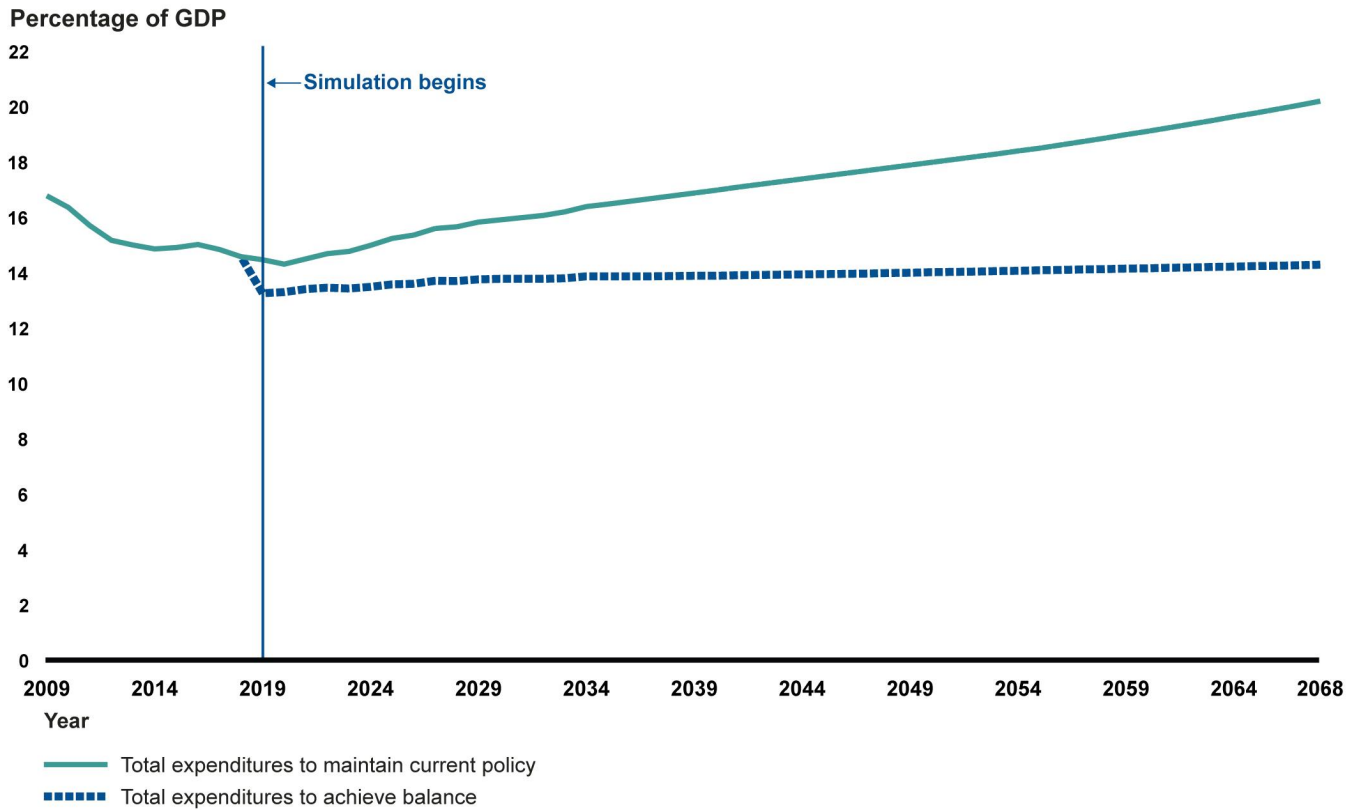
⁶The fiscal gap calculation for the state and local model simulations differs from that of the federal government, as reported in our other reports, such as *The Nation's Fiscal Health: Action Is Needed to Address the Federal Government's Fiscal Future* (GAO-19-314SP). For the state and local sector, we calculate the actions needed to achieve a fiscal balance over a 50-year simulation period (i.e., the operating balance equals zero), whereas the federal fiscal gap is a measure of the actions needed to keep federal debt as a share of GDP from rising above the current level over a 75-year period.

⁷Based on data from the Bureau of Economic Analysis (BEA), GDP totaled about \$20.6 trillion in 2018.

⁸Expenditure numbers do not add up to 20.7 due to rounding; this update of our model includes additional calculations including a revenue calculation and a distinction between total and non-interest spending reductions required to reach fiscal balance. Past updates have generally reported total spending cuts needed to attain balance.

⁹The “maintain balance” spending path shown in figure 2 is illustrative. Given the likely combination of spending and revenue actions that would be taken to achieve balance, we do not model potential economic effects. Our model assumes no economic effects from closing the state and local fiscal gap. Because abrupt spending declines or tax increases would likely have negative effects on both state and local governments, and the economy as a whole, the adjustments needed to achieve fiscal balance would likely need to be adopted gradually.

Figure 2: State and Local Expenditures (including Interest on Debt) as a Percentage of Gross Domestic Product (GDP), 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

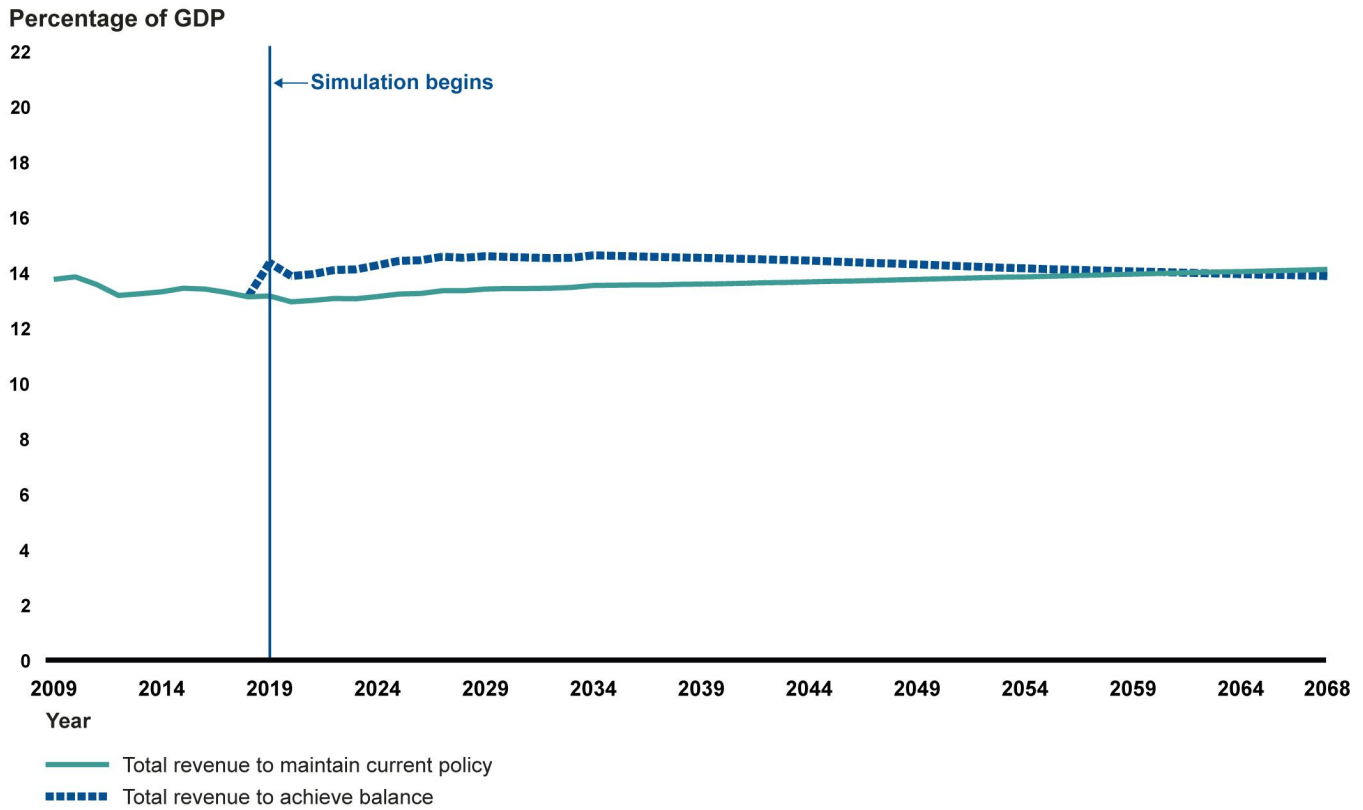
Data table for Figure 2: State and Local Expenditures (including Interest on Debt) as a Percentage of Gross Domestic Product (GDP), 2009 through 2068

Year	Total Expenditure to Maintain Current Policy	Total Expenditure to Maintain Balance
2009	16.75	16.75
2010	16.33	16.33
2011	15.67	15.67
2012	15.14	15.14
2013	14.97	14.97
2014	14.83	14.83
2015	14.88	14.88
2016	14.99	14.99
2017	14.81	14.81

Year	Total Expenditure to Maintain Current Policy	Total Expenditure to Maintain Balance
2018	14.55	14.55
2019	14.44	13.23
2020	14.28	13.27
2021	14.47	13.38
2022	14.66	13.43
2023	14.74	13.40
2024	14.96	13.46
2025	15.21	13.55
2026	15.33	13.57
2027	15.57	13.68
2028	15.63	13.67
2029	15.80	13.73
2030	15.88	13.75
2031	15.96	13.75
2032	16.04	13.75
2033	16.17	13.77
2034	16.36	13.84
2035	16.45	13.84
2036	16.55	13.84
2037	16.65	13.84
2038	16.75	13.85
2039	16.85	13.86
2040	16.95	13.86
2041	17.06	13.88
2042	17.16	13.89
2043	17.26	13.90
2044	17.36	13.91
2045	17.46	13.92
2046	17.56	13.93
2047	17.66	13.94
2048	17.76	13.96
2049	17.86	13.97
2050	17.96	13.99
2051	18.06	14.00
2052	18.16	14.01
2053	18.26	14.03

