

RATING METHODOLOGY

Table of Contents:

INTRODUCTION	1
SCOPE OF THIS METHODOLOGY	2
SECTOR OVERVIEW	2
SCORECARD FRAMEWORK	3
DISCUSSION OF THE SCORECARD FACTORS	4
FACTOR: LEVERAGE (30% WEIGHT)	10
NOTCHING FACTORS	13
OTHER CONSIDERATIONS	17
ASSIGNING ISSUER-LEVEL AND INSTRUMENT-LEVEL RATINGS	21
KEY RATING ASSUMPTIONS	21
LIMITATIONS	21
APPENDICES	23
MOODY'S RELATED PUBLICATIONS	45

Analyst Contacts:

CHICAGO	+1.312.706.9950
Rachel Cortez	+1.312.706.9956
<i>Associate Managing Director</i>	
rachel.cortez@moodys.com	
Tom Aaron	+1.312.706.9967
<i>Vice President – Senior Credit Officer</i>	
thomas.aaron@moodys.com	
DALLAS	+1.214.220.4350
Sarah Jensen	+1.214.979.6846
<i>Assistant Vice President – Analyst / RPO</i>	
sarah.jensen@moodys.com	
NEW YORK	+1.212.553.1653
Alfred Medioli	+1.212.553.4173
<i>Senior Vice President / Manager / RPO</i>	
alfred.medioli@moodys.com	
Naomi Richman	+1.212.553.0014
<i>Senior Vice President</i>	
naomi.richman@moodys.com	

>>contacts continued on the second-to-last page

US K-12 Public School Districts Methodology

Introduction

In this rating methodology, we explain our general approach to assessing credit risk for US public school districts that provide education or educational services, typically from pre-kindergarten or kindergarten through 12th grade (K–12), including the qualitative and quantitative factors that are likely to affect rating outcomes in this sector.

We discuss the scorecard used for this sector. The scorecard¹ is a relatively simple reference tool that can be used in most cases to approximate credit profiles in this sector and to explain, in summary form, many of the factors that are generally most important in assigning issuer-level ratings to issuers in this sector. The scorecard factors may be evaluated using historical or forward-looking data or both.

We also discuss other considerations, which are factors that are assessed outside the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. In addition, some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.² Furthermore, since ratings are forward-looking, we often incorporate directional views of risks and mitigants in a qualitative way.

As a result, the scorecard-indicated outcome is not expected to match the actual rating for each issuer.

Our presentation of this rating methodology proceeds with (i) the scope of this methodology; (ii) a sector overview; (iii) the scorecard framework; (iv) a discussion of the scorecard factors; (v) other considerations not reflected in the scorecard; (vi) the assignment of issuer-level and instrument-level ratings; (vii) methodology assumptions; and (viii) limitations. In Appendix A, we describe how we use the scorecard to arrive at a scorecard-indicated outcome. Appendix B shows the full view of the scorecard factors, sub-factors, weights and thresholds. Appendix C describes our approach for assigning instrument ratings for K–12 school districts.

¹ In our methodologies and research, the terms "scorecard" and "grid" are used interchangeably.

² A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Scope of This Methodology

This methodology applies to US public school districts that provide public education directly to students, typically from pre-kindergarten or kindergarten through 12th grade (K-12) or a subset of grades within this range. The entities rated under this methodology may operate as comprehensive K-12 school districts or as specialized or vocational schools. School districts rated under this methodology are operationally independent from a city or county government and have the power to issue debt on their own behalf or through a dedicated financing vehicle.

This methodology also applies to school district-related units, including entities or sub-districts created to issue debt or debt-like obligations on behalf of a school district. Such related units include school districts that no longer educate students but have debt outstanding. Publicly managed charter schools, also called dependent charter schools, are also rated under this methodology.

Privately managed K-12 charter schools, which typically receive public funding, are rated under a separate methodology.³ Independent (private) schools, whose primary funding sources are private tuition or charitable giving and endowments, are also rated under a separate methodology. This methodology also does not apply to colleges or universities, nor does it apply to school districts that are operating units of city or county governments and that do not issue their own debt. State school district enhancement programs, such as state aid intercepts, and the enhanced ratings of financings that benefit from such programs, are also rated under separate methodologies.

The methodology does not apply to school district special tax and special assessment obligations, which are rated under separate methodologies.

Sector Overview

In the US, a public school district is typically a governmental entity that has taxing authority and provides elementary or secondary school education within a defined geographic boundary. K-12 education is a primary mission of state government; most states delegate this responsibility to local school districts while mandating or strongly influencing their school districts' curriculum, revenue-raising ability and spending priorities.

Although school districts are typically autonomous,⁴ their institutional frameworks are established and defined by the state's constitution, laws or court decisions. School district operating revenue is typically a combination of state aid and locally sourced revenue.

Some of the school districts covered in this methodology provide education but do not have taxing authority. They instead receive all of their operating revenue from other local governments or the state.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

³ A link to a list of sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

⁴ Hawaii is an exception. It provides K-12 education directly and has no local school districts. In some other states, K-12 education is generally provided by departments of cities or counties rather than by stand-alone school districts.

Scorecard Framework

The scorecard in this rating methodology is composed of four factors, most of which comprise sub-factors. The scorecard also includes five notching factors, which may result in upward or downward adjustments in half-notch or whole-notch increments to the preliminary outcome.

EXHIBIT 1

US K-12 Public School Districts Scorecard Overview

Factor	Factor Weighting*	Sub-factor	Sub-factor Weighting
Economy	30%	Resident Income (MHI Adjusted for RPP / US MHI)†	10%
		Full Value per Capita (Full Valuation of the Tax Base / Population)	10%
		Enrollment Trend (Three-Year CAGR in Enrollment)‡	10%
Financial Performance §	30%	Available Fund Balance Ratio (Available Fund Balance / Operating Revenue)	20%
		Net Cash Ratio (Net Cash / Operating Revenue)	10%
Institutional Framework	10%	-- **	10%
Leverage	30%	Long-term Liabilities Ratio ((Debt + ANPL+ Adjusted Net OPEB) / Operating Revenue)††	20%
		Fixed-Costs Ratio (Adjusted Fixed Costs / Operating Revenue)	10%
Total	100%		100%

Preliminary Outcome

Notching Factor	Notching Range
Additional Strength in Local Resources	0 to +2
Limited Scale of Operations	-1 to 0
Weak Financial Reporting	-2 to 0
Potential Cost Shift to or from the State	-1 to +1
Potential for Significant Change in Leverage	-2 to +1.5

Scorecard-Indicated Outcome

*Factor weights shown in this table reflect standard weights. As described in Appendix A, we apply overweighting when scores are low.

†MHI stands for median household income. RPP stands for regional price parity.

‡CAGR stands for compound annual growth rate.

§Where available, we use data from financial statements based on the modified accrual accounting method to calculate or estimate these metrics.

