# State of Ohio

## New Issue Summary

**Sale Date:** The bonds will be priced on December 7, 2022 via negotiation.

**Series:** $14.9 million General Obligation (GO) Refunding Bonds (Conservation Project), Series 2022A; $62 million GO Refunding Bonds (Common Schools), Series 2022A; $180.8 million GO Infrastructure Improvement Bonds, Series 2022A; $32.5 million GO Infrastructure Improvement Refunding Bonds, Series 2022B; $15.7 million GO Infrastructure Improvement Refunding Bonds, Series 2022C

**Purpose:** Proceeds of the series 2022A infrastructure improvement bonds will be used to pay a portion of the costs of the state's capital improvement plan and the costs of issuance. Proceeds of all other series will be used to currently refund certain maturities of various prior series of GO bonds for net present value savings and pay the costs of issuance.

**Security:** The bonds are GOs of the state backed by the full faith and credit and taxing power of the state of Ohio.

Ohio's 'AAA' long-term Issuer Default Rating (IDR) and GO bond rating reflects the state's high level of financial resilience and superior budget management. Ohio's sustained trend of balanced budgets coupled with growth in its fiscal reserves and cash support robust gap-closing capacity. The rating also factors in the state's proven ability to absorb the effects of economic cyclicality and tax policy changes, a long track record of conservative revenue forecasting, and a low long-term liability burden.

**Economic Resource Base:** Ohio's economy is large and diverse and features six distinct economic regions, three of which are grouped around the state's largest urban centers (i.e. Cleveland, Cincinnati and Columbus). Ohio's economy has continued to become more diversified, with expansion in its finance, health care, insurance and real estate sectors, but the state's manufacturing sector remains large compared to national averages. Manufacturing is concentrated in the more cyclically sensitive durable goods industries. Transportation equipment and related suppliers also have a strong presence. Fitch Ratings expects Ohio's economy to achieve steady growth limited by slow population gains.

## Key Rating Drivers

**Revenue Framework: 'aa':** Like most states, Ohio has an unlimited legal ability to raise operating revenues. Its revenue base is diverse and relies on broad-based income and sales taxes. Revenue growth has historically been slow, with state-source revenues expanding in line with, or slightly above, inflation when factoring in the effect of tax policy changes. Direct revenue effects of the tax cuts that Ohio has implemented over the past several biennia have so far been manageable, aided by favorable economic and fiscal trends.

**Expenditure Framework: 'aaa':** Ohio retains ample flexibility to cut spending throughout the economic cycle. As in most states, the natural pace of spending growth is likely to be somewhat above revenue growth, requiring ongoing budget management. Carrying costs for debt and retiree benefits are below the median for states.

**Long-Term Liability Burden: 'aaa':** Debt levels are conservatively managed and debt primarily consists of GO bonds. On a combined basis, outstanding debt and net pension obligations are below the U.S. states' median.

**Operating Performance: 'aaa':** The state generally has a careful approach to financial operations, consistently achieving budgetary balance and restoring its Budget Stabilization Fund (BSF) during the last economic expansion.

### Ratings

| | |
|---|---|
| Long Term Issuer Default Rating[a] | AAA |

### New Issues

| | |
|---|---|
| $14,900,000 (Conservation Projects) General Obligation Refunding Bonds, Series 2022A | AAA |
| $62,000,000 General Obligation Common Schools Refunding Bonds, Series 2022A | AAA |
| $180,800,000 General Obligation Infrastructure Improvement Bonds, Series 2022A | AAA |
| $32,500,000 General Obligation Infrastructure Improvement Refunding Bonds, Series 2022B | AAA |
| $15,700,000 General Obligation infrastructure Improvement Refunding Bonds, Series 2022C | AAA |

Outstanding Debt Details on Page 3

[a]Upgraded from 'AA+' on Sept. 8, 2022.