Year	Total Expenditure to Maintain Current Policy	Total Expenditure to Maintain Balance
2054	18.37	14.04
2055	18.47	14.06
2056	18.59	14.07
2057	18.71	14.09
2058	18.83	14.10
2059	18.96	14.12
2060	19.08	14.13
2061	19.21	14.15
2062	19.34	14.16
2063	19.47	14.18
2064	19.61	14.19
2065	19.74	14.21
2066	19.88	14.22
2067	20.02	14.24
2068	20.17	14.26

Figure 3: State and Local Government Revenues as a Percentage of Gross Domestic Product (GDP), 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data table for Figure 3: State and Local Government Revenues as a Percentage of Gross Domestic Product (GDP), 2009 through 2068

Year	Total Revenue to Maintain Current Policy	Total Revenue to Maintain Balance
2009	13.73	13.73
2010	13.82	13.82
2011	13.54	13.54
2012	13.15	13.15
2013	13.21	13.21
2014	13.28	13.28
2015	13.41	13.41
2016	13.38	13.38
2017	13.26	13.26

Year	Total Revenue to Maintain Current Policy	Total Revenue to Maintain Balance
2018	13.10	13.10
2019	13.13	14.33
2020	12.92	13.85
2021	12.97	13.92
2022	13.04	14.07
2023	13.03	14.09
2024	13.11	14.24
2025	13.20	14.40
2026	13.22	14.42
2027	13.32	14.55
2028	13.32	14.51
2029	13.38	14.57
2030	13.40	14.54
2031	13.40	14.52
2032	13.41	14.50
2033	13.44	14.51
2034	13.51	14.60
2035	13.52	14.58
2036	13.53	14.56
2037	13.53	14.54
2038	13.55	14.52
2039	13.56	14.51
2040	13.57	14.49
2041	13.59	14.47
2042	13.61	14.45
2043	13.62	14.43
2044	13.64	14.41
2045	13.66	14.38
2046	13.67	14.35
2047	13.69	14.32
2048	13.71	14.30
2049	13.73	14.27
2050	13.75	14.24
2051	13.77	14.21
2052	13.79	14.18
2053	13.81	14.15

Year	Total Revenue to Maintain Current Policy	Total Revenue to Maintain Balance
2054	13.82	14.13
2055	13.84	14.10
2056	13.86	14.08
2057	13.88	14.06
2058	13.90	14.04
2059	13.92	14.02
2060	13.94	14.00
2061	13.96	13.98
2062	13.98	13.96
2063	14.00	13.94
2064	14.01	13.92
2065	14.03	13.90
2066	14.05	13.89
2067	14.07	13.87
2068	14.09	13.85

Health Care Cost Growth and Other Factors Contribute to the State and Local Sector’s Fiscal Imbalance

States’ Spending on Medicaid is a Key Driver of Long-Term Expenditures

Our simulations suggest that growth in the sector’s overall expenditures is largely driven by health care expenditures. Medicaid will likely constitute a growing expenditure for state and local governments.¹⁰ In 2018, Medicaid spending was 2.9 percent of GDP compared to 0.85 percent of GDP for other kinds of health care spending such as non-Medicaid social benefit payments and employee health benefit contributions. At the end of our simulations, Medicaid is simulated to be 4.6 percent of GDP and the other kinds of health care spending are 1.3 percent of GDP. After 2029,

¹⁰Our model assumes that the amount of Medicaid expenditures per year reflects both the number of people receiving Medicaid benefits and the cost of Medicaid benefits each person receives.

Medicaid spending in our simulations is derived from Centers for Medicare & Medicaid Services' (CMS) projections. On average, Medicaid expenditures are expected to rise by 1 percentage point more than GDP each year over the simulation period. Breaking this down, Medicaid expenditures per capita are expected to increase, on average, about 0.6 percent faster than GDP per capita—referred to as excess cost growth.

Excess Cost Growth

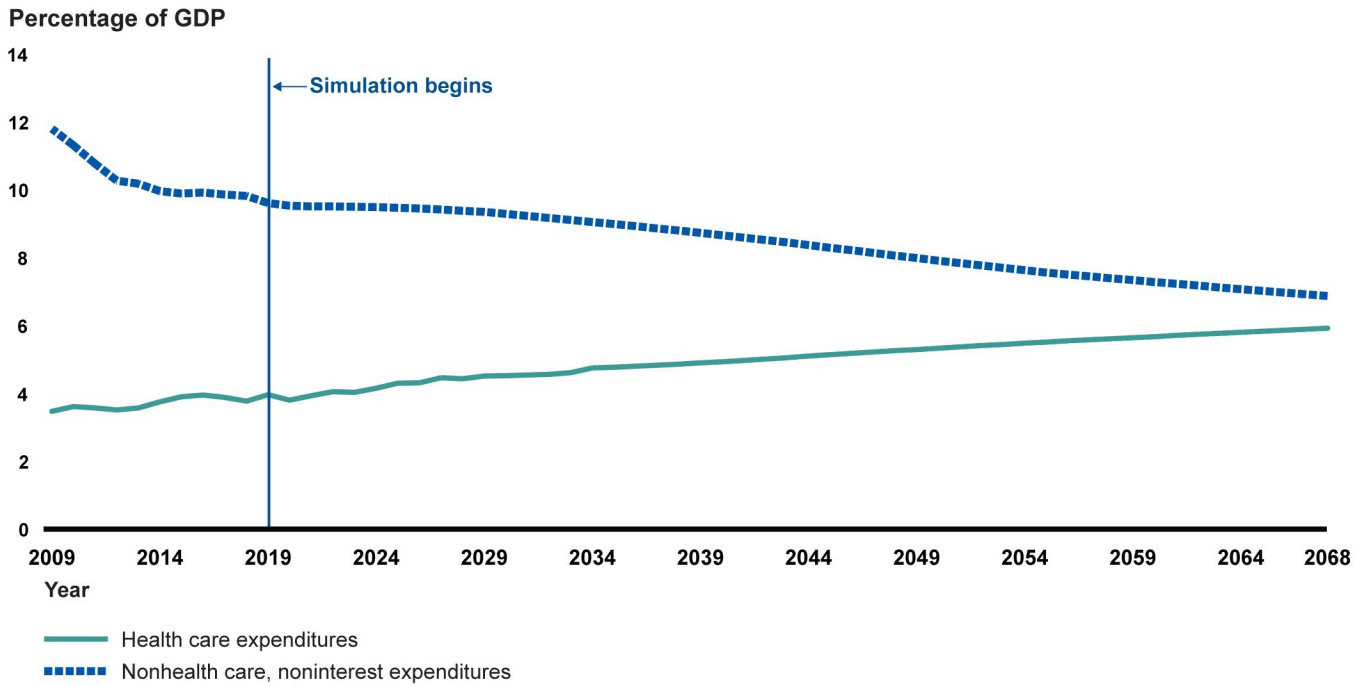
The extent to which health care costs per capita outpace gross domestic product (GDP) growth per person.

Source: GAO. | GAO-20-269SP

As shown in figure 4, health care expenditures are simulated to increase from about 3.94 percent of GDP in 2019 to 5.9 percent of GDP in 2068. In comparison, nonhealth, noninterest expenditures, which include all other operational expenditures other than debt interest payments, will decrease as a share of GDP by 2.74 percentage points over the simulation period. Per capita, national health expenditures, which make up part of the health care expenditures in the figure below, are expected to grow on average 0.8 percent faster than GDP each year during the simulation period, according to CMS.¹¹

¹¹CMS measures national health expenditures as annual health spending in the United States for types of goods or services delivered (hospital care, physician and clinical services, retail prescription drugs, etc.) for sources of funding (private health insurance, Medicare, Medicaid, out-of-pocket spending, etc.) and for businesses, households, and governments.

Figure 4: Health and Nonhealth, Noninterest Expenditures of State and Local Governments as a Percentage of Gross Domestic Product (GDP), 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data table for Figure 4: Health and Nonhealth, Noninterest Expenditures of State and Local Governments as a Percentage of Gross Domestic Product (GDP), 2009 through 2068

Year	Health care expenditures	Nonhealth care, noninterest expenditures
2009	3.45	11.78
2010	3.59	11.29
2011	3.55	10.75
2012	3.49	10.25
2013	3.55	10.16
2014	3.73	9.94
2015	3.88	9.87
2016	3.93	9.90
2017	3.86	9.84
2018	3.75	9.80
2019	3.94	9.59

Year	Health care expenditures	Nonhealth care, noninterest expenditures
2020	3.78	9.51
2021	3.91	9.49
2022	4.03	9.49
2023	4.01	9.48
2024	4.13	9.47
2025	4.28	9.45
2026	4.29	9.43
2027	4.44	9.40
2028	4.41	9.36
2029	4.49	9.33
2030	4.50	9.27
2031	4.52	9.21
2032	4.54	9.15
2033	4.59	9.09
2034	4.73	9.03
2035	4.75	8.97
2036	4.78	8.91
2037	4.81	8.84
2038	4.84	8.78
2039	4.88	8.71
2040	4.91	8.64
2041	4.95	8.57
2042	4.99	8.50
2043	5.03	8.43
2044	5.08	8.35
2045	5.12	8.27
2046	5.16	8.20
2047	5.20	8.12
2048	5.24	8.04
2049	5.27	7.97
2050	5.31	7.89
2051	5.35	7.82
2052	5.39	7.75
2053	5.42	7.68
2054	5.46	7.61
2055	5.49	7.54

Year	Health care expenditures	Nonhealth care, noninterest expenditures
2056	5.53	7.48
2057	5.56	7.43
2058	5.59	7.37
2059	5.62	7.32
2060	5.65	7.26
2061	5.69	7.21
2062	5.72	7.16
2063	5.75	7.10
2064	5.78	7.05
2065	5.81	7.00
2066	5.84	6.95
2067	5.87	6.90
2068	5.90	6.85

Note: Health expenditures include Medicaid social benefit payments, other social benefit payments for health care, and health benefits for state and local government employees and retirees. Nonhealth, noninterest expenditures include all other operational expenditures other than interest payments.