**This factor has no sub-factors.

††ANPL stands for adjusted net pension liabilities. OPEB stands for other post-employment benefit liabilities.

Source: Moody's Investors Service

Please see Appendix A for general information about how we use the scorecard and for a discussion of scorecard mechanics. The scorecard does not include or address every factor that a rating committee may consider in assigning ratings in this sector. Please see the "Other Considerations" and "Limitations" sections.

Discussion of the Scorecard Factors

In this section, we explain our general approach for scoring each scorecard factor or sub-factor, and we describe why they are meaningful as credit indicators.

Factor: Economy (30% Weight)

Why It Matters

A school district's economy provides important indications of the school district's capacity to generate revenue at the local level.

This factor comprises three quantitative sub-factors:

Resident Income: Median Household Income (MHI) Adjusted for Regional Price Parity (RPP) / US MHI

The ratio of adjusted MHI of a school district to the MHI of the US provides an indication of the relative strength of a school district's capacity to generate revenue at the local level. A community with relatively high MHI usually has a strong economy and capacity to fund the school district through local revenue sources, including property taxes. Higher-income communities also support growth in the commercial and service sectors of the local economy.

We use MHI to compare resident income across school districts because this statistic includes the income of all residents of a housing unit regardless of relationship, including families, single persons living alone and unrelated roommates. Adjusting MHI for RPP is important because it allows for comparability across the US by adjusting for regional differences in the cost of living. RPP compares the average prices paid by consumers in a region of the US to the national average.

Full Value per Capita: Full Valuation of the Tax Base / Population

The ratio of the full valuation of the property tax base to the population of the school district provides another indication of the relative strength of a school district's capacity to generate revenue, but from a different perspective. Ad valorem property taxes are a key revenue source for many school districts. This ratio is an important indicator of a school district's capacity to generate revenue to the extent it can levy taxes on real estate values, including the value of properties that may augment the tax base without adding to costs associated with student enrollment, such as vacation homes and commercial and industrial properties.

Enrollment Trend: Three-Year Compound Annual Growth Rate (CAGR) in Enrollment

The trend in student enrollment typically indicates a school district's ability to attract families with school-aged children. Operating revenue for most school districts is directly or indirectly tied to enrollment. The student enrollment trend may indirectly influence a community's willingness to support a school system with tax or other revenue.

Moderately increasing enrollment is an indicator of credit strength. School districts with moderate enrollment growth usually benefit from strong local support for the funding of school programs. Stable enrollment is also an indicator of credit strength, although to a lesser degree, because it provides predictability in operating budgeting and long-term capital planning.

Rapid enrollment growth sometimes contributes to financial or operating challenges. For example, steep increases in enrollment may strain a school district's budget, require the use of cash on hand to pay for new services or require debt issuance to build new classrooms to quickly accommodate a rising number of students. Expenditures may begin to increase before a school district realizes the revenue growth that typically follows a rapid increase in enrollment.

Steep enrollment declines can drive credit deterioration if revenue stagnates or declines at a faster pace than the school district can reduce expenditures, especially fixed costs. Because enrollment figures are incorporated into most state funding formulas, negative enrollment trends result in funding declines for many school districts. Some school districts have the legal ability to make up lost state revenue by raising local taxes; however, with declining enrollment, a school district may have a smaller population to tax or may have weaker local political support for funding K-12 education.

How We Assess It for the Scorecard

Scoring for this factor is based on three quantitative sub-factors: Resident Income, Full Value per Capita and Enrollment Trend.

RESIDENT INCOME — MHI ADJUSTED FOR RPP / US MHI:

The numerator is the MHI of a school district, adjusted for RPP in the school district's metropolitan statistical area (MSA). For school districts outside of an MSA, we adjust based on the respective state's statewide non-MSA RPP. The denominator is US MHI. Where available, we use the American Community Survey (ACS) from the US Census Bureau or any successor report as our source of MHI data. Where school district data is not available, we typically use the relevant county or city MHI data. The US Bureau of Economic Analysis is typically our source for RPP data.

FULL VALUE PER CAPITA — FULL VALUATION OF THE TAX BASE / POPULATION:

The numerator is the full market valuation of taxable property in the school district, and the denominator is the population of the school district.

For the numerator, we use the full market valuation reported by each school district or by the state or local government in which the school district is located. Full market valuation is often calculated as a multiple of assessed value or of the book value of properties in a school district, but calculation methods vary by state. For the denominator, if a school district's population is not reported publicly, we typically use the population of the relevant municipality(ies) or an applicable portion thereof.

ENROLLMENT TREND — THREE-YEAR COMPOUND ANNUAL GROWTH RATE IN ENROLLMENT:

We use the three-year compound annual growth rate (CAGR) of student enrollment (based on actual student headcount).⁵ We use data published by the state, where available, or data from the issuer if state data are unavailable. As shown in the table below, a school district with moderate growth receives a higher score for this sub-factor than a school district with either decreasing enrollment or steep increases in enrollment.

⁵ For school districts that no longer directly educate students but have debt outstanding, the enrollment trend is zero. For school districts that operate charter schools, we typically include student enrollment at these dependent charter schools. For school districts with charter schools within their geographic boundaries that operate independently of the school districts, we typically exclude student enrollment at charter schools.

FACTOR

Economy (30%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Resident Income (MHI Adjusted for RPP / US MHI)* ¹	10%	≥ 120%	100 - 120%	80 - 100%	65 - 80%	50 - 65%	35 - 50%	20 - 35%	< 20%
Full Value per Capita (Full Valuation of the Tax Base / Population)* ²	10%	≥ \$180,000	\$100,000 - \$180,000	\$60,000 - \$100,000	\$40,000 - \$60,000	\$25,000 - \$40,000	\$15,000 - \$25,000	\$9,000 - \$15,000	< \$9,000
Enrollment Trend (Three-Year CAGR in Enrollment)* ³	10%	2 - 4%	0 - 2% or > 4%	(2) - 0%	(5) - (2)%	(8) - (5)%	(11) - (8)%	(14) - (11)%	< (14)%

*1 For the linear scoring scale described in Appendix A, the Aaa endpoint value is 200%. A value of 200% or better equates to a numeric score of 0.5. The Ca endpoint value is 10%. A value of 10% or worse equates to a numeric score of 20.5.

*2 For the linear scoring scale, the Aaa endpoint value is \$400,000. A value of \$400,000 or better equates to a numeric score of 0.5. The Ca endpoint value is \$7,500. A value of \$7,500 or worse equates to a numeric score of 20.5.

*3 The Aaa category has a V-shaped linear scoring scale, with 3% as the best possible score. A value of 2% equates to a numeric score of 1.5. A value of 3% equates to a numeric score of 0.5. A value of 4% equates to a numeric score of 1.5. A value of 6% or higher equates to a numeric score of 4.5. The Ca endpoint value is (17)%. A value of (17)% or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Factor: Financial Performance (30% Weight)**Why It Matters**

The financial performance of a school district is important because it greatly influences the school district's ability to meet existing financial obligations and its flexibility to adjust to new obligations or unexpected contingencies, such as unanticipated revenue shortfalls or cost increases.

