MOODY'S INVESTORS SERVICE

CREDIT OPINION
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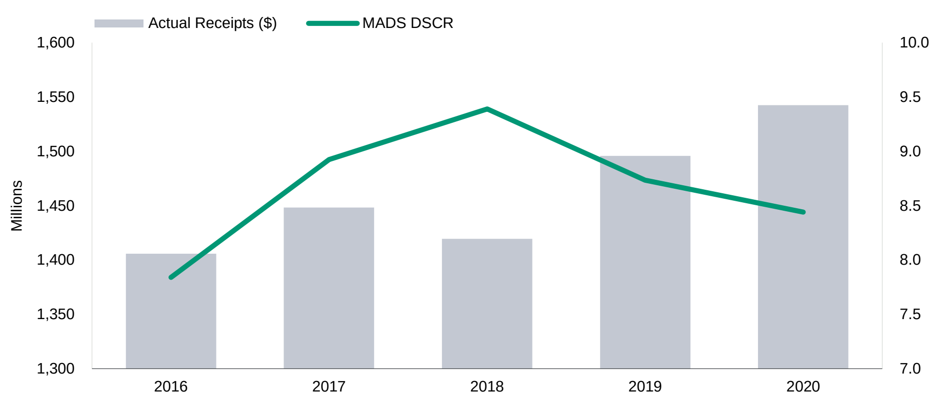
Ohio Dept. of Transp. Fed. Grant Antic. Prog.

Update to credit analysis

Summary

The credit profile of Ohio's Major New State Infrastructure Project bonds (Aa2 stable), also known as GARVEE bonds, is supported by ample debt service coverage provided by pledged revenues generated from a very broad, national tax base and a strong 5x additional bonds test. In addition, the bonds benefit from early set-asides for debt service and the Ohio Department of Transportation's (ODOT) covenant to appropriate from other available transportation funds if federal revenues are insufficient, which offsets the federal reauthorization risk. These strengths are balanced against the subject-to-appropriation nature of the pledged revenues.

Exhibit 1
Ample GARVEE Coverage Supports Bonds



Source: Ohio Official Statements; Moody's Investors Service

Credit strengths

» Additional bonds test (ABT) requiring 5x debt service coverage

» Requirement that FHWA reimbursements be used for debt service prior to other ODOT purposes

» DOT covenant to appropriate from other available transportation funds if federal grants are insufficient

» Strong GARVEE program management; any potential shortfall or delay in federal revenues would be identified well in advance of the debt service date

» Federal Aid Highway Program's history of national support

Credit challenges

» Requirement for Ohio legislature to pass biennial appropriations of state's FHWA funds to allow debt service payment

» Risk that federal government will fail to provide timely funding reauthorization

» Large and growing structural imbalance in the federal Highway Trust Fund (HTF) requires ongoing federal general fund support

Rating outlook

The rating outlook for Ohio's Major New State Infrastructure Project Revenue Bonds is stable, based on our expectation that federal funding will remain stable beyond the expiration of the Fixing America's Surface Transportation Act (FAST Act) authorization in September 2021. In addition, the covenant to appropriate from other available resources will limit future risks of funding disruption caused by either a lapse in program authorization or depletion of the federal Highway Trust Fund (HTF) over the medium term.

Factors that could lead to an upgrade

» Removal of requirement for biennial legislative appropriation of pledged revenue, combined with a very strong flow of funds

» Other structural enhancements that further diminish federal reauthorization risk

Factors that could lead to a downgrade

» Large, sustained decrease in ODOT's other available resources that can pay GARVEE debt service

» Discontinuation of or reduction in federal transportation grant program

» Extended lapse in reauthorization of federal transportation spending

» Sharp HTF revenue decline caused by economic stress, tax inefficiency or redirection of fuel taxes to Federal general fund

» Issuance of parity debt with significantly longer maturities than in the past, or substantial increase in leverage

» Failure to provide timely appropriation to allow for payment of debt service

Key indicators

Exhibit 2

Ohio Major New State Infrastructure Project Revenue Bonds	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021P
Debt Outstanding ($Mil)	810	672	872	908	888	986
Obligation Authority ($Mil)	1,424	1,462	1,534	1,632	1,566	1,442
Pledged revenue (Actual receipts; $Mil)	1,406	1,448	1,420	1,496	1,543	1,367
Annual growth in receipts (%)	-0.1%	3.0%	-2.0%	5.4%	3.1%	-11.4%
Annual debt service ($Mil)	179	162	151	187	183	169
Annual coverage by actual receipts (x)	7.8x	8.9x	9.4x	8.0x	8.4x	8.1x
MADS Coverage by OA (x)	8.7x	9.6x	9.6x	9.6x	9.6x	9.6x
Additional Bonds Test (x)	5.0x	5.0x	5.0x	5.0x	5.0x	5.0x
Debt Serviceas a % of Pledged Revenue	12.8%	11.2%	10.6%	12.5%	11.8%	12.3%

Source: Ohio Official Statements and Continuing Disclosure; Moody's Investors Service

Profile

Ohio is the seventh-largest US state by population. Its gross domestic product per capita also ranks seventh among states. The Ohio Department of Transportation is responsible for planning, designing, constructing, maintaining and rehabilitating the state's highway system. It administers federal funds -- including those used by local jurisdictions for local road and bridge projects -- as well as funding that both the state and federal governments allocate to public transportation, bridge, waterway and aviation infrastructure. ODOT is overseen by an appointee of the governor of Ohio and is one of the state's largest agencies, with approximately 4,900 employees.