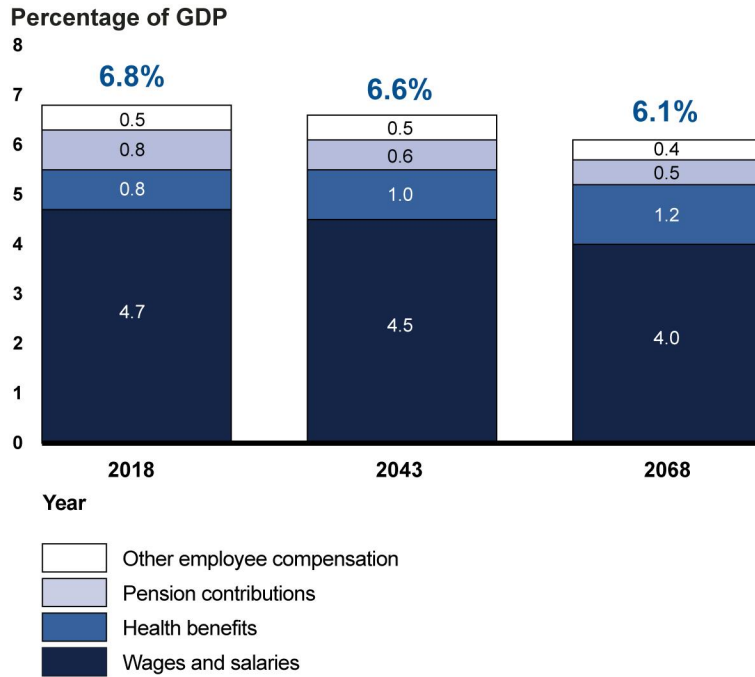
Employee Compensation Decreases as a Share of the Sector’s Expenditures during the Simulation Period

Employee compensation is the largest expenditure for the state and local government sector. It declines from 6.8 percent of GDP in 2018 to 6.1 percent of GDP in 2068. All spending components, including employee compensation, are simulated to increase in actual dollar amounts during our simulation period. Of the spending components included in employee compensation, only health benefits for employees and retirees increase as a share of employee compensation. In contrast, wages and salaries, pension contributions, and other forms of compensation decrease as a share of employee compensation (see figure 5). These percentages reflect a simulated decrease in state and local government employees’ compensation as a share of GDP.

Our simulations suggest that spending on health benefits for state and local government employees and retirees is likely to rise, on average, by 0.9 percentage points more than GDP each year. Similar to the growth in Medicaid spending, growth in spending for these health benefits is due to an increase in the simulated number of employees and retirees enrolled as well as an increase in the simulated amount of health benefits for each employee and retiree. According to our simulations, if employee and

retiree health benefits follow trends in overall national health spending, they will likely make up an increasingly larger share of total employee compensation going forward.¹²

Figure 5: State and Local Government Sector Employee Compensation as a Percentage of Gross Domestic Product (GDP), 2018 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

¹²Based on our model, the simulated number of state and local government employees grows at the same rate as U.S. population while the simulated number of retirees grows at the same rate as the weighted average of the growth rates of past general government and government enterprise employment. Health benefits for employees grow at the same rate as U.S. GDP multiplied by national health expenditures excess cost growth. Health benefits for retirees grow at the same rate as the number of retirees times U.S. GDP per capita, multiplied by national health expenditures excess cost growth.

Data table for Figure 5: State and Local Government Sector Employee Compensation as a Percentage of Gross Domestic Product (GDP), 2018 through 2068

Year	Wages and Salaries	Health Benefits	Pension Contributions	Other Employee Compensations
2018	4.7	0.8	0.8	0.5
2043	4.5	1.0	0.6	0.5
2068	4.0	1.2	0.5	0.4

Note: State and local government spending on employee compensation includes compensation for general government employees only. Health benefits include health benefits for both active employees and for retirees. Other employee compensation includes benefits, such as life insurance and workers compensation contributions.

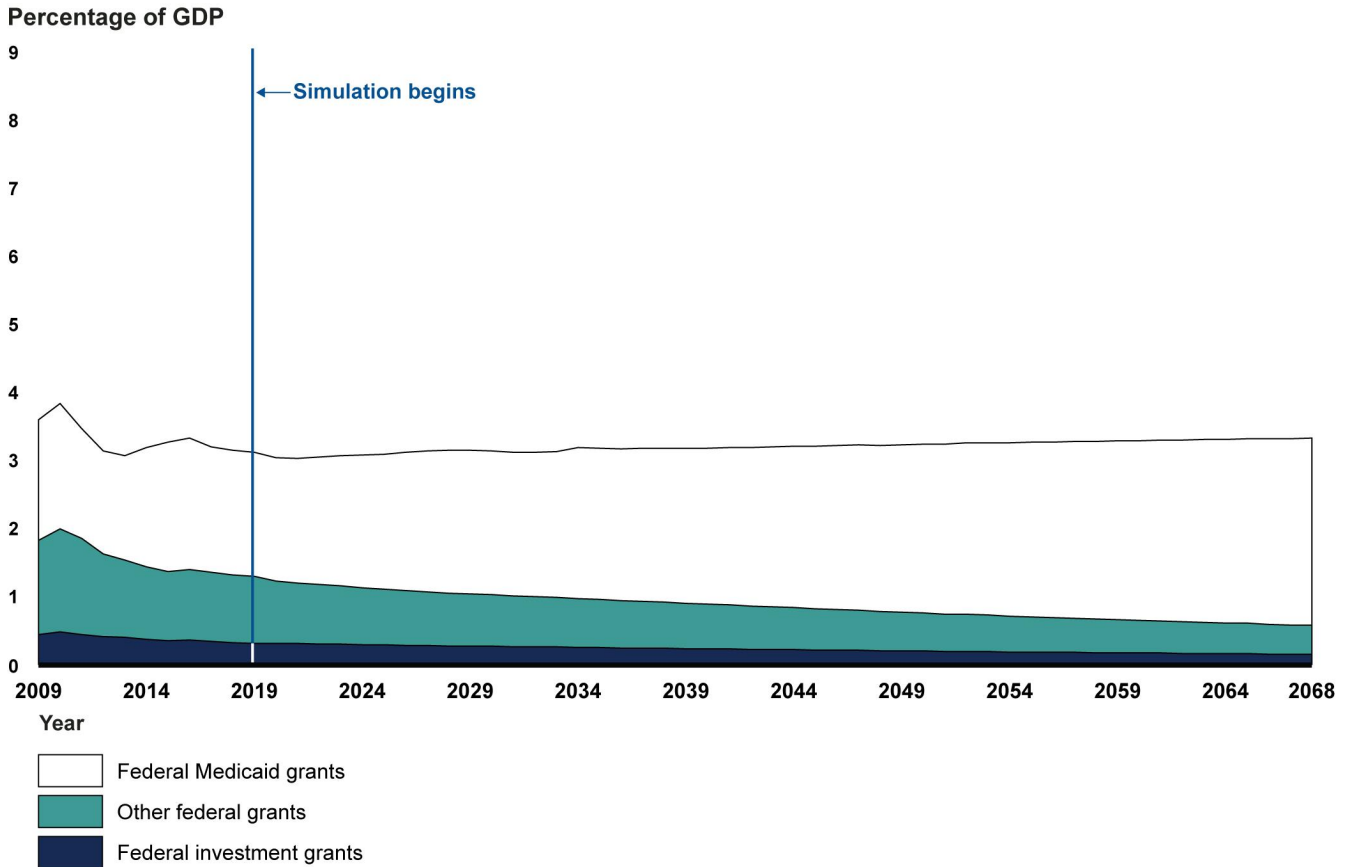
Our simulations suggest that annual contributions to state and local government employee pension plans will need to remain at their historical 10-year average of 12.9 percent of wages and salaries for state and local governments to meet their long-term pension obligations.¹³ Prior to the last decade, from 1999 to 2008 the state and local government sector averaged about an 8 percent contribution rate, which was lower than what our current simulations show is necessary for meeting pension obligations. State and local government contributions to employee pension plans are simulated to decline as a share of GDP, as are wages and salaries of state and local government employees.

Growth in Federal Medicaid Grants Drives Revenues

Our simulations suggest that federal grants will increase slightly as a share of GDP. The largest grant receipts are for Medicaid which will likely grow more quickly than other types of federal grants making up an increasing share of revenues in the future (see figure 6). The increase in Medicaid expenditures simulated during this period will likely put increasing pressure on both federal and state governments. As a matching formula grant program, the simulated increase in federal Medicaid grants implies an expected increase in Medicaid expenditures that will be shared by state governments. Federal investment grants (i.e., grants intended to finance capital infrastructure investments) and other federal grants unrelated to Medicaid (i.e., grants intended to finance education, social services, housing, and community investment) are simulated to decline as a share of GDP.

¹³Our model predicts future growth in the number of state and local government employees and retirees based on U.S. population growth and the growth rate of past government employees.

Figure 6: Federal Grants to State and Local Governments as a Percentage of Gross Domestic Product (GDP), 2009 through 2068.



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data table for Figure 6: Federal Grants to State and Local Governments as a Percentage of Gross Domestic Product (GDP), 2009 through 2068.