This factor comprises two quantitative sub-factors:

Available Fund Balance Ratio: Available Fund Balance / Operating Revenue

The ratio of available fund balance to operating revenue provides a highly valuable indication of whether a school district's resources would be sufficient to bridge temporary budget imbalances. A school district's available fund balance represents the resources expected to be available to fund operating needs and unforeseen contingencies, including, for example, stress from a steep change in enrollment. The available fund balance includes cash as well as receivables, payables and other current assets and liabilities that are likely to become cash inflows or outflows in the short term. Comparing available fund balance to operating revenue provides insights into the strength of resources relative to the scale of the school district's operations.

Net Cash Ratio: Net Cash / Operating Revenue

While the available fund balance and net cash amounts of a school district are usually related, the ratio of net cash to operating revenue provides another important perspective into financial flexibility. Net cash is a school district's most readily available liquid resource. Accruals can cause the two measures to diverge, because the available fund balance reflects receivables, payables, and other current assets and liabilities that are not incorporated into net cash. For example, a large receivable for taxes or state aid could lead to a high available fund balance position, but the school district could have a weak cash position; in such cases, the school district's net cash position may provide a better indicator of its immediate financial flexibility. Alternatively, a school district could have a high net cash position because it has deferred certain expenditures into the next fiscal year. In this case, its lower available fund balance reflects the payable that will eventually reduce the net cash position.

How We Assess It for the Scorecard

Scoring for this factor is based on two quantitative sub-factors: Available Balance Ratio and Net Cash Ratio.

AVAILABLE FUND BALANCE RATIO — AVAILABLE FUND BALANCE / OPERATING REVENUE:⁶

The numerator is the school district's available fund balance, which equals operating fund assets minus operating fund liabilities, adjusted for unavailable portions of a fund's total fund balance. We also adjust the available fund balance for near-term non-operating obligations. The denominator is operating revenue.

Available fund balance comprises the net assets of funds that we consider available for operating purposes. This typically comprises the general fund and debt service fund, and may also include certain other funds. We typically include the available portion of the fund balance⁷ in these other funds if the majority of the fund's revenue or expenditures are allocated to the provision of core school services and are not restricted for special use.

In our calculation or estimation of available fund balance, we include the committed, assigned and unassigned portions of the fund balances of the applicable funds, and we may also include portions of debt service funds that are in the non-spendable or restricted categories if in our view those amounts are usable for operating purposes. Long-term assets, such as capital assets, and long-term liabilities, such as debt and retirement liabilities, are not included in calculating or estimating available fund balance.

For school districts that do not report financials on a modified accrual basis, we cannot calculate or estimate available fund balance. In these cases, scoring for this sub-factor is based on net cash as a proxy for available fund balance. For these school districts, we also apply downward notching for weak financial reporting, as described in the "Notching Factors" section.

The ratio's denominator is the total annual revenue of funds that we consider to be operating funds. We typically include revenue from asset sales and grants in operating revenue if that revenue is reported in an operating fund.⁸

NET CASH RATIO — NET CASH / OPERATING REVENUE:

The numerator is net cash (cash and liquid investments in operating funds minus short-term debt issued for operations and maturing within one year, such as cash flow notes, tax anticipation notes or state aid anticipation notes). The denominator is operating revenue.

⁶ For the Financial Performance sub-factors, we include amounts related to charter schools where those schools are operationally dependent on the school district. We exclude amounts related to operationally independent charter schools where those schools are either not included in the school district's financial statements or are presented separately from the school district's operating funds (e.g., as a component unit). Where charter schools are operationally independent but their financials are embedded in those of the school district, we typically include amounts related to charter schools in the metrics, and where we consider these amounts to be material, we typically assess the impact qualitatively.

⁷ We consider the substance (i.e., the availability of the assets in the fund to the school district) rather than the designation in the financial statement. Typically, however, restricted and non-spendable amounts are excluded.

⁸ Examples of revenue that we exclude from our calculation or estimation of operating revenue include proceeds from the issuance of long-term bonds or short-term notes.

FACTOR

Financial Performance (30%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Available Fund Balance Ratio (Available Fund Balance / Operating Revenue) ^{*4}	20%	≥ 25%	17.5 - 25%	10 - 17.5%	5 - 10%	0 - 5%	(5) - 0%	(10) - (5)%	< (10)%
Net Cash Ratio (Net Cash / Operating Revenue) ^{*5}	10%	≥ 25%	17.5 - 25%	10 - 17.5%	5 - 10%	0 - 5%	(5) - 0%	(10) - (5)%	< (10)%

*4 For the linear scoring scale, the Aaa endpoint value is 50%. A value of 50% or better equates to a numeric score of 0.5. The Ca endpoint value is (17.5)%. A value of (17.5)% or worse equates to a numeric score of 20.5.

*5 For the linear scoring scale, the Aaa endpoint value is 50%. A value of 50% or better equates to a numeric score of 0.5. The Ca endpoint value is (17.5)%. A value of (17.5)% or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Factor: Institutional Framework (10% Weight)**Why It Matters**

A school district's institutional framework is important because it prescribes how the bulk of a school district's operating revenue is determined. This framework affects a school district's ability to match recurring revenues with operating expenditures.⁹

A school district's revenue framework is established by its state. Some states give all or some of their local communities broad latitude in determining the bulk of school district operating revenue. For these school districts, operating revenue typically comes from property taxes, which are subject to the approval of the local school board, the board of another local government or local voters. Nonetheless, local revenue may be subject to local tax rate caps or levy limits. Other forms of local revenue include sales taxes, income taxes and various fees, although these are less common.

Other states give local communities limited ability to determine the bulk of school district operating revenue. For these school districts, operating revenue typically comes from a mix of state aid and local taxes. State aid to school districts is essentially a transfer payment from the state government. For school districts in these states, even if local property taxes represent the bulk of operating revenue, the state largely or completely determines the amount of local taxes the school districts may levy. In stipulating the mix of state and local funding for local districts, states often employ formulas that consider enrollment, local resources, student needs and other demographic considerations.

In one common type of framework in which the state determines the bulk of a school district's operating revenue, the state requires school districts to levy taxes at a specific rate (also called a mill rate) to generate revenue toward a state-established per pupil amount. State aid makes up the difference, if any, between the locally generated revenue and the per pupil amount.

In most states, even where the state determines the bulk of operating revenue, school districts usually have some ability to generate supplemental local revenue, subject to local voter approval, tax rate caps, levy limits or established per pupil amounts. In other states, the state determines the bulk of operating revenue and does not allow the school district the ability to generate any significant supplemental operating revenue.

⁹ School districts' operating expenditures typically include the following types of core, recurring costs: salaries and benefits for instructional and support staff, routine operating and maintenance costs and debt service. Examples of nonoperating expenses include spending on capital projects.