### Rating Outlook

Stable

### Applicable Criteria

U.S. Public Finance Tax-Supported Rating Criteria (May 2021)

### Related Research

Fitch Rates Ohio's $305.9MM Series 2022 GOs 'AAA'; Outlook Stable (November 2022)

### Analysts

Michael D'Arcy
+1 212 908-0662
michael.darcy@fitchratings.com

Tammy Gamerman
+1 212 908-0216
tammy.gamerman@fitchratings.com

## Rating Sensitivities

**Factors that could, individually or collectively, lead to positive rating action/upgrade:**

- Not relevant for a 'AAA' rating.

**Factors that could, individually or collectively, lead to negative rating action/downgrade:**

- Failure to maintain fiscal balance and robust reserves when addressing future financial challenges, including absorbing the potential effects of major tax policy revisions.
- State revenue growth that falls below Fitch's expectations for the long-term level of U.S. inflation for an extended period.

### Rating History (IDR)

| Rating | Action | Outlook/ Watch | Date |
|---|---|---|---|
| AAA | Upgraded | Stable | 9/08/22 |
| AA+ | Affirmed | Positive | 8/05/21 |
| AA+ | Revised | Stable | 4/05/10 |
| AA | Downgraded | Stable | 6/10/09 |
| AA+ | Affirmed | Negative | 12/15/08 |
| AA+ | Affirmed | Stable | 4/13/06 |
| AA+ | Assigned | — | 8/14/96 |

## Current Developments

### Ohio Economic Update

The pandemic initially had a sharply negative effect on Ohio's economy. Nonfarm payrolls declined by 16% from February to April 2020 compared to a U.S. median decline of 15%. Ohio's job market has since seen a strong recovery, with 88% of lost jobs regained through October 2022. However, this is well below the national median (105% regained) and U.S. states' median (99% regained). Ohio's slow labor market recovery is affected by several factors, including early retirements, weaker relative growth in information technology, finance and service sector jobs in Ohio since 2020, and a less robust labor recovery among lower-wage workers.

Fitch also considers the employment to population ratio (EPOP) when evaluating the health of state labor markets as EPOP helps gauge what proportion of the labor force is actively employed. Ohio's EPOP indicates a much improved, but not fully recovered, labor market. Ohio's EPOP of 58.9% in October was below the 60.3% states' median and also below Ohio's 60.7% reported EPOP in February 2020, just prior to the pandemic. Ohio's official unemployment rate was 4.2% in October versus the U.S. rate (3.7%).

### Fiscal 2022 Concluded with a More Than $2 Billion Operating Surplus

Fiscal 2022 revenue performance finished well above budgeted estimates. Tax revenues exceeded estimates by $2.7 billion, or 10.8%, and were $1.7 billion (6.4%) above prior-year actuals. Fiscal 2022's tax revenue growth was not anticipated, as the state had budgeted for a $1 billion (4%) drop in collections when incorporating the effect of personal income tax (PIT) reductions that took effect on July 1, 2021. PIT receipts beat forecasts by the broadest margin, coming in $1.9 billion (21%) above budget despite the tax cuts. Ohio revised its biennial budget in 2022, appropriating a portion of the surplus to fund new capital projects and finance infrastructure upgrades related to Intel and other developments.

State policymakers and the Ohio Legislature are focused on directing one-time revenues, including federal funding, toward nonrecurring expenditures. The BSF balance currently totals $2.7 billion, equal to 6.7% of fiscal 2022 general revenue fund (GRF) revenues and 9.4% of state-source GRF revenues. No draws were made on the BSF in fiscal years 2020 and 2021, and none are expected in the current biennium.

### Fiscal 2022–2023 Biennial Budget Focuses on Tax Cuts and Education Spending

Ohio's biennial budget for fiscal years 2022-2023 assumes 3% annual tax revenue growth, adjusting for the effect of 2020's delayed income tax payments. Factoring in policy-driven tax reductions, revenues were projected to decline by 4% in fiscal 2022 followed by 3.4% growth in fiscal 2023. As mentioned, the budget included various tax revisions, including PIT rate cuts and bracket changes, that were estimated to reduce revenues by $1.6 billion (3%) for the biennium. However, based on fiscal 2022 unaudited results, state officials now expect fiscal 2022–2023 state source revenues to exceed the prior biennium by approximately $7 billion (14.3%).

