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CREDIT OPINION
29 January 2018

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State of Ohio

Update to credit analysis

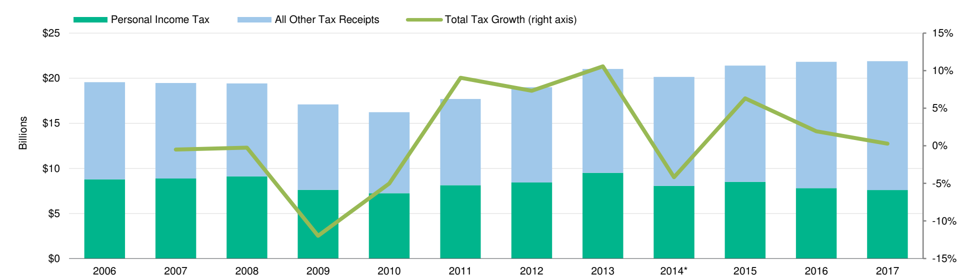
Summary

The State of Ohio's (Aa1 stable) credit profile is supported by strong and proactive financial management, including timely response to budget shortfalls and moderate, stable, albeit below-average economic growth, and affordable debt, pension and other post-employment benefit (OPEB) liabilities.

The credit profile of the state's lease appropriation bonds (Aa2 stable) reflects the need for biennial legislative appropriation of lease payments backing the bonds, and is notched down from the state's general obligation credit. There are no bondholder remedies in the event of non-appropriation.

Exhibit 1

Fiscal 2017 Revenue Growth Was $849 Million Below Budget, Narrowing Financial Performance



*Personal Income Tax Rate Reductions Implemented
Source: Ohio Official Statements; Moody's Investors Service

Credit strengths

» Conservative fiscal management including sound budgeting and proactive responses to budgetary shortfalls

» High levels of internal liquidity, including available balances outside the general revenue fund

» Relatively moderate long-term liabilities that are affordable compared to the state's

» budget

» Statutory requirement to deposit surplus year-end revenues in the state's Budget Stabilization Fund

Credit challenges

» Economy that remains vulnerable to manufacturing industry declines

» Potential revenue reductions from tax reform that threaten the state's balanced financial operations

» Lack of certain best financial management practices

Rating outlook

Ohio's stable outlook is based on our expectation that the state's enacted budget and proactive financial management will support a satisfactory financial position for the current budget year. It also reflects our view that the state's economy will remain stable, despite relatively weak demographic trends.

Factors that could lead to an upgrade

» Sustained increase in reserves and fund balance position significantly above historic levels

» Economic performance that exceeds national averages over an extended period

Factors that could lead to a downgrade

» Evidence of financial deterioration, including a return to budgetary structural imbalance

» Weakening of GAAP-basis general fund balances and liquidity position below current expectations

» Persistent economic weakness, reflected in below-average employment, personal income or demographic trends

Key indicators

Exhibit 2

Ohio	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Operating Fund Revenues (000s)	23,799,656	25,017,473	24,320,752	25,554,301	25,428,417
Balances as % of Operating Fund Revenues	5.3%	13.2%	14.9%	11.7%	13.8%
Net Tax-Supported Debt (000s)	12,089,413	12,572,156	12,856,609	12,664,731	12,621,591
Net Tax-Supported Debt/Personal Income	2.8%	2.7%	2.7%	2.6%	2.5%
Net Tax-Supported Debt/Personal Income 50 State Median	2.8%	2.6%	2.5%	2.5%	2.5%
Debt/Own-Source Governmental Funds Revenue	41.9%	40.9%	43.2%	40.3%	39.6%
Debt/Own-Source Governmental Funds Revenue Median	37.4%	36.1%	35.8%	34.4%	32.7%
ANPL/Own-Source Govt Funds Revenue	54.6%	54.9%	48.1%	43.3%	43.0%
ANPL/Own-Source Govt Funds Revenue Median	92.6%	87.6%	81.5%	83.1%	82.0%
Total Non-Farm Employment Change (CY)	1.8%	1.2%	1.5%	1.5%	1.1%
Per Capita Income as a % of US (CY)	90.9%	91.4%	90.7%	90.5%	90.6%

*All Governmental Funds Revenue excludes Federal revenues
Source: Ohio Comprehensive Annual Financial Reports; Moody's Investors Service

Profile

Ohio is the seventh-largest US state by population. Its gross domestic product per capita also ranks seventh among the states (in current dollars).