In some cases (e.g., certain special education and vocational-technical entities), school districts have no direct taxation power. Instead, the main local source of revenue is a tuition-like charge to the towns or school districts of origin of the students served.

How We Assess It for the Scorecard

In our assessment of this qualitative factor, we consider whether the state allows the bulk of a school district's operating revenue to be determined at the local level or if the state itself determines the bulk of a school district's operating revenue. We also consider the limits and hurdles imposed on the school district's ability to raise revenue. Most school districts in a given state typically receive the same score for this factor, except where the revenue framework of some school districts in the state is materially different from others.

If the state allows the bulk of the school district operating revenue to be determined at the local level, we consider whether revenue increases are subject only to the approval of the school district board, or require the approval of local voters or another local government. If approval is required by local voters or the board of another local government, we consider how regularly such requests are approved. We also consider the extent of the limitations on the school district's ability to raise local revenue absent such approval.

If the state determines the bulk of a school district's operating revenue, we consider the extent to which the state provides or allows for regular revenue increases. This consideration applies whether the revenue is generated from state or local sources. We also assess the state's track record of timely revenue disbursements, if applicable. We also consider whether the state allows the school district to supplement the bulk of its state-determined operating revenue with locally determined operating revenue. Scoring is based on historical trends and is also typically forward-looking. We may incorporate our expectations for future funding into our assessment, based on our knowledge of the state's financial trajectory and budgetary priorities. We typically perform this assessment on a statewide basis, unless a potential state action affects only a subset of districts, and we typically conduct the assessment once a year.

FACTOR

Institutional Framework (10%)

Institutional Framework	Aaa	Aa	A	Baa	Ba	B
Locally Determined Revenue Framework: The state allows bulk of the school district's operating revenue to be determined at the local level.	The bulk of operating revenue is subject only to the approval of the school district board.	The bulk of operating revenue is subject to the approval of local voters or another local government; and school district requests for revenue increases are regularly approved; or there is room under any limitations in the local tax rate or local levy amount that apply to the bulk of operating revenue.	The bulk of operating revenue is subject to the approval of local voters or another local government; and school district requests for revenue increases are sometimes approved; or there is limited room under any limitations in the local tax rate or local levy amount that apply to the bulk of operating revenue.	The bulk of operating revenue is subject to the approval of local voters or another local government; and school district requests for revenue increases are rarely approved; or there is no room under any limitations in the local tax rate or local levy amount that apply to the bulk of operating revenue.	Not applicable.	Not applicable.
State-Determined Revenue Framework: The state determines the bulk of the school district's operating revenue, which is generated from state or local sources.	The state provides or allows for regular, sizable increases to the bulk of the school district's revenue; the state never decreases, holds flat or delays the school district's revenue; and the school district can generate meaningful additional locally determined operating revenue.	The state provides or allows for regular, predictable increases to the bulk of the school district's revenue; and the school district can generate meaningful additional locally determined operating revenue.	The state provides or allows for increases to the bulk of the school district's revenue, although the timing or amount of the increases may vary or the state sometimes holds this revenue flat, modestly reduces this revenue or occasionally delays disbursements; and the school district can generate meaningful additional locally determined operating revenue.	The state provides or allows for increases to the bulk of the school district's revenue, although the timing or amount of the increases may vary or the state sometimes holds this revenue flat, modestly reduces this revenue or occasionally delays disbursements; or the school district cannot generate meaningful additional locally determined operating revenue.	The state rarely provides or allows for increases to the bulk of the school district's revenue, sometimes reduces revenue without advance notice or often delays disbursements for prolonged periods.	The state does not provide or allow for increases to the bulk of the school district's revenue and frequently reduces revenue without advance notice or delays disbursements for more than one fiscal year.

Source: Moody's Investors Service

Factor: Leverage (30% Weight)**Why It Matters**

Leverage measures provide important indications of a school district's capacity to invest in capital assets and pay annual fixed costs, including debt service, while meeting its core responsibility to provide educational services.

Debt, unfunded pension liabilities and unfunded other post-employment benefit (OPEB)¹⁰ liabilities represent the primary long-term financial obligations of a school district. The more leveraged a school district is, the less flexibility it has to meet debt service and other obligations. High and rising fixed debt service and retirement benefit costs can crowd out other operating priorities, reducing a school district's

¹⁰ OPEBs most often are retiree healthcare benefits.

ability to deliver on its core service mission. As a school district's financial capacity to deliver on its core service mission declines, the risk rises that it will default and seek to restructure its debt. High leverage may also diminish a school district's access to credit markets either due to statutory debt limits or a lack of investor willingness to extend credit.

This factor comprises two quantitative sub-factors:

Long-term Liabilities Ratio: (Debt + Adjusted Net Pension Liabilities + Adjusted Net OPEB Liabilities) / Operating Revenue

The ratio of debt, adjusted net pension liabilities (ANPL) and adjusted net OPEB liabilities to operating revenue is an important indicator of leverage.

Fixed-Costs Ratio: Adjusted Fixed Costs / Operating Revenue

The ratio of adjusted fixed costs to operating revenue provides an indication of the financial burden of a school district's debt service, pension and OPEB obligations relative to its operating revenue and, by proxy, of the percentage of revenue that remains available for the school district to provide core educational services.

How We Assess It for the Scorecard

Scoring for this factor is based on two quantitative sub-factors: the Long-term Liabilities Ratio and the Fixed-Costs Ratio.

LONG-TERM LIABILITIES RATIO — (DEBT + ANPL + ADJUSTED NET OPEB LIABILITIES) / OPERATING REVENUE:

The numerator is the sum of a school district's direct gross debt outstanding, ANPL and adjusted net OPEB liabilities. The denominator is operating revenue.

A school district's direct gross debt includes its long-term bonds and other forms of long-term debt, including general obligation bonds; general promises to pay; lease-backed, appropriation and moral obligations; bond anticipation notes; special tax debt; loans from the state; and leases classified as debt under Generally Accepted Accounting Principles (GAAP). It includes all forms of debt that are supported by state aid or other statewide revenues unless the debt appears as a liability on the state or another government's long-term balance sheet. A school district's direct gross debt also includes any debt of another entity for which it has provided a guarantee. Direct gross debt includes debt that is supported by a dedicated revenue stream (self-supporting debt) if this debt is ultimately the obligation of the school district. Direct gross debt excludes short-term cash flow notes that are considered liabilities when calculating available fund balance but includes short-term debt that does not reduce available fund balance, such as bond anticipation notes as well as the current portion of long-term debt.

For a description of how we calculate or estimate ANPL and adjusted net OPEB liabilities, please see our cross-sector methodology that describes our adjustments to pension and OPEB data reported by Governmental Accounting Standards Board (GASB) issuers.¹¹

FIXED-COSTS RATIO — ADJUSTED FIXED COSTS / OPERATING REVENUE:

For any period, the numerator is the sum of a school district's implied debt service, its pension tread water indicator, and its OPEB contributions. The denominator is operating revenue. The three components of the numerator are described below.