The biennial budget includes increased spending for K-12 education and a revised funding formula that accounts for resident income levels along with local property values. Along with expanded funding for K-12 education, health and Medicaid, the budget includes a $1 billion

"Investing in Ohio Initiative" that provides one-time funding for business sectors and communities negatively affected by the pandemic, largely using a portion of federal funding made available to Ohio through the American Rescue Plan Act (ARPA).

### Ohio's ARPA Plans Focus on Infrastructure and a Replenished Unemployment Trust Fund

The ARPA allocates $11 billion in federal funding to the state of Ohio and its local governments. Approximately $5.4 billion has been allocated directly to the state, with another $274 million directed to state capital projects. In addition to infrastructure spending and local government recovery programs, the state has appropriated $1.5 billion of ARPA funds to fully repay an equally size federal borrowing that supported Ohio's Unemployment Trust Fund (UTF) in 2020.

Aside from the UTF deposit, Ohio has appropriated $3.4 billion of ARPA moneys in the 2022–2023 biennial budget with the largest allocations targeting water and sewer system upgrades ($696 million), economic improvement projects in Ohio's southeastern Appalachia region ($500 million), public safety and violence prevention ($250 million) and natural resources (mostly water) conservation efforts ($202 million). Another $1.9 billion of ARPA moneys remains to be allocated; these funds will likely be included in Ohio's fiscal 2024–2025 biennial budget. Ohio has not used its ARPA allocation to supplant state revenue or to finance recurring expenditures.

## Credit Profile

Ohio's economy demonstrated slow but steady growth prior to the pandemic, with performance in recent years slightly lagging national trends. Key employment sectors include transportation, distribution and warehousing of manufactured goods, all of which are facilitated by an extensive system of ports on Lake Erie, barge service on the Ohio River and advanced air-cargo and rail infrastructure. In recent years, Ohio's financial services, health care, higher education, and life sciences sectors have expanded. Ohio's geography features multiple river systems that connect via a network of canals. Lake Erie and smaller lakes provide abundant fresh water sources.

The state experienced a sharp slowdown in economic activity when the pandemic began. As public health restrictions were eased, economic activity swiftly rebounded, aided by federal stimulus measures. Fitch expects Ohio's economy will most likely return to its pre-pandemic growth pattern in the near term. Ohio's gross state product (GSP) growth has trailed the rate of national GDP expansion in recent decades.

In January, Intel Corporation announced that it will invest over $20 billion to build new semiconductor manufacturing facilities in Licking County, east of Columbus. Intel's planned facilities are the first of their kind in Ohio, introducing a new, high-tech industry that could potentially support improvement in the state's long-term growth trajectory. Intel expects to begin construction this month, with scheduled completion by 2025.

The state estimates the Intel project will result in the creation of some 20,000 new jobs: 7,000 short-term positions during construction, some 3,000 permanent jobs at Intel after project completion, and approximately 10,000 related or support jobs via the creation and/or expansion of supporting businesses in the area.

### Revenue Framework

Ohio relies on a diverse set of broad-based taxes to support operations, including PIT and sales and use taxes. These major tax revenues are collected in the GRF with constitutional exceptions for highway-related revenues that are directed to transportation funding and lottery proceeds that are directed toward funding a portion of public education costs.

In recent biennia, the state has pursued wide-ranging tax policy changes that have included tax rate reductions. These actions have lowered collections relative to baseline growth patterns. The fiscal 2022–2023 biennial budget included new tax cuts totaling about $2.0 billion for the biennium, equal to about 3.9% of tax revenues. The most significant revisions relate to PIT rate reductions and tax bracket changes that established a new 3.99% maximum rate bracket. The fiscal effects of these policy changes have been manageable, aided by conservative revenue forecasting and favorable economic trends.