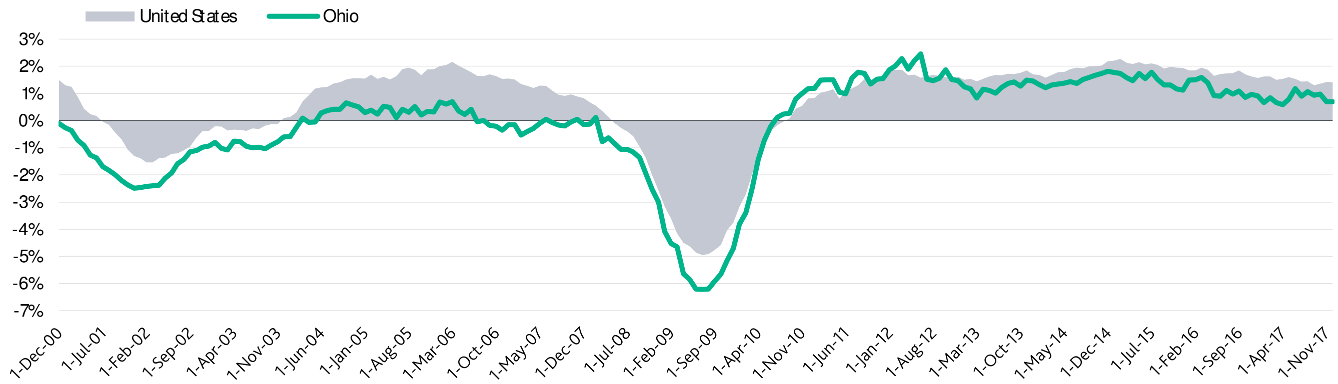
Detailed credit considerations

Economy

Since the recession, Ohio's job creation trends have compared more favorably with the US than before, but economic growth will continue to be challenged by long-term out-migration and weak population growth. Ohio's employment growth has been slowing since early 2016, and was 0.7% year-over-year through December 2017, down from 1.6% in March 2016. National job growth has also slowed but remains above Ohio's; job growth is at 1.4% currently compared with 1.9% in early 2016. Despite the slowdown, Ohio's seasonally adjusted nonfarm employment remains above its pre-recession peak of 5.5 million. In addition, Ohio's unemployment rate has declined steadily over the past six months to 4.7% in December from 5.4% in August despite above-average labor force growth. Year-over-year labor force growth was 1.5% through December, compared to 0.5% for the US.

Exhibit 3

Ohio's post-recession job growth trends are more favorable relative to the U.S. but remain below-average



Source: US Bureau of Labor Statistics; Moody's Investors Service

Job growth has been primarily in education and health services and financial services, combined with relatively stable manufacturing. Education and health services, which comprised 16.8% of total employment, saw 2.3% growth year-over-year through September. Manufacturing, which makes up 12.5% of employment, has been relatively flat at 0.3% growth through September. The strong dollar, increased plant automation, and slowing auto demand will challenge the manufacturing sector's growth nationwide.

Ohio's rate of personal income growth has declined to 2.0% year-over-year through September, compared to 2.6% for the nation. Ohio's 2016 per-capita personal income ($44,593) has improved to 90.6% of the nation's, from 89.1% in 2007.