¹¹ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Implied Debt Service

A school district's implied debt service represents the annual cost to amortize its long-term debt over 20 years with level payments. We use a 20-year amortization period to reflect the typical composite useful life of capital assets financed by school districts, which range from assets with long expected useful lives, such as school buildings, to assets with short useful lives, such as school buses and technology improvements. The 20-year amortization period also provides a general composite of the weighted average maturity of a school district's debt outstanding.

We use a school district's implied debt service rather than its actual debt service as an input to the fixed-costs ratio for two key reasons. First, implied debt service provides a comparable measure of annual debt carrying costs across school districts. Using actual debt service in the ratio could have the effect of rewarding the backloading of debt amortization — in these cases, the current year ratio would understate the school district's growing fixed cost burden. Using actual debt service could also penalize more rapid debt amortization, because the current fixed-costs ratio would appear relatively weak. Second, implied debt service avoids potentially misleading volatility in actual debt service payments that can be caused by refunding (i.e., debt refinancing) activity.

We calculate or estimate implied debt service in several steps (see the exhibit below):

- » **Step 1:** We assign a common implied interest rate to all school districts, approximately annually. We base the implied interest rate each year upon a 10-year rolling average of a high-grade municipal bond index, such as the Bond Buyer 20-bond GO index or a comparable index, as of the end of the prior calendar year. (see line A).
- » **Step 2:** A level-dollar amortization divisor is calculated, using a 20-year period and the implied interest rate calculated in Step 1 (see line B).
- » **Step 3:** The school district's debt outstanding at the beginning of the fiscal year (i.e., its outstanding debt at the end of the prior year) is divided by the amortization divisor calculated in Step 2. The result is the implied debt service (see lines C and D).

EXHIBIT 2

Example Calculation of Implied Debt Service

Line item	Example School District Information	Value	Typical Source
A	Implied interest rate (10-year rolling average as of end of prior calendar year)	3.90%	Bond Buyer 20-bond GO or comparable index
B	Amortization divisor	13.716	$=\{1 - [1 / (1 + A)^{20}]\} / A$
C	Debt outstanding, end of prior fiscal year	\$1,000,000	Audited financial statements
D	Implied debt service	\$72,910	$= C / B$

Source: Moody's Investors Service

Pension Tread Water Indicator

The pension tread water indicator represents our estimate of the pension contribution necessary to prevent reported unfunded pension liabilities from growing, year over year, in nominal dollars, if all actuarial assumptions are met.¹²

¹² For more information about our adjustments, see our cross-sector methodology that describes our adjustments to pension and OPEB data reported by GASB issuers. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

OPEB Contributions

The input to the fixed-costs ratio for OPEBs is a school district's actual contribution in a given period, typically the fiscal year. In the event a school district issues pension or OPEB funding bonds, the deposit of the proceeds into a retirement system or trust is not considered a contribution in our analysis of fixed costs, nor in our analysis of pension contributions relative to the pension tread water indicator.

FACTOR

Leverage (30%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Long-term Liabilities Ratio ((Debt + Adjusted Net Pension Liabilities + Adjusted Net Other Post-Employment Benefits) / Operating Revenue) ^{*6}	20%	≤ 125%	125 - 250%	250 - 400%	400 - 550%	550 - 700%	700 - 850%	850 - 1,000%	> 1,000%
Fixed-Costs Ratio (Adjusted Fixed Costs / Operating Revenue) ^{*7}	10%	≤ 15%	15 - 20%	20 - 25%	25 - 30%	30 - 35%	35 - 45%	45 - 55%	> 55%

*6 For the linear scoring scale, the Aaa endpoint value is 0%. A value of 0% or better equates to a numeric score of 0.5. The Ca endpoint value is 1,250%. A value of 1,250% or worse equates to a numeric score of 20.5.

*7 For the linear scoring scale, the Aaa endpoint value is 0%. A value of 0% or better equates to a numeric score of 0.5. The Ca endpoint value is 65%. A value of 65% or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Notching Factors

The scorecard includes notching factors. Our assessment of these notching factors may result in upward or downward adjustments to the preliminary outcome that results from the four weighted scorecard factors. Adjustments may be made in half-notch or whole-notch increments based on the notching factors listed in the table below.

In aggregate, the notching factors can result in a total of up to four and one-half upward notches or up to six downward notches from the preliminary outcome to arrive at the scorecard-indicated outcome. In cases where we consider that the credit weakness or credit strength represented by a notching factor, or by these factors in aggregate, is greater than the scorecard range, we incorporate this view into the school district's rating, which may be different from the scorecard-indicated outcome.

EXHIBIT 3

Notching Factor Table

Notching Factor	Notching Range
Additional Strength in Local Resources	0 to +2
Limited Scale of Operations	-1 to 0
Weak Financial Reporting	-2 to 0
Potential Cost Shift to or from the State	-1 to +1
Potential for Significant Change in Leverage	-2 to +1.5

Source: Moody's Investors Service

Additional Strength in Local Resources**Why It Matters**

For some school districts, very high aggregate property values or extremely high resident income levels may provide credit strength that is not fully reflected in the Resident Income or Full Value per Capita sub-factors.

School districts with very high property values have greater revenue-generating capacity than school districts with lower property values but similar household income levels. For example, the values of second homes and commercial properties augment the tax base without associated student enrollment, a strength that may not be indicated by adjusted MHI.

How We Assess It for the Scorecard

In assessing this notching factor, we consider the following two metrics. Notching for this factor is cumulative. Notching for this factor is only upward because extraordinarily weak adjusted MHI and Full Value per Capita are overweighted in the scorecard.¹³

- » **Very High Full Value per Capita.** We use the Full Value per Capita sub-factor. This notching factor results in an adjustment of up to one upward notch for school districts whose ratios are high relative to peers. We apply a one-half upward notch if the full value per capita is \$400,000 to \$800,000 and one upward notch if it is greater than \$800,000.
- » **Extremely High Adjusted MHI.** We use the Resident Income sub-factor (the ratio of MHI (adjusted for RPP) to US MHI). We apply a one-half upward notch if the value is 200% to 250%. We apply one upward notch if the value is greater than 250%.

Limited Scale of Operations

Why It Matters

Small scale is important because school districts with very small operating budgets are at greater risk of a budgetary disruption than larger school districts, which have greater economies of scale. Event risks, such as an unexpected capital need, an adverse litigation outcome or the transfer of a small number of students out of the school district, can disrupt the budget of a school district whose scale of operations is limited.

How We Assess It for the Scorecard

Scale is assessed using total operating revenue. This notching factor results in a downward adjustment of one-half notch for school districts whose operating revenue is between \$4 million and \$8 million and one notch for school districts whose operating revenue is less than \$4 million. This notching factor does not result in upward notching because large size on its own does not reduce credit risk.