Year	Federal Medicaid Grants	Other Federal Grants	Federal Investment Grants
2009	1.78	1.39	0.44
2010	1.85	1.52	0.48
2011	1.62	1.42	0.44
2012	1.52	1.22	0.41
2013	1.54	1.14	0.40
2014	1.76	1.07	0.37
2015	1.91	1.02	0.35
2016	1.94	1.04	0.36

Letter

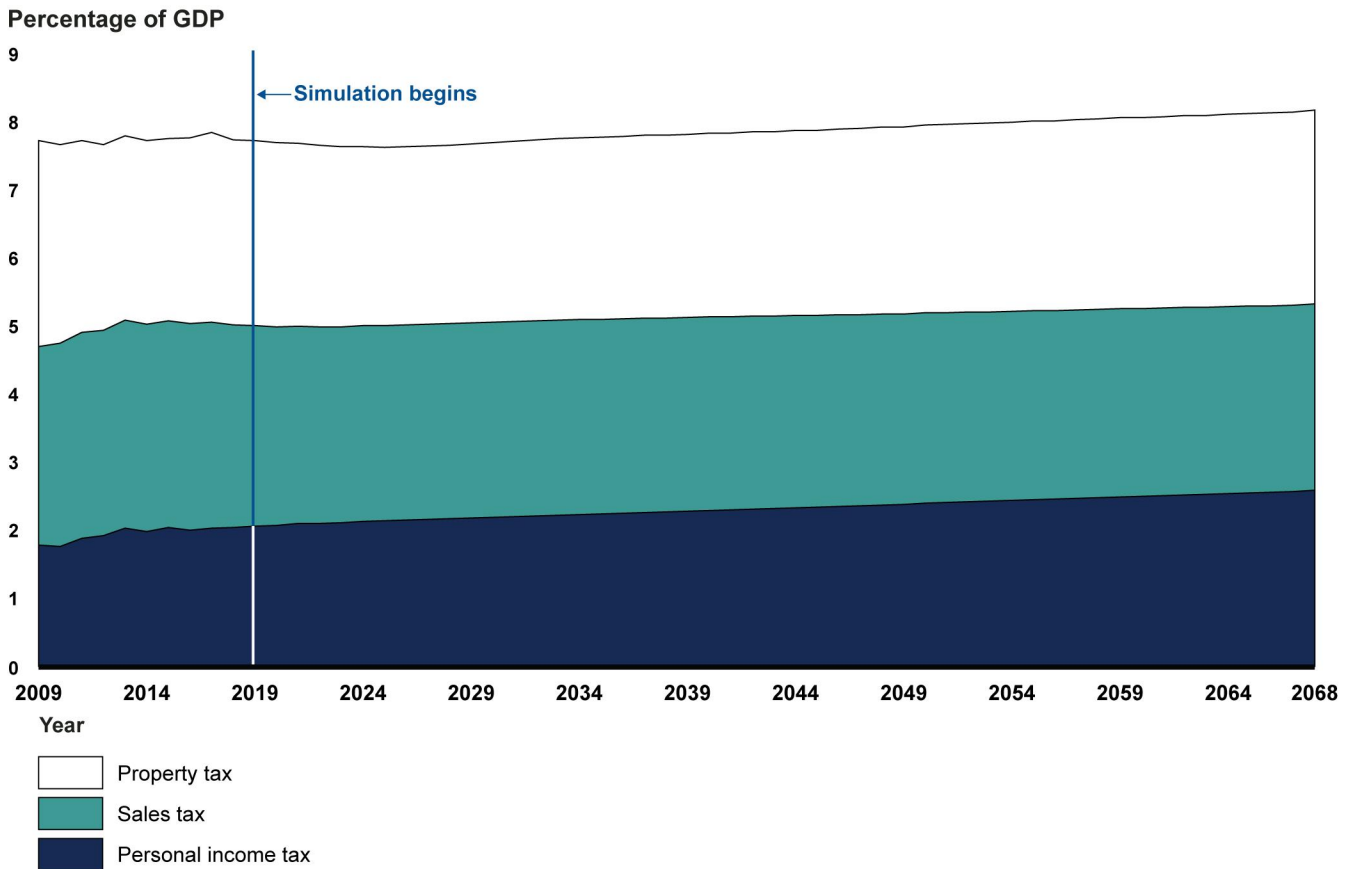
Year	Federal Medicaid Grants	Other Federal Grants	Federal Investment Grants
2017	1.85	1.02	0.34
2018	1.84	1.00	0.32
2019	1.83	0.99	0.31
2020	1.82	0.92	0.31
2021	1.84	0.89	0.31
2022	1.88	0.88	0.30
2023	1.92	0.86	0.30
2024	1.96	0.84	0.29
2025	1.99	0.82	0.29
2026	2.04	0.81	0.28
2027	2.08	0.79	0.28
2028	2.11	0.78	0.27
2029	2.12	0.77	0.27
2030	2.12	0.76	0.27
2031	2.12	0.75	0.26
2032	2.13	0.74	0.26
2033	2.15	0.73	0.26
2034	2.23	0.72	0.25
2035	2.23	0.71	0.25
2036	2.24	0.70	0.24
2037	2.26	0.69	0.24
2038	2.27	0.68	0.24
2039	2.29	0.67	0.23
2040	2.30	0.66	0.23
2041	2.32	0.65	0.23
2042	2.34	0.64	0.22
2043	2.36	0.63	0.22
2044	2.38	0.62	0.22
2045	2.40	0.61	0.21
2046	2.42	0.60	0.21
2047	2.44	0.59	0.21
2048	2.45	0.58	0.20
2049	2.47	0.57	0.20
2050	2.49	0.56	0.20
2051	2.51	0.55	0.19
2052	2.53	0.55	0.19
2053	2.54	0.54	0.19

Year	Federal Medicaid Grants	Other Federal Grants	Federal Investment Grants
2054	2.56	0.53	0.18
2055	2.58	0.52	0.18
2056	2.59	0.51	0.18
2057	2.61	0.50	0.18
2058	2.62	0.50	0.17
2059	2.64	0.49	0.17
2060	2.65	0.48	0.17
2061	2.67	0.47	0.17
2062	2.68	0.47	0.16
2063	2.70	0.46	0.16
2064	2.71	0.45	0.16
2065	2.72	0.45	0.16
2066	2.74	0.44	0.15
2067	2.75	0.43	0.15
2068	2.76	0.43	0.15

Note: Federal investment grants include grants that are intended to finance capital infrastructure investments. Other federal grants include grants that are not for Medicaid or investments, such as grants for housing, education, and social services.

Further, our simulations suggest that if historical relationships between state and local governments' tax revenues and tax bases persist, total tax revenues for the state and local government sector will increase from 8.7 percent of GDP in 2019 to 9.1 percent of GDP by the end of the simulation period. As shown in figure 7, the different components of total tax revenues are simulated to remain fairly consistent or slightly increase. The simulations suggest that personal income tax revenues will increase as a share of GDP by about 0.5 percentage points during the simulation period. Sales tax is expected to decrease by approximately 0.2 percentage points and property taxes are simulated to slightly increase as a share of GDP through 2068 from 2.73 percent to 2.86 percent.

Figure 7: State and Local Government Tax Revenues as a Percentage of Gross Domestic Product (GDP), 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Note: Sales tax revenue is the sum of general sales tax revenue and excise tax revenue.

Data Table for Figure 7: State and Local Government Tax Revenues as a Percentage of Gross Domestic Product (GDP), 2009 through 2068

Year	Sales Tax	Property Tax	Personal Income Tax
2009	2.93	3.04	1.79
2010	3.00	2.93	1.77
2011	3.04	2.83	1.89
2012	3.03	2.74	1.93
2013	3.07	2.72	2.04
2014	3.06	2.71	1.99
2015	3.05	2.69	2.05

Year	Sales Tax	Property Tax	Personal Income Tax
2016	3.05	2.74	2.01
2017	3.04	2.80	2.04
2018	2.99	2.73	2.05
2019	2.96	2.73	2.07
2020	2.93	2.72	2.08
2021	2.91	2.70	2.11
2022	2.90	2.68	2.11
2023	2.89	2.66	2.12
2024	2.89	2.64	2.14
2025	2.88	2.63	2.15
2026	2.88	2.63	2.16
2027	2.88	2.63	2.17
2028	2.88	2.63	2.18
2029	2.88	2.64	2.19
2030	2.88	2.65	2.20
2031	2.88	2.66	2.21
2032	2.88	2.67	2.22
2033	2.88	2.68	2.23
2034	2.88	2.68	2.24
2035	2.87	2.69	2.25
2036	2.87	2.69	2.26
2037	2.87	2.70	2.27
2038	2.86	2.70	2.28
2039	2.86	2.70	2.29
2040	2.86	2.71	2.30
2041	2.85	2.71	2.31
2042	2.85	2.72	2.32
2043	2.84	2.72	2.33
2044	2.84	2.73	2.34
2045	2.83	2.73	2.35
2046	2.83	2.74	2.36
2047	2.82	2.75	2.37
2048	2.82	2.76	2.38
2049	2.81	2.76	2.39
2050	2.81	2.77	2.41
2051	2.80	2.78	2.42
2052	2.80	2.78	2.43

Year	Sales Tax	Property Tax	Personal Income Tax
2053	2.79	2.79	2.44
2054	2.79	2.79	2.45
2055	2.79	2.80	2.46
2056	2.78	2.80	2.47
2057	2.78	2.81	2.48
2058	2.78	2.81	2.49
2059	2.78	2.82	2.50
2060	2.77	2.82	2.51
2061	2.77	2.82	2.52
2062	2.77	2.83	2.53
2063	2.76	2.83	2.54
2064	2.76	2.84	2.55
2065	2.76	2.84	2.56
2066	2.75	2.85	2.57
2067	2.75	2.85	2.58
2068	2.75	2.86	2.60

Economic Growth and Other Factors Could Affect the Sector’s Fiscal Outlook

Several factors, or key model variables, could affect the state and local government sector’s long-term fiscal outlook, including economic growth, health care excess cost growth, and the rate of return on pension assets. To see how the outlook changes in response to them, we developed sensitivity analyses—simulations that use alternative assumptions about their growth. For each of these key variables we use a baseline assumption, a higher-than-baseline assumption, and a lower-than-baseline assumption. We determined that these alternative assumptions highlighted the operating balance’s sensitivity to changes, shifting the future fiscal outcomes for the sector.¹⁴

Sensitivity Analysis

An analysis using alternative assumptions of one variable to determine the uncertainty, or sensitivity, of another variable.