### Outstanding Debt

| | |
|---|---|
| School Bond Program FN2 | AA+ |
| (I 90 Bridge DBF Project) Payment Obligations FN3 | AA- |
| (Administrative Building Fund Projects) Capital Facilities Lease-Appropriation Bonds FN2 | AA+ |
| (Administrative Building Fund Projects) Capital Facilities Lease-Appropriation Bonds (Taxable) FN2 | AA+ |
| (Administrative Building Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds FN2 | AA+ |
| (Administrative Building Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds (Taxable) FN2 | AA+ |
| (Adult Correction Building Fund Project) Capital Facilities Lease-Appropriation Refunding Bonds FN2 | AA+ |
| (Adult Correctional Building Fund Projects) Capital Facilities Lease-Appropriation Bonds FN2 | AA+ |
| (Adult Correctional Building Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds FN2 | AA+ |
| (Adult Correctional Building Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds (Taxable) FN2 | AA+ |
| (Adult Correctional Building Fund Projects) Capital Facilities Lease-Appropriation Variable Rate Bonds FN4 | AA+/F1+ |
| (Conservation Projects) General Obligation Bonds FN5 | AAA |
| (Conservation Projects) General Obligation Bonds (Federally Taxable-Build America Bonds) FN5 | AAA |
| (Conservation Projects) General Obligation Refunding Bonds FN5 | AAA |
| (Cultural and Sports Facilities Building Fund Projects) Capital Facilities Lease-Appropriation Bond sFN2 | AA+ |
| (Higher Education) General Obligation Refunding Bonds FN5 | AAA |
| (Job Ready Site Development) General Obligation Bonds FN5 | AAA |
| (Juvenile Correctional Building Fund Projects) Capital Facilities Lease-Appropriation Bonds FN2 | AA+ |
| (Juvenile Correctional Building Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds FN2 | AA+ |
| (Mental Health Facilities Improvement Fund Projects) Capital Facilities Lease-Appropriation Bonds FN2 | AA+ |
| (Mental Health Facilities Improvement Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds FN2 | AA+ |

The state's 10-year historical average revenue growth rate, adjusted for the estimated effect of policy changes, has lagged U.S. GDP growth but been above the inflation rate. Fitch anticipates Ohio's revenues will demonstrate steady growth in line with our expectations for long-term U.S. inflation, with some upside potential for faster growth above the rate of inflation if the state can meaningfully and sustainably improve the pace of economic growth.

Ohio has no legal limitations on its ability to raise revenues through base broadening, rate increases or the assessment of new taxes or fees.

### Expenditure Framework

Ohio has ample flexibility within its expenditure framework. The natural pace of spending growth is expected to be marginally above its somewhat slowly growing revenue stream. The state's carrying costs for debt and retirement liabilities are low.

Ohio's primary cost drivers include Medicaid and education spending. The fiscal challenge of Medicaid is common to all U.S. states and the nature of the program as well as federal government rules that limit the states' options in managing the pace of spending growth. Federal action to revise Medicaid's fundamental programmatic and financial structure does not appear to be a near-term priority of the current federal administration or Congressional leadership. As with all federal programs, Medicaid remains subject to regulatory changes that could affect various aspects of the program.

Ohio's Medicaid caseloads have increased as a result of the pandemic and federal provisions mandating continued eligibility in exchange for enhanced Federal Medical Assistance Percentage (FMAP) funding (a 6.2 percentage point increase in the federal Medicaid reimbursement rate). The state currently anticipates the enhanced FMAP will remain in place through the end of CY 2022 with the additional federal transfers equal to $350 million per quarter. FMAP enhancement is tied to the federal secretary of health and human services' (HHS) continuing renewal of the public health emergency due to Covid-19.

ARPA provided additional enhancement for home and community-based services through March 21, 2022. In addition, the fiscal 2022-2023 biennial budget set aside extra HHS fund reserves of about $1.2 billion to cushion the anticipated ending of enhanced FMAP. Ohio set aside an additional $1.4 billion of Medicaid-linked reserves in four other funds to further cushion the effect of the enhanced FMAP phase-out for hospitals and prescription drug plans. The state expects Medicaid enrollment to decline once the enhanced FMAP expires, since recent growth was driven by coverage provisions, rather than by economic eligibility.

The state has ample expenditure flexibility, with a tendency to rely on budget-cutting actions rather than revenue increases to maintain structural balance. During past recessions, Ohio has reduced distributions and phased out certain tax reimbursements to local governments and school districts. The state has also cut education funding and reduced headcount in the past to preserve fiscal flexibility.