Detailed credit considerations

Tax Base and Nature of Pledge

The source of pledged revenues is Federal Title 23 funding received by the state under the Federal Aid Highway Program, which provides a very broad, national tax base. The Highway Program is administered by the US Department of Transportation's Federal Highway Administration (FHWA) and funded through the Highway Trust Fund (HTF). The HTF receives revenues from national excise taxes on gasoline and other vehicle taxes established under periodic reauthorization by Congress. HTF funds are used to reimburse states for eligible road and transportation capital project costs according to formulas that take into account population and other factors.

The nature of the pledge is strong. The essentiality of gas and motor vehicles makes taxes based on fuel consumption more stable than other taxes. However, the nature of the pledge is narrower than a broader pledge of sales taxes on all goods and services, and revenues are sensitive to vehicle miles traveled (VMT) and vehicle fuel efficiency. Despite declining gas tax trends, HTF revenues have been stabilized in recent years by federal general fund transfers, reflecting the importance of the program.

The principal credit challenges for GARVEEs are periodic uncertainty regarding reauthorization of the federal transportation grant programs, which have historically covered six-year periods, and volatility in federal transportation revenues. The federal highway program was initiated in 1956 and the most recent reauthorization, the FAST Act, succeeded the "Moving Ahead for Progress in the 21st Century Act," known as MAP-21, after several temporary extensions. Both FAST and MAP-21 rely on general fund transfers to keep the HTF solvent, necessary because stagnating vehicle fuel usage trends could not generate enough revenues to keep up with capital needs.

The FAST Act has been extended to September 30, 2021 and received an additional $10.4 billion general fund transfer to support the HTF. The short duration of these programs in comparison to original bond tenor means that most debt must go through two or three authorization periods. The federal government is under no legal obligation to abide by the increased spending levels set out in the FAST Act. In addition, the federal government could choose to limit spending out of the HTF in order to support non-HTF transportation spending, which would not be pledged to bondholders.

Debt Service Coverage and Revenue Metrics

Debt service coverage on the GARVEE bonds will remain strong due to the continued need for federally-reimburseable transportation projects in this large state, combined with moderate borrowing plans. The Ohio program uses a "direct" GARVEE structure wherein the state can request reimbursement for debt service, and the flow of federal funds does not rely on the pace of state capital projects.

FHWA funding received by states under the program can be measured in two ways: First, by the obligation authority (or authority to commit to eligible highway projects) allocated to the states each year under the program's formulas, and second, by actual funds received in a given year. These two figures vary from one year to the next because obligation authority is determined by the program formulas, while actual receipts are linked to reimbursements drawn for expenditures on authorized projects.

Ohio's federal highway aid obligation authority has averaged about $1.5 billion annually over the past five years and was $1.57 billion in fiscal 2020. Coverage of maximum annual debt service (MADS, including estimated debt service on the current offering) by fiscal 2020 OA and actual reimbursements was approximately 11.7x and 11.5x, respectively. The state forecasts that its fiscal 2021 obligation authority will decline 4% to $1.4 billion (compared to $169 million annual debt service), providing 10.8x MADS coverage. Fiscal 2021 actual reimbursements may decline 11% to $1.37 billion, however the state typically receives end-of-year adjustments that would increase the total reimbursements. Over the past five years, ODOT's actual receipts have averaged 96% of obligation authority.

ODOT expects to issue up to $290 million of additional bonds, which could reduce MADS coverage to a still ample 8.7x If there is no increase in annual reimbursements.

LIQUIDITY

The department maintains substantial liquidity in the form of unspent prior-year fund balances that are legally available to pay debt service on the Major New State Infrastructure Revenue Bonds. These balances provide additional support for the GARVEE bonds (more below), and averaged $363 million over the past five years. Available balances increased to $419 million in fiscal 2020, which is equivalent to 3x MADS.

There is no debt service reserve fund, as is common for state GARVEE bonds.

Debt and Legal Covenants

Under the bond documents, new bonds may only be issued as long as federal revenue will provide 5x coverage of maximum annual debt service, including the new debt service. The revenue specified in the additional bonds test is the average of actual FHWA reimbursements to the state in the most recent three state fiscal years. Like most GARVEE bonds, Ohio's do not have a debt service reserve fund.

Ohio is revising the terms of its additional bonds test so that obligation authority, rather than actual receipts, will be the basis for demonstrating compliance with the required five-times debt service coverage ratio. Under the current ABT, compliance has been demonstrated using a three-year average of actual federal reimbursements received, as previously noted. The change, which is intended to limit possible future impacts from low-reimbursement years, will take effect after June 15, 2021, when all debt issued under the preexisting covenant has matured. The state previously altered the terms of its additional bonds test. In connection with the issuance of the Series 2007-1 bonds, Ohio eliminated an absolute cap on annual program debt service ($100 million) and increased coverage required under the additional bonds test to five times MADS from four times. While this change allowed for additional program leverage, it maintained coverage at a high level relative to other GARVEE programs.