Source: GAO. | GAO-20-269SP

Economic Growth

Future trends in GDP growth could affect the state and local government sector’s fiscal outlook. In our simulations, GDP growth is based on the

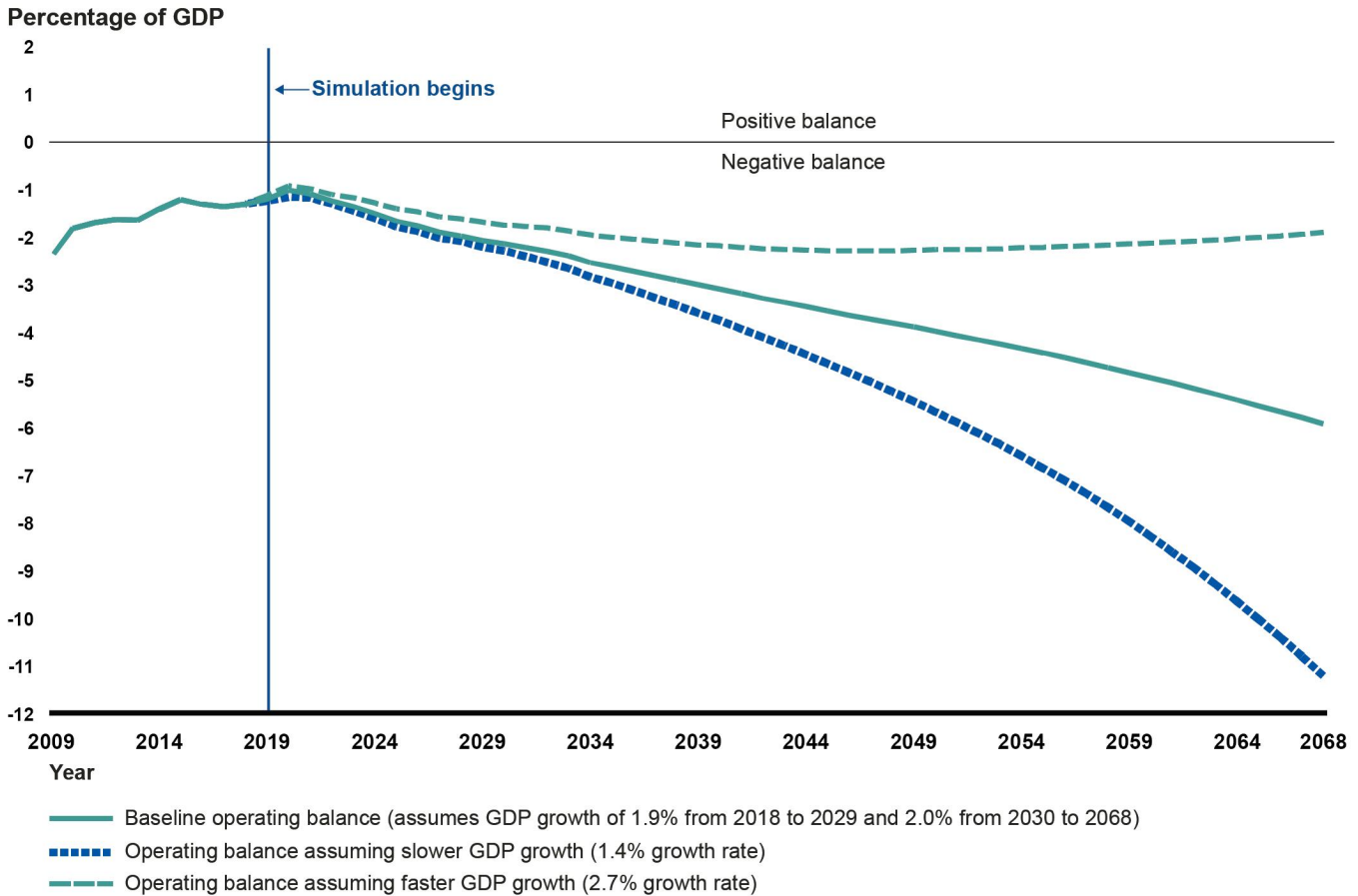
¹⁴For additional information on these simulations, see appendix I.

most recent data from the Congressional Budget Office (CBO) and the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds (OASDI Trustees) which project real GDP (adjusted for inflation) to grow by 1.9 percent per year on average from 2018 through 2029, and by 2 percent per year on average after 2029.¹⁵ Using these projections, our simulations suggest that maintaining current policies would cause the sector's operating balance to become increasingly negative. Using the OASDI Trustees' alternative assumptions of real GDP growth at a faster rate—2.7 percent—suggests that the operating balance, while remaining negative, would have an improved outlook compared to the baseline.

While growth in revenue and health care spending is largely tied to GDP in our simulations, spending for other components is tied to inflation and population growth and grows more slowly than GDP. As such, increases in GDP growth improve the sector's outlook. Our simulations, using the OASDI Trustees' alternative assumptions also show that if GDP were to grow at a slower rate—1.4 percent—the difference between revenues and expenditures would expand, resulting in an increasingly negative operating balance (see figure 8).

¹⁵Real GDP is a measure of the value of all goods and services produced in the economy in a given year, adjusted for changes in the price level.

Figure 8: State and Local Government Sector Operating Balance under Alternative Gross Domestic Product (GDP) Growth Paths, 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data Table for Figure 8: State and Local Government Sector Operating Balance under Alternative Gross Domestic Product (GDP) Growth Paths, 2009 through 2068

Year	Baseline Operating Balance	Operating Balance - slower real GDP growth	Operating Balance - Faster real GDP growth
2009	-2.42	-2.42	-2.42
2010	-1.81	-1.81	-1.81
2011	-1.69	-1.69	-1.69
2012	-1.63	-1.63	-1.63
2013	-1.64	-1.64	-1.64
2014	-1.41	-1.41	-1.41

Year	Baseline Operating Balance	Operating Balance - slower real GDP growth	Operating Balance - Faster real GDP growth
2015	-1.21	-1.21	-1.21
2016	-1.31	-1.31	-1.31
2017	-1.36	-1.36	-1.36
2018	-1.30	-1.30	-1.30
2019	-1.20	-1.24	-1.12
2020	-1.01	-1.15	-0.92
2021	-1.09	-1.17	-0.98
2022	-1.24	-1.29	-1.10
2023	-1.35	-1.44	-1.17
2024	-1.50	-1.60	-1.28
2025	-1.66	-1.77	-1.40
2026	-1.76	-1.87	-1.47
2027	-1.89	-2.01	-1.57
2028	-1.97	-2.08	-1.61
2029	-2.07	-2.20	-1.68
2030	-2.13	-2.28	-1.74
2031	-2.21	-2.40	-1.77
2032	-2.30	-2.52	-1.80
2033	-2.39	-2.65	-1.87
2034	-2.53	-2.83	-1.95
2035	-2.62	-2.96	-2.00
2036	-2.71	-3.11	-2.04
2037	-2.80	-3.27	-2.08
2038	-2.90	-3.42	-2.12
2039	-2.99	-3.59	-2.16
2040	-3.09	-3.74	-2.18
2041	-3.18	-3.92	-2.21
2042	-3.28	-4.10	-2.24
2043	-3.36	-4.27	-2.25
2044	-3.45	-4.46	-2.27
2045	-3.54	-4.65	-2.28
2046	-3.63	-4.84	-2.28
2047	-3.71	-5.03	-2.28
2048	-3.80	-5.24	-2.28
2049	-3.88	-5.44	-2.27
2050	-3.97	-5.66	-2.26

Year	Baseline Operating Balance	Operating Balance - slower real GDP growth	Operating Balance - Faster real GDP growth
2051	-4.06	-5.88	-2.26
2052	-4.15	-6.11	-2.25
2053	-4.24	-6.34	-2.24
2054	-4.33	-6.59	-2.22
2055	-4.42	-6.84	-2.21
2056	-4.52	-7.10	-2.19
2057	-4.63	-7.37	-2.18
2058	-4.73	-7.66	-2.16
2059	-4.84	-7.96	-2.14
2060	-4.95	-8.28	-2.12
2061	-5.06	-8.60	-2.10
2062	-5.18	-8.93	-2.08
2063	-5.29	-9.28	-2.06
2064	-5.41	-9.64	-2.03
2065	-5.54	-10.01	-2.00
2066	-5.66	-10.39	-1.97
2067	-5.78	-10.79	-1.94
2068	-5.91	-11.20	-1.90

Note: For our alternative simulations reflecting slower and faster real GDP growth, we used the OASDI Trustees' high- and low-cost projections of real GDP growth for the entire simulation period.