Ohio responded to the initial revenue effect of the pandemic by enacting spending reductions, including cuts to education and Medicaid spending. Carrying costs for debt and retiree obligations are expected to remain low (i.e. close to 3%) as a percentage of budget given Ohio's well-established track record of providing full actuarial funding for its public pension plans annually, as well as its adherence to conservative debt management policies.

### Long-Term Liability Burden

On a combined basis, long-term debt and net pension liabilities attributable to the state as of Fitch's 2022 state liability report were about 3.8% of personal income, falling below the 4.7% median for U.S. states. Reflecting more recent debt and personal income data as of 2Q 2022, Fitch estimates Ohio's combined long-term liability burden at about 3.7% of 2021 personal income. Ohio retains ample cash resources to fund pay-go capital projects, which will help maintain the state's debt burden near current levels for the foreseeable future.

### Outstanding Debt

| | |
|---|---|
| (Parks & Recreation Improvement Fund Projects) Capital Facilities Lease-Appropriation BondsFN2 | AA+ |
| (Parks & Recreation Improvement Fund Projects) Capital Facilities Lease-Appropriation Refunding Bonds FN2 | AA+ |
| (Parks & Recreation Improvement Fund Projects) Capital Facilities Lease-Appropriation Variable Rate Bonds FN4 | AA+/F1+ |
| (Transportation Building Fund Projects) Capital Facilities Lease-Appropriation Bonds FN2 | AA+ |
| (Full Faith And Credit/Highway User Receipts) General Obligation Highway Capital Improvement Bonds FN5 | AAA |
| (full faith and credit/highway User receipts) General Obligation Highway Capital Improvement Bonds (Federally Taxable-Build America Bonds-Direct Payment) FN5 | AAA |
| (Full Faith and Credit/Highway User Receipts) General Obligation Highway Capital Improvement Refunding Bonds FN5 | AAA |
| General Obligation Conservation Projects Bonds FN5 | AAA |
| General Obligation Conservation Projects Bonds (Taxable) FN5 | AAA |
| General Obligation Natural Resources Bonds FN5 | AAA |
| General Obligation Natural Resources Refunding Bonds FN5 | AAA |
| General Obligation Third Frontier Research & Development General Obligation Bonds FN5 | AAA |
| General Obligation Third Frontier Research & Development General Obligation Bonds (Taxable) FN5 | AAA |
| General Obligation Coal Development Bonds FN5 | AAA |
| General Obligation Common schools Adjustable-Rate Bonds FN6 | AAA/F1+ |
| General Obligation Common schools Bonds FN5 | AAA |
| General Obligation Common schools Refunding Bonds FN5 | AAA |
| General Obligation Common schools Refunding Bonds (Taxable) FN5 | AAA |
| General Obligation higher Educational Bonds FN5 | AAA |
| General Obligation Higher Educational Bonds (Taxable) FN5 | AAA |
| General Obligation Higher Educational Refunding Bonds FN5 | AAA |
| General Obligation Higher Educational Refunding Bonds (Taxable) FN5 | AAA |

Fitch has historically considered Ohio's actuarial funding of its defined benefit retirement systems, which provide for both pensions and health care, to be a credit strength. Ohio has a history of making contributions sufficient to support full actuarial pension prefunding and partial retiree health benefit funding. Most of the state's pension and OPEB liabilities are with the Ohio Public Employees Retirement System (OPERS), with additional liabilities in other plans covering teachers and highway patrol.

As of the state's fiscal 2021 financial statement, combined pension system assets covered about 86% of liabilities. Using Fitch's more conservative 6% discount rate would lower the assets-to-liabilities ratio to 75%. The state and the plans have implemented changes over time to support sound funding; these include, at OPERS, shifting contributions toward pensions to support funding progress and modifying OPEB provisions to lower the liability.

### Operating Performance

Ohio's superior ability to respond to downturns reflects its ample budget flexibility and availability of reserves. During the Great Recession, revenues suffered significant declines, exacerbated by ongoing tax reductions. Resulting budget gaps were addressed with both ongoing and one-time measures. These included use of the BSF, refunding debt for current year savings, unpaid employee leave, and accelerating the phase-out of tax reimbursements for schools and local governments.