Weak Financial Reporting

Why It Matters

Where there are weaknesses in the quality of financial statements, ratios may not accurately reflect all elements of the school district's financial position, potentially understating risk.

How We Assess It for the Scorecard

Notching for this factor is applied cumulatively as explained below and is capped at two downward notches.

For school districts that do not report non-cash assets and liabilities including receivables and payables, typically because they report on a cash basis, we apply one downward notch to reflect the risk that net cash may not be an accurate representation of the school district's available fund balance.

For school districts whose financial statements do not comply with GASB rules for the reporting of pension and OPEB liabilities, we may use estimates for certain pension and OPEB characteristics. We typically estimate pension liabilities based on partial information where we have data on one pension plan but not on the issuer's other plans. In such cases, we apply a one-half downward notch to reflect that adjusted liability

¹³ Overweighting is described in Appendix A, "Determining the Overall Scorecard-Indicated Outcome."

values may be an imprecise reflection of the issuer's actual liabilities. We typically estimate OPEB liabilities based on partial information where we have data on one OPEB plan but not on the issuer's other plans, and in such cases, we apply a one-half downward notch. We typically use a value of zero for a missing OPEB liability input where a school district does not report this information, and in such cases, we typically apply a one-half downward notch for weak financial reporting.

For school districts whose financial statements do not comply with GASB rules for the reporting of pension costs, we may not have sufficient information to calculate or estimate a pension tread water indicator. In these cases, we use actual pension contributions to calculate the Fixed-Costs Ratio sub-factor, and we apply a one-half downward notch to reflect that actual pension contributions may be an imprecise reflection of pension funding needs. Pension system financial reporting, which we often rely on to calculate the tread water indicator, can lag behind a school district's own financial reporting. In these cases, we may rely on a fixed-costs ratio that incorporates the tread water indicator from the prior year, but would not apply downward notching. We typically use a value of zero for a missing OPEB contribution input where a school district provides OPEB benefits but does not report this information, and then apply a one-half downward notch for weak financial reporting.

For school districts that do not report gross capital asset values and depreciation, we do not have sufficient information to assess the Potential for Significant Change in Leverage notching factor, and we apply a one-half downward notch.

Potential Cost Shift to or from the State

Why It Matters

In some cases, the state has recently taken or we expect that it may take future action to shift certain costs to a school district or may absorb costs on its behalf, detracting from or adding to the school district's financial flexibility. These shifts can affect our view of a school district's credit strength, even where not yet reflected in scorecard metrics.

A state is more likely to pass down costs during times of state budgetary stress, and is more likely to provide additional funding when it is in a relatively strong credit position or has a political incentive to support certain local programs. For example, a state could shift pension costs to school districts by requiring them to pay a higher proportion of annual pension contributions. As another example, a state could appropriate less money than in previous years for capital work or for certain forms of state aid. Conversely, states on occasion may take on a greater proportion of pension costs or capital funding, or provide additional aid.

How We Assess It for the Scorecard

In assessing the likelihood of a state shifting material costs toward or away from school districts in the state, we consider the state's budgetary position, spending priorities and political incentives to provide or reduce financial support for education and school districts. We also consider whether any shift in material costs is likely to be temporary or long-lasting, and whether it indicates a secular trend. We typically perform this assessment on a statewide basis, unless a potential state action affects only a subset of districts, and we typically conduct the assessment once a year.

This notching factor may result in a downward or upward adjustment of up to one notch. Where notching is applied, it is typically applied to all of a state's school districts that we expect will be affected by the cost shift.

Potential for Significant Change in Leverage

Why It Matters

The potential for a significant increase in leverage or fixed costs due to pension asset risk, slow or negative pension amortization or unmet capital needs can weaken a school district's ability to meet its obligations. These forward-looking risks may not be fully incorporated into the preliminary scorecard outcome. Alternatively, some school districts have comparatively much lower exposure to a significant change in leverage because they have no pension asset risk or have minimally depreciated capital assets.

How We Assess It for the Scorecard

Our assessment is based on the following metrics, if data are available. If data for one or more of the following metrics are not available, we would apply no notching based on the relevant metric in this notching factor and score this notching factor without those inputs. In addition, we would apply the Weak Financial Reporting notching factor, discussed above. Notching for this factor is cumulative and is capped at two downward notches or one and one-half upward notches.

- » **Pension Asset Shock Indicator (PASI).** We use the pension asset shock indicator to assess a school district's exposure to potential pension system investment losses.¹⁴ The PASI is expressed as a probability. It represents the likelihood that a school district's pension system(s) will experience investment losses in a given year that amount to 25% or more of the school district's revenue. If a school district has a PASI of 18%-23%, we notch downward by one-half notch. If a school district has a PASI of 23% or higher, we apply one downward notch.¹⁵
- » **Pension Tread Water Gap.** The pension tread water gap reflects the difference between a school district's pension tread water indicator (or contribution level)¹⁶ and its actual pension contributions. To arrive at the pension tread water gap, we use a ratio; the numerator is the pension tread water indicator minus the school district's actual pension contributions in the most recent year, and the denominator is operating revenue. If a school district's tread water gap is equal to 5%-10% of its operating revenue, we notch downward by one-half notch. We notch downward an additional one-half notch for each five-percentage-point increase in the gap (i.e., 10%-15%, 15%-20%, 20% or higher), up to a maximum of two downward notches.
- » **Defined Contribution Plan.** If the school district does not have a defined benefit plan and instead has a defined contribution or similar plan, we apply one upward notch to reflect the lack of exposure to pension risk.
- » **Capital Asset Depreciation Ratio.** We use a ratio of accumulated depreciation to gross depreciable assets in a given year. If the ratio is lower than 25%, we notch upward by one-half notch to reflect the school district's very low level of capital asset depreciation. If the ratio is equal to 25%-65%, we do not apply notching. If the ratio is 65% or higher, we notch downward by one-half notch. A ratio above 65% indicates that reinvestment in capital assets (excluding non-depreciable assets such as land and construction-in-progress) is lagging behind depreciation. A ratio above 65% is also a signal of likely future debt issuance.

¹⁴ While some school districts have their own pension system, more typically, school districts participate in a larger pension system, often statewide. For more information about the pension asset shock indicator, see our cross-sector methodology that describes our adjustments to pension and OPEB data reported by GASB issuers. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

¹⁵ While dependent on the combination of inputs, a PASI of 18% can translate to roughly a 10% likelihood of losses amounting to 50% of a sponsoring government's revenue. A PASI of 23% can translate to a roughly 15% likelihood of losses amounting to 50% of a sponsoring government's revenue, and a 5% likelihood of losses amounting to 100% of revenue.