Excess Cost Growth

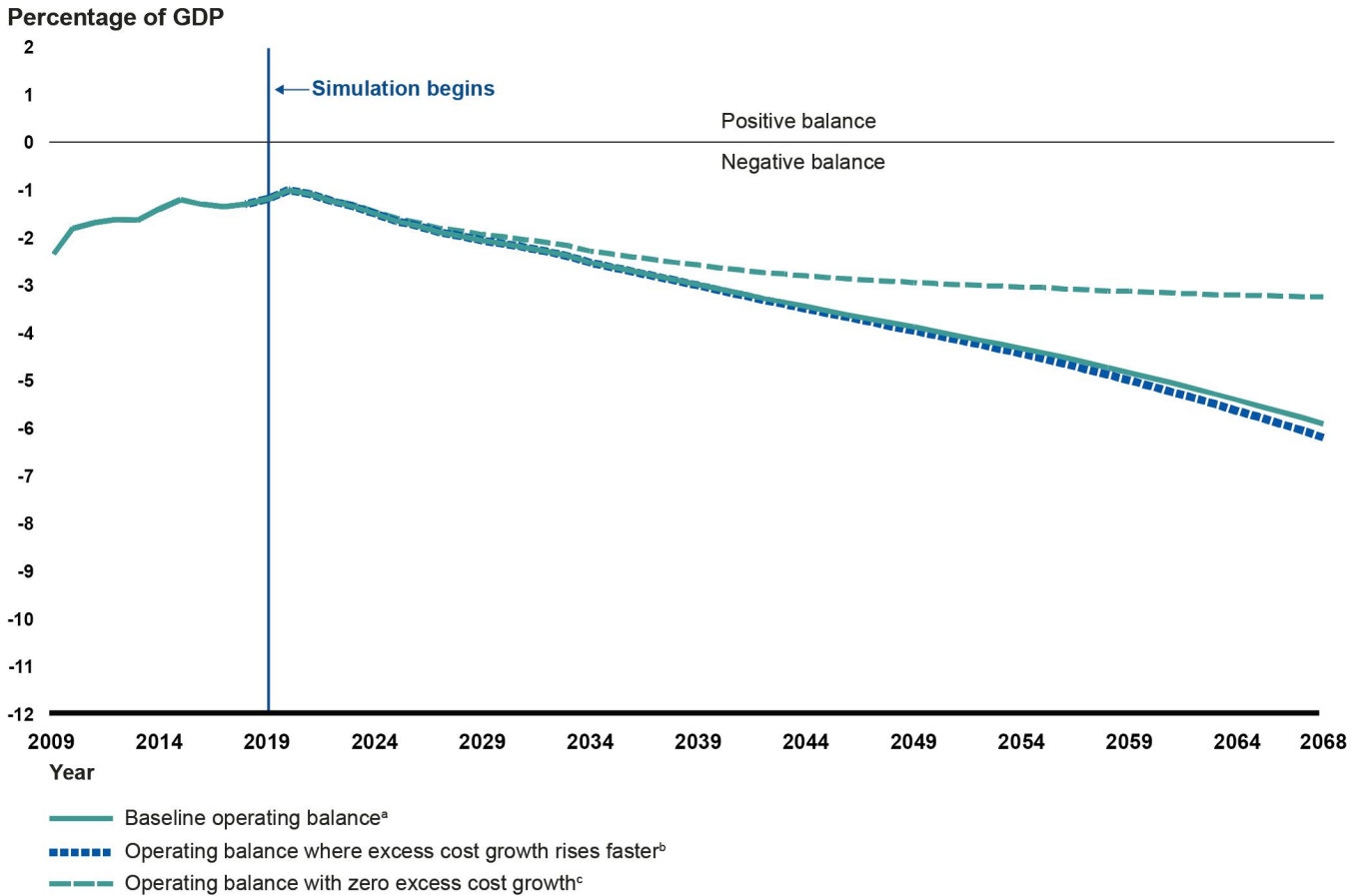
Excess cost growth in health care is another key determinant of the sector's fiscal balance. In our simulations Medicaid spending per capita grows about 1.8 percent faster than GDP per capita on average for the period from 2020 through 2029. Medicaid spending per capita grows about 0.6 percent faster on average from the period from 2030 through 2068. Other health expenditures per capita grow about 0.8 percent faster than GDP per capita for the period from 2019 through 2068. Using these projections, our simulations suggest that maintaining current policies will cause the sector's expenditures to exceed its revenues and this difference will become increasingly negative during the next several decades.

The simulations developed assuming zero excess cost growth in Medicaid and national health expenditures suggest that spending would be lower as a share of GDP. The difference between revenues and expenditures would be significantly less negative than the baseline

simulations around the middle of the simulation period before stabilizing, but remain negative over the simulation period. In the scenario using the alternative projections from CMS where excess cost growth rises faster—0.6 percent on average for Medicaid for the period from 2030 through 2068 and 0.9 percent for national health expenditures for the period between 2019 through 2068—our simulations show that the difference between revenues and expenditures would persist for the remainder of the simulation period (see figure 9).¹⁶

¹⁶We use CBO's projections of federal spending on Medicaid, the Children's Health Insurance Program (CHIP), and exchange subsidies as a fraction of GDP to simulate variables related to Medicaid. This projection incorporates excess cost growth for the period from 2019 through 2029 but assumes zero excess cost growth starting in 2030. Thus, we could only use alternative projections of Medicaid excess cost growth for 2030 and later.

Figure 9: State and Local Government Sector Operating Balance under Alternative Health Care Excess Cost Growth Paths, 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data table for Figure 9: State and Local Government Sector Operating Balance under Alternative Health Care Excess Cost Growth Paths, 2009 through 2068

Year	Baseline Operating Balance	Operating Balance- Faster Excess Health Care Cost Growth	Operating Balance- No Excess Health Care Cost Growth
2009	-2.42	-2.42	-2.42
2010	-1.81	-1.81	-1.81
2011	-1.69	-1.69	-1.69
2012	-1.63	-1.63	-1.63
2013	-1.64	-1.64	-1.64
2014	-1.41	-1.41	-1.41

Year	Baseline Operating Balance	Operating Balance- Faster Excess Health Care Cost Growth	Operating Balance- No Excess Health Care Cost Growth
2015	-1.21	-1.21	-1.21
2016	-1.31	-1.31	-1.31
2017	-1.36	-1.36	-1.36
2018	-1.30	-1.30	-1.30
2019	-1.20	-1.20	-1.22
2020	-1.01	-1.01	-1.01
2021	-1.09	-1.09	-1.09
2022	-1.24	-1.24	-1.22
2023	-1.35	-1.35	-1.31
2024	-1.50	-1.50	-1.46
2025	-1.66	-1.66	-1.60
2026	-1.76	-1.76	-1.69
2027	-1.89	-1.89	-1.81
2028	-1.97	-1.97	-1.86
2029	-2.07	-2.07	-1.94
2030	-2.13	-2.13	-1.99
2031	-2.21	-2.21	-2.05
2032	-2.30	-2.30	-2.11
2033	-2.39	-2.40	-2.18
2034	-2.53	-2.53	-2.29
2035	-2.62	-2.63	-2.35
2036	-2.71	-2.72	-2.41
2037	-2.80	-2.82	-2.47
2038	-2.90	-2.91	-2.53
2039	-2.99	-3.01	-2.58
2040	-3.09	-3.11	-2.64
2041	-3.18	-3.21	-2.69
2042	-3.28	-3.31	-2.74
2043	-3.36	-3.40	-2.77
2044	-3.45	-3.50	-2.81
2045	-3.54	-3.59	-2.84
2046	-3.63	-3.68	-2.87
2047	-3.71	-3.77	-2.90
2048	-3.80	-3.87	-2.92
2049	-3.88	-3.96	-2.95
2050	-3.97	-4.05	-2.97

Year	Baseline Operating Balance	Operating Balance- Faster Excess Health Care Cost Growth	Operating Balance- No Excess Health Care Cost Growth
2051	-4.06	-4.15	-2.99
2052	-4.15	-4.24	-3.01
2053	-4.24	-4.34	-3.02
2054	-4.33	-4.44	-3.04
2055	-4.42	-4.54	-3.05
2056	-4.52	-4.65	-3.08
2057	-4.63	-4.77	-3.10
2058	-4.73	-4.88	-3.12
2059	-4.84	-5.00	-3.13
2060	-4.95	-5.12	-3.15
2061	-5.06	-5.25	-3.17
2062	-5.18	-5.37	-3.18
2063	-5.29	-5.50	-3.20
2064	-5.41	-5.64	-3.21
2065	-5.54	-5.77	-3.22
2066	-5.66	-5.91	-3.23
2067	-5.78	-6.05	-3.24
2068	-5.91	-6.20	-3.24

^aFor the baseline operating balance, Medicaid excess cost growth is 1.8 percent for 2020 to 2029 and 0.6 percent from 2030 to 2068. National health care excess cost growth is 0.8 percent for 2019 to 2068.

^bFor the operating balance where excess cost growth rises faster than baseline, Medicaid excess cost growth is assumed to be 0.6 percent from 2030 to 2068 and 0.9 percent for national health expenditures from 2019 to 2068.

^cFor the operating balance where there is no excess cost growth, we assume a zero percent increase for both Medicaid and national health care expenditure excess cost growth.

Note: For the excess cost growth sensitivity analysis we use CBO for 2019 to 2029 and CMS thereafter. For our baseline simulations, we used Medicaid cost growth derived from CMS's baseline projections for the period from 2030 through 2093. We used CMS's baseline projections of national health care excess cost growth for the entire simulation period.

For our alternative simulations reflecting higher excess cost growth, we used Medicaid cost growth derived from CMS's alternative projections for the period from 2030 through 2093, as well as CMS's alternative projections of national health expenditures excess cost growth.

For our alternative simulations reflecting lower excess cost growth, we assumed that Medicaid excess cost growth is zero after 2029 and that national health expenditures excess cost growth is zero for the entire simulation period.

We use CBO's projections of federal spending on Medicaid, the Children's Health Insurance Program (CHIP), and exchange subsidies as a fraction of GDP to simulate variables related to Medicaid. This projection incorporates excess cost growth for the period from 2019 through 2029 but assumes zero excess cost growth starting in 2030. Thus, we could only use alternative projections of Medicaid excess cost growth for 2030 and later.