Finances and liquidity

Lower-than-expected fiscal 2017 revenues have reduced Ohio's revenue projections for the current biennium, and the state's budget flexibility will narrow over the next two fiscal years. In response to the lower revenue forecast, Ohio's adopted fiscal 2018-2019 biennial general revenue fund (GRF) budget incorporated a mix of targeted and across-the-board cuts and modestly increased non-recurring resources relative to the proposed budget. The new budget incorporates reasonable revenue assumptions, modest tax reform, and restrained spending growth to achieve structural balance by the second year of the biennium (ending June 30, 2019).

The state's economic forecast is conservative relative to its consultants' projections, and baseline revenue growth is budgeted at 2.8% and 3.4% in fiscal 2018 and 2019, respectively. However, these relatively modest growth rates are well above the fiscal 2017 revenue growth of 0.3%. Fiscal 2017 revenues ended $849 million (3.7%) below the mid-biennium budget revision primarily due to an income tax shortfall ($653 million, or 8%). Income taxes were negatively affected by weak wages, taxpayers deferring income realization, and unusually large refunds, which the state expects will begin to normalize in fiscal 2018.

Through December, Ohio's tax receipts are 0.2% above the budget forecast. Sales taxes and personal income taxes, the two largest revenues, are essentially on target, at 0.3% and 0.7% above budget, respectively. Income tax refunds are 19% above forecast year-to-date, and are therefore pressuring net collections, however this is somewhat balanced by December quarterly payments that were 29% over estimate. Year-to-date disbursements are also slightly favorable (1.2% below budget), and the estimated unencumbered ending fiscal 2018 fund balance has remained flat, at $223.7 million (more on fund balances below).

Appropriations will decline 6.7% to $32.2 billion in fiscal 2018, due to the reallocation of certain Medicaid expenditures outside the GRF, as discussed below. Fiscal 2019 appropriations are projected to grow 3.5%, to $33.3 billion. After growing 4.2% in fiscal 2017, GRF

K-12 spending growth will be limited to 1.5% and 1.6% in fiscal 2018 and 2019, respectively, including reductions in transportation cost-sharing and in guaranteed state aid for districts with enrollment declines of 5% or more over the past two years.

To balance the federally enforced elimination of the sales tax on Medicaid managed care organizations (MCOs), the state has implemented a new "Health Insuring Corporation" provider assessment on all MCOs. The state estimates that the managed care sales tax provided the GRF approximately $597 million, which will be more than offset by $615 million from the new assessment. The provider assessment revenue will be collected in a dedicated fund outside the GRF, and the state will shift an equivalent amount of Medicaid expenditures to the new fund, resulting in a net neutral impact on the GRF. The state also plans to make a one-time $207 million transfer in fiscal 2018 to counties and transit agencies to phase in the impact of the loss of the Medicaid MCO sales tax.

LIQUIDITY

Due to revenue underperformance, the fiscal 2017 fund balances, on both a budget basis and a GAAP basis, ended below fiscal 2016 and lower than budgeted. Fiscal 2017 available reserves (GAAP basis) declined to 12.6% of revenues from 13.8% the prior year. On a budget basis, the fiscal 2017 UUFB was $171 million (0.8% of state-source revenues), compared to the midbiennial budget forecast of $459 million (2.0% of state-source revenues). The UUFB has declined for the past four consecutive years, partially to offset tax rate reductions, from a peak of $1.1 billion (5.0% of state-source revenues) in fiscal 2013. However, the Budget Stabilization Fund (BSF) and total available liquidity remain strong.

Ohio has successfully prioritized and rebuilt its BSF since the recession. The state raised the statutory target to 8.5% (from 5%) of total general revenue fund revenues (including federal revenues), followed by a $526.6 million deposit in early fiscal 2016, its fourth deposit into the BSF in the past five years. The current BSF balance of $2.0 billion is 9% of state-source general revenue fund revenues.

The state also has significant available liquidity in other operating funds that can be borrowed by the General Revenue Fund within the fiscal year, up to 10% of GRF revenues. As of October 31, 2017, combined daily and weekly liquidity was $5.4 billion.