In response to the initial pandemic-related stress on its finances, the state reduced spending, while also relying on increased federal aid, but did not draw on the BSF. Fitch expects Ohio would continue to rely primarily on expense reductions to address a future downturn but could again draw on the BSF.

### FAST Analysis

The Fitch Analytical Stress Test Model (FAST) relates historical tax revenue volatility to GDP to support the assessment of operating performance under Fitch's criteria. FAST is not a forecast, but represents Fitch's estimate of possible revenue behavior in a downturn based on historical revenue performance. Actual revenue declines will vary from FAST results, which provide a relative sense of the risk exposure of a particular state compared to other states.

FAST indicates that Ohio's revenues would experience a smaller (2%) decline in the first year of a standard downturn scenario (U.S. GDP decline of 1%), compared to the U.S. state median first-year decline (3%). This suggests that Ohio's revenues are somewhat less volatile than those of other states. Ohio's history of containing spending and access to a $2.7 billion BSF balance provide the state with sufficient flexibility to address the magnitude of revenue loss associated with Fitch's scenario.

Ohio has rebuilt its financial flexibility during economic recoveries, restoring its BSF and eliminating reliance on one-time budget items. A statutory increase in the BSF maximum funding requirement to 8.5% of prior-year GRF revenues from 5.0% in 2015 has provided the state added capacity to address future downturns and is emblematic of Ohio's approach to bolstering its finances during the ten-year expansion that followed the Great Recession.

The BSF balance totals $2.7 billion, equaling 6.7% of FY2022 GRF revenues and 9.4% of state-source GRF revenues. Ohio also maintains a permanent contingency fund balance equal to 0.5% of prior-year GRF revenues. Together, the two funds equaled 10.1% of fiscal 2022 state-source revenues at June 30, 2022. The Ohio Legislature must act affirmatively to transfer reserves to the BSF; however, a statutory provision allowing the BSF to retain interest earnings that took effect in 2021 will naturally boost future growth in the BSF.

### Ample Liquidity

The state's Liquidity Fund has ample liquidity to meet tenders on variable-rate bonds that have not been remarketed. The fund is conservatively invested in U.S. Treasury and agency securities, domestic commercial paper, and money market funds. The liquidity portfolio has consistently provided strong variable-rate debt coverage. The fund also provides liquidity support to bond anticipation notes issued by local governments (the Ohio Market Access Program, or OMAP) and to select variable-rate issues by Ohio municipalities, including hospitals. Of the latter, $75 million of bonds outstanding are supported by a state-issued standby bond purchase agreement (SBPA).

### Outstanding Debt

| | |
|---|---|
| General Obligation infrastructure Improvement Adjustable-Rate Refunding Bonds FN6 | AAA/F1+ |
| General Obligation infrastructure Improvement Bond sFN5 | AAA |
| General Obligation infrastructure Improvement Bonds (Federally Taxable - Build America Bonds - Direct Payment) FN5 | AAA |
| General Obligation infrastructure Improvement Refunding BondsFN5 | AAA |
| General Obligation infrastructure Improvement Refunding Bonds (Taxable) FN5 | AAA |
| Natural Resources General Obligation Refunding Bonds FN5 | AAA |
| Third Frontier Research & Development General Obligation Refunding Bonds FN5 | AAA |
| common schools General Obligation Refunding Bonds FN5 | AAA |
| higher Educational General Obligation Bonds FN5 | AAA |
| higher Educational General Obligation Bonds (Federally Taxable - Build America Bonds - Direct Payment) FN5 | AAA |
| higher Educational General Obligation Refunding Bonds FN5 | AAA |
| infrastructure Improvement General Obligation Bonds FN5 | AAA |
| infrastructure Improvement General Obligation Refunding Bonds FN5 | AAA |

The month-end balance of the Liquidity Fund as of Sept. 30, 2022, as discounted by Fitch to reflect the immediate availability of funds, equals $2.1 billion. The balance provided over 3 times coverage of debt supported by Ohio's internal liquidity resources.