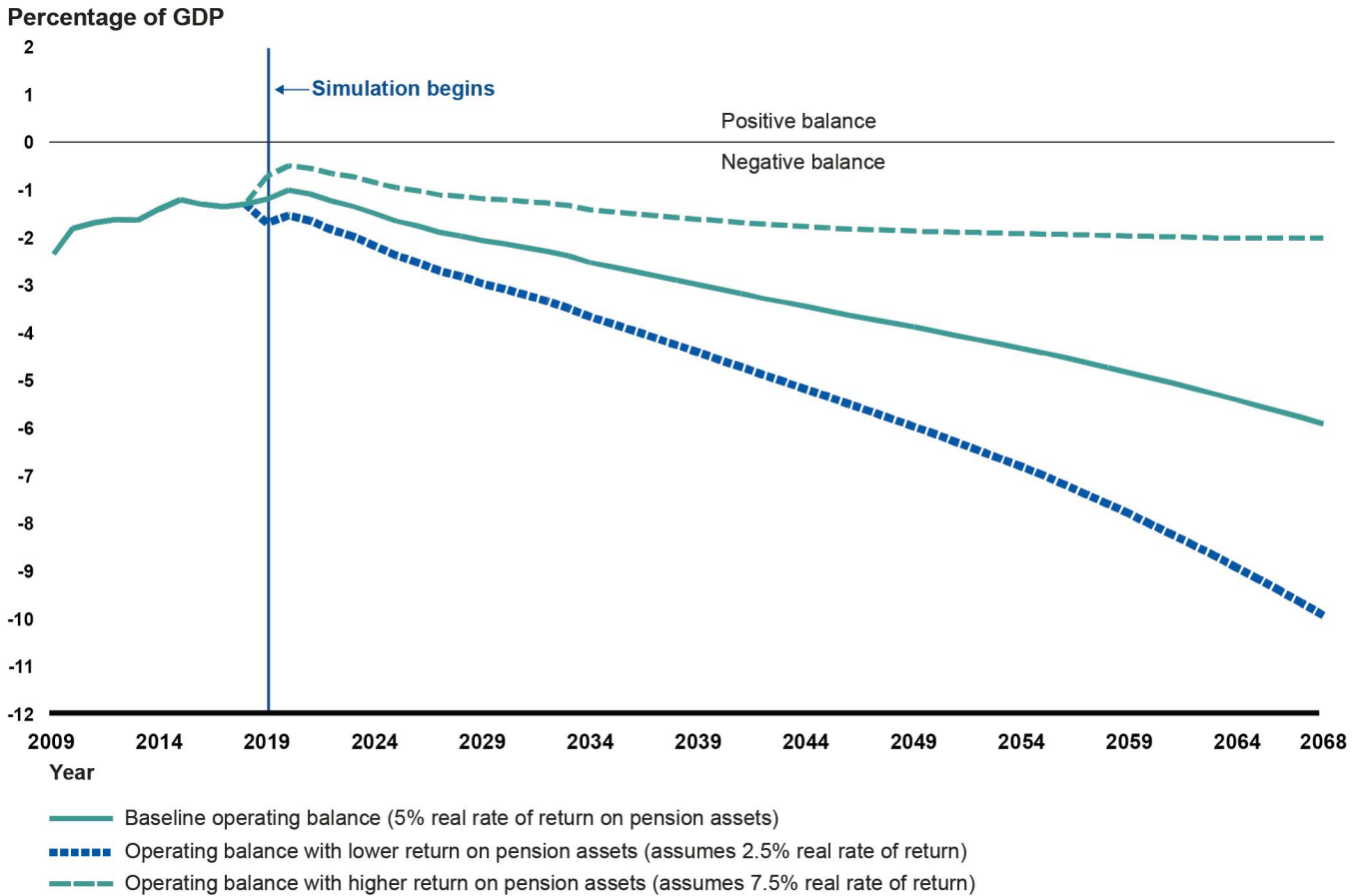
Rate of Return on Pension Assets

The rate of return on pension assets could also affect the state and local government sector's fiscal outlook. Based on an inflation-adjusted rate of return on pension assets of 5 percent, our simulations suggest that state and local governments would need to make pension contributions equivalent to about 13 percent of employees' wages and salaries to meet their long-term pension obligations. The simulations we developed using a higher rate of return—7.5 percent—suggest that pension contributions would be about 3 percent of state and local government employees' wages and salaries to meet pension obligations. Under this scenario, spending would need to be a lower share of GDP and the sector's outlook would improve. The difference between revenues and expenditures would briefly narrow early on before becoming increasingly negative through the remainder of the simulation period.

Alternatively, we estimated that if the rate of return on pension assets is relatively low—2.5 percent—required pension contributions would need to be about 24 percent of state and local government employees' wages and salaries. Under this scenario our simulations show that spending would be a higher share of GDP and the sector's outlook would worsen as the sector's negative operating balance would continue to grow larger (see figure 10).¹⁷

¹⁷We do not consider the possibility of altered benefit promises here because we treat these as policy changes, which we hold fixed throughout the model.

Figure 10: State and Local Government Sector Operating Balance under Alternative Assumptions for the Real Rate of Return on Pension Assets, 2009 through 2068



Source: GAO analysis of data from the Agency for Healthcare Research and Quality, Bloomberg, Board of Governors of the Federal Reserve System, Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Centers for Medicare & Medicaid Services, Congressional Budget Office, and the Social Security Administration. | GAO-20-269SP

Data Table for Figure 10: State and Local Government Sector Operating Balance under Alternative Assumptions for the Real Rate of Return on Pension Assets, 2009 through 2068

Year	Baseline Operating Balance	Operating Balance - Real Rate of Return on Pension Assets (2.5%)	Operating Balance - Real Rate of Return on Pension Assets (7.5%)
2009	-2.42	-2.42	-2.42
2010	-1.81	-1.81	-1.81
2011	-1.69	-1.69	-1.69
2012	-1.63	-1.63	-1.63
2013	-1.64	-1.64	-1.64
2014	-1.41	-1.41	-1.41

Year	Baseline Operating Balance	Operating Balance - Real Rate of Return on Pension Assets (2.5%)	Operating Balance - Real Rate of Return on Pension Assets (7.5%)
2015	-1.21	-1.21	-1.21
2016	-1.31	-1.31	-1.31
2017	-1.36	-1.36	-1.36
2018	-1.30	-1.30	-1.30
2019	-1.20	-1.70	-0.72
2020	-1.01	-1.54	-0.50
2021	-1.09	-1.65	-0.55
2022	-1.24	-1.84	-0.66
2023	-1.35	-1.98	-0.73
2024	-1.50	-2.18	-0.85
2025	-1.66	-2.38	-0.96
2026	-1.76	-2.53	-1.02
2027	-1.89	-2.70	-1.11
2028	-1.97	-2.82	-1.14
2029	-2.07	-2.97	-1.19
2030	-2.13	-3.08	-1.21
2031	-2.21	-3.21	-1.25
2032	-2.30	-3.34	-1.28
2033	-2.39	-3.49	-1.33
2034	-2.53	-3.67	-1.42
2035	-2.62	-3.81	-1.46
2036	-2.71	-3.96	-1.50
2037	-2.80	-4.11	-1.54
2038	-2.90	-4.26	-1.58
2039	-2.99	-4.41	-1.62
2040	-3.09	-4.57	-1.65
2041	-3.18	-4.72	-1.69
2042	-3.28	-4.88	-1.72
2043	-3.36	-5.03	-1.75
2044	-3.45	-5.19	-1.77
2045	-3.54	-5.34	-1.80
2046	-3.63	-5.50	-1.82
2047	-3.71	-5.65	-1.84
2048	-3.80	-5.81	-1.85
2049	-3.88	-5.97	-1.87
2050	-3.97	-6.13	-1.88

Year	Baseline Operating Balance	Operating Balance - Real Rate of Return on Pension Assets (2.5%)	Operating Balance - Real Rate of Return on Pension Assets (7.5%)
2051	-4.06	-6.30	-1.89
2052	-4.15	-6.47	-1.90
2053	-4.24	-6.64	-1.91
2054	-4.33	-6.81	-1.92
2055	-4.42	-6.99	-1.93
2056	-4.52	-7.19	-1.94
2057	-4.63	-7.39	-1.95
2058	-4.73	-7.59	-1.96
2059	-4.84	-7.80	-1.97
2060	-4.95	-8.02	-1.98
2061	-5.06	-8.24	-1.99
2062	-5.18	-8.46	-2.00
2063	-5.29	-8.69	-2.01
2064	-5.41	-8.93	-2.01
2065	-5.54	-9.17	-2.02
2066	-5.66	-9.42	-2.02
2067	-5.78	-9.67	-2.02
2068	-5.91	-9.93	-2.02

Note: For our baseline simulations, we assumed that the real rate of return on pension assets is 5 percent throughout the simulation period, consistent with our prior work. For our alternative simulations reflecting higher and lower real rates of return on pension assets, we used real rates of return of 7.5 percent and 2.5 percent.

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Appendix I: Objectives, Scope, and Methodology

Data

This update of the state and local government fiscal model used aggregate data on the state and local government sector and national data on other variables from the following sources: the Agency for Healthcare Research and Quality, Bloomberg, the Board of Governors of the Federal Reserve System, the Board of Trustees of the Federal Old-Age, Survivors, and Disability Insurance Program (OASDI Trustees), BEA, the Bureau of Labor Statistics, the Census Bureau, the Centers for Medicare & Medicaid Services (CMS), the Congressional Budget Office (CBO), and the Social Security Administration. These data sources are generally the same data sources we used for our prior update. We used annual observations on historical data through 2018 where available.