LEGAL SECURITY

Ohio's Major New State Infrastructure Project bonds, also known as GARVEE bonds, are secured by a lien on Title 23 Federal Highway Administration (FHWA) reimbursements to the Ohio Department of Transportation (ODOT) for eligible highway construction projects. In addition, the DOT Director has covenanted to pay debt service using other lawfully available funds in the event of an interruption in Title 23 funding. The other funds would consist of appropriations of DOT revenues from sources including state gasoline tax receipts. Other available funds amounted to $419 million in fiscal 2020.

The risk of federal funding interruption is also mitigated by ODOT's practice of fully funding the debt service account with state motor-fuel tax receipts early in the state fiscal year, well in advance of the debt service dates. Under an agreement between the state treasurer and the director of ODOT, ODOT cannot use federal highway aid for other purposes in the course of a federal fiscal year until it has first paid the annual debt service on all outstanding GARVEEs. As a result, ODOT typically funds the full GARVEE debt service requirement in August, several months prior to the December 15 debt service date. The typical timing for a direct GARVEE would be to request federal reimbursement several days before debt service is due, which is mid-way through the state’s fiscal year. By prefunding debt service with state revenues, ODOT can satisfy the requirement that GARVEE debt service be paid first, and begin requesting federal reimbursement for projects early in the state fiscal year.

As previously noted, payment of Title 23 funds is subject to biennial appropriation by the state legislature, a feature that is not common among GARVEE programs in other states. Ohio state law broadly prohibits agencies from spending without appropriations. Moody's views the risk of non-appropriation of funds for debt service as remote, especially in view of the requirement that debt service on the securities be provided for prior to any other uses. In addition, ODOT and the state have a long history of timely budget adoption, and the interest and principal payment dates on the bonds, June 15 and December 15, are far removed from the July 1 start of the state's fiscal biennium, offsetting risk of default caused by late budget adoption.

DEBT STRUCTURE

After the current offering, Ohio will have $882 million of GARVEE bonds outstanding. All of the Ohio Major New State Infrastructure Project Revenue Bonds are fixed-rate bonds. Principal amortizes fairly rapidly, because the bonds have been issued with final maturities of no more than 12 years. The current debt service schedule declines until maturity.

DEBT-RELATED DERIVATIVES
There are no derivatives associated with Ohio's Department of Transportation federal grant anticipation program.

PENSIONS AND OPEB
Pensions and OPEB are not a major rating factor under the special tax methodology.

ESG Considerations

Environmental Considerations
Environmental risks for the states sector as a whole are low due to states' large and diverse economies, revenue-raising ability, and federal government support for disaster recovery costs via FEMA. Ohio, specifically, has minimal exposure to climate risks, given its inland location and history of very manageable storm damage.

According to data from Moody's affiliate Four Twenty Seven, Ohio counties' average projected rate of change in five climate risk factors, when weighted by county GDP, is higher than average relative to the rest of the nation but lower than the riskiest states. Of the physical climate risks Four Twenty Seven evaluates, Ohio's highest exposures are to rainfall and heat stress.

In addition, Ohio's housing stock is minimally exposed to flood risk, with 4% of the state's dwelling units in 100/500 year floodplains. Rising temperatures could affect agriculture, although the sector—including forestry, fishing and hunting—constitutes just 0.7% of GDP.

Social Considerations
Social issues, such as demographics, labor force, income and education, are key influencers of Ohio's economy, governance stability, and financial and leverage trends. Ohio's key social challenges include an aging population, negative net migration and below-average labor participation. The state benefits from strong housing affordability. For more information on demographics and social factors, please see the Economy section of the State of Ohio credit opinion.

Governance Considerations
Ohio's overall governance and constitutional framework are strong, and the state has a high degree of flexibility to raise revenues and cut expenditures when needed. The state constitution has no revenue raising caps or mandated spending levels, and tax increases require only a simple majority vote. In addition, the governor has the ability to reduce appropriations through executive orders, allowing for quick budget corrections when revenues decline. As discussed above, Ohio also has above-average flexibility to change pension and OPEB benefits to manage long-term liabilities.

Ohio has strengthened its statutory requirements for its budget stabilization fund to reduce the impact of unanticipated budget events, however maintains the flexibility to reduce or defer contributions. The state's statutory targets for the budget stabilization fund and the general revenue fund are 8.5% and 0.5% of the prior year's general revenue fund revenues (state and federal sources), respectively. Statute requires the state to deposit general revenue fund surpluses in excess of 0.5% into the budget stabilization fund, which generally accelerates reserve restoration. However, the legislature retains the flexibility to divert surpluses for other uses, as it has several times since the recession ended.

The state's budget and financial management is strong, as evidenced by its positive financial performance and budget stabilization fund replenishment. However, the state's governance framework does not require consensus revenue forecasting, or publication of longterm forecasts of future debt, financial or economic performance.

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