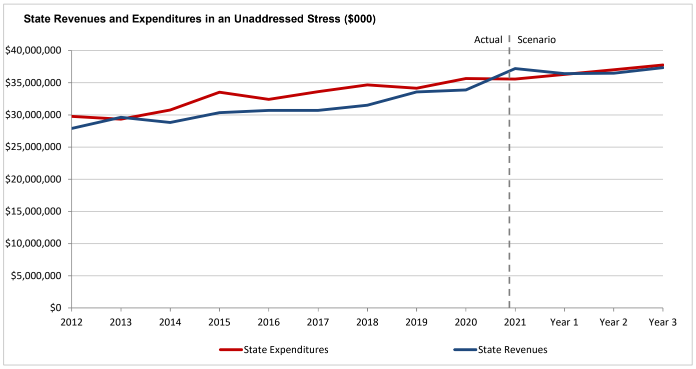
## ESG Considerations

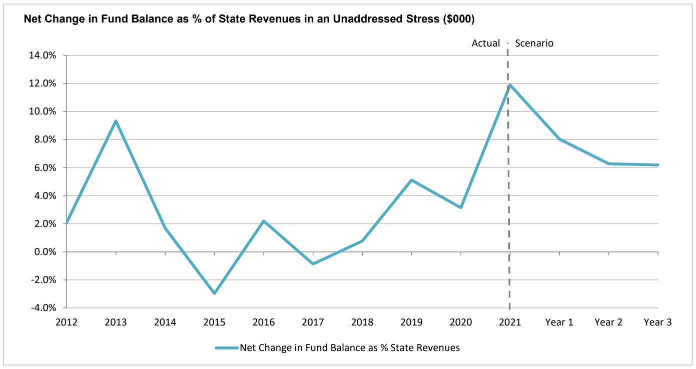
Unless otherwise disclosed in this section, the highest level of ESG credit relevance is a score of '3'. This means ESG issues are credit-neutral or have only a minimal credit impact on the entity, either due to their nature or the way in which they are being managed by the entity. For more information on Fitch's ESG Relevance Scores, visit www.fitchratings.com/esg.

## Ohio, State of (OH)

**Scenario Analysis**

Ver 36




**Analyst Interpretation of Scenario Results**

Ohio's superior ability to respond to downturns reflects its ample budget flexibility and availability of reserves. During the Great Recession, revenues suffered significant declines, exacerbated by ongoing tax reductions. Resulting budget gaps were addressed with both ongoing and one-time measures. These included use of the BSF, refunding debt for current year savings, unpaid employee leave, and accelerating the phase-out of tax reimbursements for schools and local governments. In response to the initial pandemic-related stress on its finances, the state acted to reduce spending, relying also on increased federal aid, but not on draws from the BSF. It is Fitch's expectation that Ohio would continue to rely primarily on expense reductions to address a future downturn, but could again draw upon its now restored BSF.

| Scenario Parameters: | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| GDP Assumption (% Change) | (1.0%) | 0.5% | 2.0% |
| Expenditure Assumption (% Change) | 2.0% | 2.0% | 2.0% |
| Revenue Output (% Change) | (2.1%) | 0.2% | 2.4% |