¹⁶ For more information about the tread water indicator, see our cross-sector methodology that describes our adjustments to pension and OPEB data reported by GASB issuers. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

EXHIBIT 4

Notching Factor: Potential for Significant Change in Leverage

	Level of Notching						
	+1	+0.5	0	-0.5	-1.0	-1.5	-2.0
Notching Metric							
Pension Asset Shock Indicator (PASI)	n/a	n/a	< 18%	18% - 23%	≥ 23%	n/a	n/a
Pension Tread Water Gap	n/a	n/a	< 5%	5% - 10%	10% - 15%	15% - 20%	≥ 20%
Defined Contribution Plan	Yes	n/a	n/a	n/a	n/a	n/a	n/a
Capital Asset Depreciation Ratio	n/a	< 25%	25% - 65%	≥ 65%	n/a	n/a	n/a
						Sub-Total Before Cap	+1.5 to -3.5
						Total Factor Notching	+1.5 to -2

Source: Moody's Investors Service

Other Considerations

Ratings may reflect consideration of additional factors that are not in the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. Such factors include financial controls and the quality of financial reporting; the quality and experience of management; assessments of governance as well as environmental and social considerations; and possible interference from other levels of government. Regulatory, litigation, liquidity and technology risk as well as changes in demographic and macroeconomic trends also affect ratings.

Following are some examples of additional considerations that may be reflected in our ratings and that may cause ratings to be different from scorecard-indicated outcomes. We typically assess these additional considerations qualitatively, and we incorporate them into ratings to the extent that they are not already reflected in the scorecard-indicated outcome.

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of school districts. For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.¹⁷ Environmental considerations, such as exposure to natural disaster risk, and social considerations, such as the risk of teacher strikes, may influence credit strength. Weak or opaque governance can negatively affect a school district's performance, which can lead to an exodus of students, reduce taxpayer willingness to support the school district's revenue needs, or even lead to a takeover of the school district by the state. Conversely, very strong governance can lead to educational outcomes that foster enrollment growth or to effective measures that mitigate certain kinds of credit-negative exposures.

Economic Concentration

Economic concentration is an important consideration because school districts that rely heavily on a single taxpayer or industry are particularly vulnerable to revenue losses, especially if the industry is weak or volatile. Sometimes these losses are sudden, such as when a large local employer closes on short notice.

¹⁷ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Other Demographic Considerations

While the scorecard includes some demographic indicators, additional demographic considerations that, where material, could impact credit strength include the following: the size or age of the population, the percentage of school-age children who attend the public school district, changes in median home value, the proportion of property tax appeals or delinquencies outstanding, and changes in the local workforce or in employment opportunities.

For example, new home construction or business growth can improve a school district's revenue-generating capacity. As another example, a large university's student population may depress a community's MHI, but the university may lend stability to the local economy. In contrast, unusually high unemployment or poverty levels strain a school district's capacity to generate local revenue. If such school districts are highly dependent on state funding, they are especially vulnerable to any state funding cuts.

Competitive Considerations

Some school districts are exposed to loss of enrollment arising from competition from other schools in their region, including independent charter schools and open-enrollment public schools. In other cases, a school district may be required to fund charter schools, reducing the school district's financial flexibility.

In addition, some school districts have academic performance measures that result in competitive strengths or weaknesses. For instance, a school district with favorable standardized test scores, high-school graduation rates or state assessment rankings may have strong community support for revenue even if the MHI is relatively low.

Local Support for Public Education

Some school districts have unusually strong or weak local support for public education, evidenced by high or low voter support for school budgets, bond referenda or other measures regarding school funding. Such local support is especially important when the bulk of operating revenue is determined locally. Strong local support increases the likelihood that a school district will maintain financial stability, even during a weak state funding environment or when facing other financial challenges. Conversely, weak local support increases vulnerability to such challenges.

Unusual Strengths or Weaknesses Related to Budgets or Liquidity

Unusually volatile or unpredictable revenue sources or expenditures can result in budget imbalances and reduce fund balance and cash reserve stability. Our forward-looking view may consider recent or expected volatility in revenue or expenditures that is not already captured in the scorecard.

We also typically consider the organization's internal reserves where they are not incorporated in the scorecard-indicated outcome, material in size and free from external restrictions. In this assessment, we typically also consider the potential volatility of those reserves, and whether they are intended for non-operating uses.

In addition, revenue or expenditure timing issues may overstate or understate fund balance or cash at year end, and we may consider the issuer's financial position at other points of the year.

Management Strategy

The quality of management is an important factor supporting a school district's credit strength. Management's track record of adhering to stated plans, commitments and guidelines provides insight into management's likely future performance, including in stressed situations. Management's ability to develop and adhere to budgets that provide for capital investment while managing debt levels and unfunded retirement liabilities is another credit consideration. Also, we consider management decisions that may

aggravate or highlight credit weakness, such as deficit financings or heavy reliance on debt issuance that creates substantial exposure to forms of arbitrage risk, such as retirement obligation bonds.

Financial Controls

We rely on the accuracy of audited financial statements to assign and monitor ratings in this sector. The quality of financial statements may be influenced by internal controls, including the proper tone at the top, centralized oversight of operations, and consistency in accounting policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statements or delays in regulatory filings may indicate weaknesses in internal controls.

Extraordinary State Support

The circumstances surrounding extraordinary state support for a school district are often very situation-specific and are influenced by a state's commitment to provide ongoing support to a distressed district. In some cases, a state may provide meaningful financial or managerial support to a school district undergoing stress, thereby bolstering a weak fundamental credit profile and materially lowering the risk of a payment default. Conversely, a temporary infusion of state funds may bolster financial performance in the short term but leave the school district exposed to rapid financial deterioration if the state aid does not continue. We typically assess whether the support will be ongoing and sufficient to stabilize the school district. We also consider the associated benefits or risks of dependence on such support.

Related Local Governments

In some cases, other governments related to the school district affect the school district's credit strength. The same taxpayers that support the debt and operations of the school district typically also support the debt and operations of overlapping local government entities, such as the city and county in which the school district is located. The operating expenses and the debt, pension and OPEB burdens of these overlapping entities can elevate total tax rates or bills, thus impeding the willingness or ability of the school district to generate additional revenue, even where legally permitted to do so.

In some cases, other local governments related to the school district, such as a city or county, positively affect the school district's credit strength. For example, the local government may provide financial support or shared services to the school district as needed, or on an ongoing basis. In cases where an external government provides or is expected to provide support to a school district, we consider the materiality of the support relative to the school district's need and the likelihood that meaningful support will continue.

Some states have established regional school districts that provide education on behalf of several member towns. Some states also establish specialized regional school districts that provide special education or vocational services to multiple participating districts. Such regional or specialized school districts can face unique risks, such as a dependence on member local governments to levy and collect taxes for a large portion of operating revenue. These school districts can also face the possibility of a change in the proportionate membership of participating jurisdictions or the possibility that a member could discontinue participation in the school district.