Debt and pensions

With net tax-supported debt of $12.6 billion, Ohio has maintained a moderate debt burden relative to other states. The state's 2016 net tax-supported debt matches the 50-state median of 2.5% of personal income. Ohio ranks 25th among states based on net tax-supported debt as a percentage of personal income, down from 20th in 2005.

Ohio's net tax-supported debt includes debt issued by Jobs Ohio as well as a $195 million long-term liability associated with the state Department of Transportation's public-private partnership (PPP) with the Portsmouth Gateway Group, LLC to construct the Southern Ohio Veterans Memorial Highway (State Route 823), a four-lane limited access highway around the City of Portsmouth, Ohio.

DEBT STRUCTURE

Ohio has $430.7 million of variable-rate demand debt outstanding (or 3.4% of total debt), for which it maintains an internal liquidity program for tendered bonds that are not remarketed. The short-term ratings on these bonds are VMIG 1, reflecting the state's strong management of available liquid resources. As of December 29, 2017, Ohio had $4.5 billion of daily and weekly assets available to support the bonds, on a discounted basis. The state has never had a failed remarketing, but maintains clearly articulated process documents and has successfully implemented its liquidity support procedures.

The state treasury also supports the Ohio Market Access Program, providing back-up liquidity to qualified local governments that have issued bond anticipation notes (BANs). The program authorization is capped at $300 million, and as of December 29, 2017, there were $120 million of BANs outstanding.

DEBT-RELATED DERIVATIVES

The state is a party to five swap agreements with a combined notional principal of $346.5 million that hedge interest rate risk on its variable-rate obligations. Collateral posting requirements are pegged to rating levels starting at Aa3 and lower, and termination provisions are triggered if the state's rating falls below Baa3 (Moody's) or BBB- (S&P). Triggers at these low rating levels introduce minimal risk to the state. As of June 30, 2017, the combined mark-to-market value of the swaps was negative $30.9 million.

PENSIONS AND OPEB

Ohio's 2016 adjusted net pension liability (ANPL), our measure of the government's pension burden, is $13.6 billion, or (43% of own-source governmental revenues compared with a 50-state median of 82%. Ohio ranks 43rd in ANPL as a percent of own-source governmental revenues. The state participates in three pension systems, including the Ohio Public Employees Retirement System, the State Teachers Retirement System, and the Highway Patrol Retirement System. Moody's ANPL reflects certain adjustments made to improve comparability of reported pension liabilities.

The state's fiscal 2015 pension contribution was a very low 1.3% of own-source governmental revenues (compared to the 3.4% median) and was slightly more than the contribution amount that would allow the state's reported net pension liability to "tread water" – or remain stable from one year to the next, assuming investment return and other actuarial assumptions are met for the year.

Unlike most states, which fund other post-employment benefit (OPEB) obligations on a pay-as-you-go basis, Ohio's OPEB programs have substantial assets ($16.5 billion) pledged to cover liabilities. The state's aggregate unfunded OPEB liability is $15.8 billion, as of the most recent valuations. Pension and OPEB benefits are not guaranteed under state law, and contribution requirements and benefit levels can be changed for future and current employees.

The state's combined debt service, pension, and OPEB contributions in fiscal 2016 were relatively low, at 6.9% of own-source governmental revenues compared to the median of 8.8%.

Governance

The state constitution has no revenue raising caps or mandated spending levels, providing flexibility to increase revenues and cut expenditures when needed. The governor also has the ability to reduce appropriations through executive orders. The state rainy day fund's statutory target is 8.5% of the prior year's general revenue fund revenues (state and federal sources). The state has a statutory target to retain funding equal to 0.5% of fiscal year revenues in the general revenue fund that could be carried over to the following fiscal year. In addition, statute requires the state to deposit surpluses in excess of 0.5% of general revenue fund revenues into the rainy day fund, which generally accelerates reserve restoration, although the legislature has diverted surpluses for other uses in past years.

REPORT NUMBER 1109725

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