*Minimum Y1 Stress:* -1% *Case Used:* **Moderate**

| Revenues, Expenditures, and Net Change in Fund Balance | Actuals | | | | | | | | | | Scenario Output | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | Year 1 | Year 2 | Year 3 |
| **Expenditures** | | | | | | | | | | | | | |
| Total Expenditures | 51,177,175 | 50,876,071 | 53,690,264 | 58,064,992 | 58,708,554 | 59,869,809 | 60,956,137 | 60,966,546 | 64,994,756 | 73,734,021 | 75,208,701 | 76,712,875 | 78,247,133 |
| % Change in Total Expenditures | (0.2%) | (0.6%) | 5.5% | 8.1% | 1.1% | 2.0% | 1.8% | 0.0% | 6.6% | 13.4% | 2.0% | 2.0% | 2.0% |
| State Expenditures | 29,781,323 | 29,338,970 | 30,769,509 | 33,531,021 | 32,426,854 | 33,611,309 | 34,661,565 | 34,152,614 | 35,659,646 | 35,585,225 | 36,296,930 | 37,022,868 | 37,763,325 |
| % Change in State Expenditures | 6.5% | (1.5%) | 4.9% | 9.0% | (3.3%) | 3.7% | 3.1% | (1.5%) | 4.4% | (0.2%) | 2.0% | 2.0% | 2.0% |
| **Revenues** | | | | | | | | | | | | | |
| Total Revenues | 49,297,817 | 51,164,075 | 51,738,478 | 54,880,042 | 56,989,243 | 56,959,027 | 57,815,314 | 60,384,156 | 63,218,285 | 75,347,089 | 75,338,983 | 76,176,229 | 77,844,561 |
| % Change in Total Revenues | (1.4%) | 3.8% | 1.1% | 6.1% | 3.8% | (0.1%) | 1.5% | 4.4% | 4.7% | 19.2% | (0.0%) | 1.1% | 2.2% |
| Federal Revenues | 21,395,852 | 21,537,101 | 22,920,755 | 24,533,971 | 26,281,700 | 26,258,500 | 26,294,572 | 26,813,932 | 29,335,110 | 38,148,796 | 38,911,772 | 39,690,007 | 40,483,808 |
| % Change in Federal Revenues | (8.2%) | 0.7% | 6.4% | 7.0% | 7.1% | (0.1%) | 0.1% | 2.0% | 9.4% | 30.0% | 2.0% | 2.0% | 2.0% |
| State Revenues | 27,901,965 | 29,626,974 | 28,817,723 | 30,346,071 | 30,707,543 | 30,700,527 | 31,520,742 | 33,570,224 | 33,883,175 | 37,198,293 | 36,427,211 | 36,486,221 | 37,360,753 |
| % Change in State Revenues | 4.6% | 6.2% | (2.7%) | 5.3% | 1.2% | (0.0%) | 2.7% | 6.5% | 0.9% | 9.8% | (2.1%) | 0.2% | 2.4% |
| **Excess of Revenues Over Expenditures** | (1,879,358) | 288,004 | (1,951,786) | (3,184,950) | (1,719,311) | (2,910,782) | (3,140,823) | (582,390) | (1,776,471) | 1,613,068 | 130,282 | (536,647) | (402,572) |
| **Total Other Financing Sources** | 2,457,660 | 1,010,348 | 2,440,585 | 2,284,308 | 2,393,066 | 2,643,785 | 3,383,641 | 2,299,661 | 2,842,139 | 2,810,396 | 2,795,924 | 2,826,352 | 2,714,895 |
| **Net Change in Fund Balance** | 578,302 | 2,761,858 | 488,799 | (900,642) | 673,755 | (266,997) | 242,818 | 1,717,271 | 1,065,668 | 4,423,464 | 2,926,206 | 2,289,706 | 2,312,322 |
| % Total Expenditures | 1.1% | 5.4% | 0.9% | (1.6%) | 1.1% | (0.4%) | 0.4% | 2.8% | 1.6% | 6.0% | 3.9% | 3.0% | 3.0% |
| % State Expenditures | 1.9% | 9.4% | 1.6% | (2.7%) | 2.1% | (0.8%) | 0.7% | 5.0% | 3.0% | 12.4% | 8.1% | 6.2% | 6.1% |
| % Total Revenues | 1.2% | 5.4% | 0.9% | (1.6%) | 1.2% | (0.5%) | 0.4% | 2.8% | 1.7% | 5.9% | 3.9% | 3.0% | 3.0% |
| % State Revenues | 2.1% | 9.3% | 1.7% | (3.0%) | 2.2% | (0.9%) | 0.8% | 5.1% | 3.1% | 11.9% | 8.0% | 6.3% | 6.2% |

Notes: Scenario analysis represents an unaddressed stress on issuer finances. Fitch's scenario analysis assumes the GDP and expenditure growth sequence shown in the 'Scenario Parameters' section. For further details, please see Fitch's US Tax-Supported Rating Criteria.

The ratings above were solicited and assigned or maintained at the request of the rated entity/issuer or a related third party. Any exceptions follow below.