Objectives and Methodology

This report updates GAO's state and local fiscal model to simulate the fiscal outlook for the state and local government sector. This includes identifying the factors that are likely to contribute to the state and local sector's fiscal imbalance. The level of receipts and expenditures for the state and local government sector as a whole in future years is based on current and historical spending and revenue patterns. We used Table 3.3 of the National Income and Product Accounts (NIPA)—State and Local Government Current Receipts and Expenditures—prepared by BEA as an organizing framework for developing our model, and we simulated state and local government receipts and expenditures using methods similar to those we have used in prior updates. Our simulations of real U.S. gross domestic product (GDP) were consistent with the growth path developed by CBO for the period from 2019 through 2029 and by the OASDI Trustees for the period thereafter. Our simulations of U.S. population was consistent with the growth path developed by the OASDI Trustees, and our simulations of excess cost growth for national health expenditures and for Medicaid were consistent with CMS projections, all for the entire simulation period. Our simulations of other variables, such as the GDP price index, personal income, and 3-month U.S. Department of the Treasury (Treasury) rates, were consistent with the growth paths for

these variables developed by CBO for as much of the simulation period as possible. Otherwise, we developed our own assumptions about the likely future growth path of the variables in our model. In general, we assumed that current policies remain in place and that all levels of government continue to provide services at current per capita levels. A detailed description of the model is in appendix I of GAO, *State and Local Governments' Fiscal Outlook: 2018 Update*, [GAO-19-208SP](#) (Washington, D.C.: December 2018).¹ We describe below where we updated equations or added equations to the model. Otherwise our approach is the same as the approach we used in that update.

State and Local Government Sector Receipts

We simulated the future growth paths of the following types of state and local government revenues: current tax receipts, contributions to government social insurance, income on financial assets, current transfer receipts, the surplus from government enterprises, and capital transfer receipts. We also simulated the future growth path of state and local government long-term debt issuance. We updated some of the equations we used to simulate tax receipts(see table 1). We also added equations to simulate current transfers from the rest of the world to state and local governments, disaster-related insurance benefits to state and local governments, and other capital transfers to state and local governments, which we had not included in prior updates. The equations we used to simulate the other types of receipts are the same as the equations we used in [GAO-19-208SP](#).

Table 1: Updated Estimates of Long-Run Historical Relationships

	Prior update	Current update
Estimated elasticity of real personal consumption expenditures less food and services with respect to real wages and salaries	0.93 (0.02)	0.94 (0.02)
Estimated elasticity of the real U.S. market value of real estate with respect to real U.S. GDP	1.07 (0.04)	1.10 (0.04)
Estimated percentage point change in effective interest rates on financial assets associated with 1 percentage point change in 3-month Treasury rates	0.78 (0.06)	0.77 (0.06)
Estimated percentage point change in state and local government bond yields associated with a 1 percentage point change in 10-year Treasury rates	0.65 (0.04)	0.65 (0.04)

¹A complete listing of our past products is shown at the end of this report.

	Prior update	Current update
Estimated percentage point change in effective interest rates on long- term state and local government debt and federal government loans associated with a 1 percentage point change in state and local government bond yields	0.93 (0.21)	0.71 (0.25)
Estimated elasticity of real state personal income tax revenue with respect to real taxable personal income	1.27 (0.08)	1.24 (0.08)
Estimated elasticity of real state and local government excise tax revenue with respect to real wages and salaries	0.91 (0.07)	0.92 (0.07)
Estimated percentage point change in long term debt issuance as a share of gross investment and non-produced asset purchases in excess of federal investment grants associated with a 1 percentage point change in state and local government bond yield growth	-13.58 (15.16)	-14.84 (15.20)
Estimated percentage point change in real federal government lending to state and local governments associated with a 1 percentage point change in real U.S. GDP	1.70 (1.44)	1.70 (1.43)

Source: GAO. | GAO-20-269SP

Note: Standard errors of estimates are in parentheses.

State and Local Government Sector Expenditures and Social Insurance Fund Balance

We simulated the future growth paths of the following types of state and local government expenditures: consumption expenditures, current transfer payments, interest paid on outstanding state and local government debt, subsidies, capital outlays, and consumption of fixed assets (depreciation). We also simulated the future growth path of the state and local government sector’s net social insurance fund balance. We updated some of the equations we used to simulate the interest paid on outstanding state and local government debt (see table 1 above). We also added equations to simulate current transfer payments to the rest of the world, which we had not included in prior updates. Otherwise, the approach we used to simulate expenditures is the same as the approach we used in [GAO-19-208SP](#).

State and Local Government Sector Fiscal Balance

Our main indicator of the sector’s fiscal balance is its operating balance net of funds for capital expenditures (henceforth, operating balance), which is a measure of the sector’s ability to cover its current expenditures out of current receipts. Operating balance is defined as total receipts minus (1) capital outlays not financed by long-term debt issuance, (2) current expenditures less depreciation, (3) current surplus of state and local government enterprises, and (4) net social insurance fund balance.

We also estimated the annual changes in spending and in receipts that our simulations suggest would be needed to maintain the operating balance equal to zero during the 50-year simulation period, which we refer to as the “fiscal gap.” As discussed above, our baseline simulations assume that current policies remain in place and that all levels of government continue to provide services at current per capita levels. We then simulated the change in total expenditures needed to maintain the operating balance equal to zero. To estimate the annual change in spending needed to maintain balance we calculated the present value of that change as a percentage of the present value of baseline total expenditures and as a percentage of the present value of U.S. GDP, all for a 50-year period. We also calculated the interest and non-interest expenditure components of the change in total expenditures needed to maintain balance. We used a similar approach to estimate the annual change in total receipts needed to maintain balance.

Sensitivity Analysis

We assessed the sensitivity of our baseline results to alternative projections of real U.S. GDP growth, health care excess cost growth, and the real rate of return on state and local government pension fund assets. Following the same approach we used in [GAO-19-208SP](#), for each of these variables, we selected an alternative projection associated with faster growth or rate of return and one associated with slower growth or rate of return.

- Real U.S. GDP. For our baseline simulations, we used CBO projections of real GDP for the period from 2019 through 2029 and the OASDI Trustees’ intermediate projections of real U.S. GDP growth for the years thereafter. For our sensitivity analysis, we used the OASDI Trustees’ high-cost and low-cost projections.
- Health care excess cost growth. For our baseline simulations, we used CMS’s baseline projection of national health expenditures excess cost growth and we estimated Medicaid excess cost growth based on CMS’s baseline projections. For our sensitivity analysis, we used CMS’s alternative projection of national health expenditures excess cost growth and we estimated Medicaid excess cost growth based on CMS’s alternative projections. As another alternative, we simulated the model assuming both zero excess cost growth for national health expenditures and Medicaid. Our simulations used CBO’s projection of federal spending on Medicaid, CHIP, and exchange subsidies as a fraction of GDP to simulate certain variables related to state and local government spending on Medicaid and other

health spending. This projection incorporates excess cost growth for the period from 2019 through 2029 but assumes zero excess cost growth starting in 2030, so we could only vary Medicaid excess cost growth in the alternative simulations for 2030 and later.

- Real rate of return on state and local government pension assets. For our baseline simulations, we assumed a 5 percent real rate of return on state and local government pension assets. For our sensitivity analysis, we used 2.5 percent and 7.5 percent.

Table 2 shows the growth rates or rates of return associated with the baseline and alternative projections of each variable for the simulation period.

Table 2: Baseline and Alternative Growth Rates and Rates of Return for Key Exogenous Variables (percentage)

	Annualized Real U.S. GDP Growth, 2018 through 2068	Average Annual National Health Expenditures Excess Cost Growth, 2019 through 2068	Average Annual Medicaid Excess Cost Growth, 2030 through 2068	Real Rate of Return on State and Local Government Pension Fund Assets
Baseline assumption	2.00	0.79	0.57	5.00
Slower alternative	1.41	0.00	0.00	2.50
Faster alternative	2.72	0.92	0.62	7.50

Source: GAO analysis of data from the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, the Centers for Medicare & Medicaid Services, the Congressional Budget Office, and GAO. | GAO-20-269SP

We simulated the model changing either real U.S. GDP growth, health care excess cost growth, or the real rate of return on pension assets, leaving the other variables fixed at their baseline values. Thus, our sensitivity analysis is in the spirit of a partial equilibrium comparative statics analysis that sheds light on how each of the individual variables may affect the state and local government sector’s fiscal outlook. However, these variables are likely to be correlated, so future changes in one would likely be associated with changes in others.

Caveats and limitations

Our approach has a number of limitations and the results should be interpreted with caution. First, the state and local fiscal model is not designed for certain types of analyses. The simulations are not intended to provide precise predictions. Even though we know that these governments regularly make changes in tax laws and expenditures, the model essentially holds current policies in place and analyzes the fiscal future for the sector as if those policies were maintained because it would

be highly speculative to make any assumptions about future policy adjustments.

In addition, fiscal outcomes related to the sector's financial position and solvency may not reflect all aspects of the sector's "health." Other indicators include economic indicators that go beyond the sector's financial position to include economic growth, income, or distributional equity, as well as indicators of the quality of services provided by the sector, including education, health care, infrastructure, and other public goods and services.

Finally, our unit of analysis is the state and local government sector as a whole, so our results provide an assessment of the sector's fiscal outlook. However, individual state and local governments likely exhibit significant heterogeneity in their expenditure and revenue patterns and their fiscal outlooks will likely differ from the sector as a whole. Nevertheless, it is informative to assess the overall fiscal outlook because doing so reveals the outlook for state and local governments as a sector. In addition, aggregate data on the sector is available on a more timely basis than data for individual state and local governments, allowing for a better assessment of the sector's current fiscal outlook. Our results for the sector also provide a baseline from which to view the experiences of individual state and local governments. Finally, assessing the fiscal outlook of the sector as a whole can help mitigate the tendency to extrapolate from the most visible, but potentially not representative, experiences of individual states or localities.

Appendix II: GAO Contacts and Staff Acknowledgments

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Related GAO Products

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