Unusual Risk or Benefit Posed by Long-Term Liabilities

Most school districts issue fixed-rate debt that amortizes over a multi-year period. School districts that have variable-rate debt, debt with bullet maturities or capital appreciation bonds, derivatives such as interest rate swaps or other forms of debt that are subject to remarketing risk may be more exposed to liquidity demands or may require market access for refinancing, which can place downward pressure on credit quality. Liquidity and market access risks can also arise with variable-rate demand obligations and bonds that contain provisions that allow debtholders to put bonds back to the issuer. The potential adverse credit effects of variable-rate demand obligations are assessed in the context of the overall credit profile and circumstances of each issuer.

As an example, some school districts issue debt secured by an annual state apportionment of a percentage or a set amount of total state-wide sales taxes. In these cases, the level of revenue is outside the school district's direct control and depends on total sales taxes and the timing of the state's transfers to the school district; however, the school district is typically responsible for the payment of the related debt. In addition, some school districts may face material credit risk from certain long-term liabilities that are not debt or pensions, e.g., significant claims and judgments or compensated absences.

In addition to the Leverage sub-factors, we may assess the following debt features, which may strengthen or weaken a school district's overall credit quality, such as the use of derivatives, which may mitigate some risks such as exposure to short-term interest rates, but may entail other risks, such as counterparty exposures and potential collateral posting requirements. In addition, a large amount of short-term notes without sufficient offsetting liquidity can expose a school district to market access risks.

A school district that is rapidly paying off debt with recurring revenue typically has greater financial flexibility and may have a conservative financial policy. Conversely, if a school district's current debt service costs are very high and causing financial stress that is understated by the implied debt service input to the fixed costs ratio, the issuer rating may be lower than the scorecard-indicated outcome.

Outsized Contingent Liability Risk

Contingent liabilities, such as a guarantee to pay another entity's debt or manage the operation of a separate enterprise, even if that enterprise is currently self-supporting, can reduce credit strength. For example, where a school district has not regularly budgeted to pay debt service for an entity whose debt it guaranteed, a sudden call on the guarantee could impact the school district's credit strength. Other examples include a school district's operational exposure to transportation, food service or energy enterprises that are outside the school district's scope of operations. We typically would consider the enterprise's amount of debt, debt structure and legal issues that could limit the flexibility of the school district in the event it had to pay the enterprise's debt or manage its operations.

Expected Decline or Improvement in Instrument-Level Credit Quality

Expectations of a marked decline in credit quality (e.g., debt service coverage) on any debt pledge of a school district could indicate weakening credit quality of the school district itself that is not yet reflected in the scorecard. Conversely, an expected material improvement in instrument-level credit quality might indicate improving credit quality of the issuer. In some cases, there is a material separation between pledged revenue and the issuer's operating funds, e.g., through a special purpose vehicle. In other cases, the transaction structure has an open loop that allows the school district to use excess cash flow after debt service is paid for other needs. In this case, when pledged revenue decreases, operating revenue to the school district would also decrease.

History of Missed Debt Service Payments

A past default, whether on rated or unrated obligations, often indicates a heightened risk of failure to meet financial obligations, especially if the credit drivers of the default have not been cured. In addition, a history of default can indicate weak or wavering willingness to take necessary steps to avoid a future default. We include in this category missed or materially late payments on any of a school district's long-term bonds or short-term notes reflecting an inability or unwillingness to pay, and we typically include defaults on contingent obligations, such as moral obligations. The more time that has passed since a default, the less heavily we weigh this consideration, provided that the issuer has a subsequent track record of paying debt service on time and in full.

Event Risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in a school district's fundamental creditworthiness, which may cause actual ratings to be lower than the

scorecard-indicated outcome. Event risks — which are varied and can include natural disasters, sudden changes in state law or regulation, material litigation, pandemics or cybercrime events — can overwhelm even a stable school district.

Assigning Issuer-Level and Instrument-Level Ratings

After considering the scorecard-indicated outcome, other considerations and relevant cross-sector methodologies, we typically assign an issuer rating to the K–12 public school district.

Individual debt instrument ratings for general obligation unlimited tax, general obligation limited tax, general promises to pay and lease and contingent obligations may be assigned at the same level or higher or lower than the issuer rating to reflect our assessment of differences in expected loss related to an instrument's priority of claim as well as the specific pledge included in the instrument's terms. Broad guidance for decisions on assigning instrument ratings relative to the issuer rating can be found in Appendix C. Guidance for rating K-12 short-term debt is provided in our methodologies for short-term obligations, and guidance for the ratings of K-12 long-term debt instruments not discussed in Appendix C is provided in the relevant security-specific methodologies.¹⁸

Key Rating Assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.¹⁹

Limitations

In the preceding sections, we have discussed the scorecard factors and many of the other considerations that may be important in assigning ratings. In this section, we discuss limitations that pertain to the scorecard and to the overall rating methodology.

Limitations of the Scorecard

There are various reasons why scorecard-indicated outcomes may not map closely to actual ratings.

The scorecard in this rating methodology is a relatively simple tool focused on indicators for relative credit strength. Credit loss and recovery considerations, which are typically more important as an issuer gets closer to default, may not be fully captured in the scorecard. The scorecard is also limited by its upper and lower bounds, causing scorecard-indicated outcomes to be less likely to align with ratings for issuers at the upper and lower ends of the rating scale.

The weights for each factor and sub-factor in the scorecard represent an approximation of their importance for rating decisions across the sector, but the actual importance of a particular factor may vary substantially based on an individual issuer's circumstances.

Factors that are outside the scorecard, including those discussed above in the "Other Considerations" section, may be important for ratings, and their relative importance may also vary from school district to school district or from instrument to instrument. In addition, certain broad methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.²⁰

¹⁸ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

¹⁹ A link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

²⁰ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Examples of such considerations include the following: how sovereign credit quality affects non-sovereign issuers and the assignment of short-term ratings.

We may use the scorecard over various historical or forward-looking time periods. Furthermore, in our ratings we often incorporate directional views of risks and mitigants in a qualitative way.

General Limitations of the Methodology

This methodology document does not include an exhaustive description of all factors that we may consider in assigning ratings in this sector. School districts may face new risks or new combinations of risks, and they may develop new strategies to mitigate risk. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

Ratings reflect our expectations for an issuer's future performance; however, as the forward horizon lengthens, uncertainty increases and the utility of precise estimates, as scorecard inputs or in other considerations, typically diminishes. Our forward-looking opinions are based on assumptions that may prove, in hindsight, to have been incorrect. Reasons for this could include unanticipated changes in any of the following: the macroeconomic environment, general financial market conditions, disruptive technology, or regulatory and legal actions. In any case, predicting the future is subject to substantial uncertainty.

Appendix A: Using the Scorecard to Arrive at a Scorecard-Indicated Outcome

1. Measurement or Estimation of Factors in the Scorecard

In the "Discussion of the Scorecard Factors" section, we explain our analytical approach for scoring each scorecard factor or sub-factor,²¹ and we describe why they are meaningful as credit indicators.

The information used in assessing the sub-factors is generally found in or calculated from information in the school district's financial statements, regulatory filings, derived from other observations or estimated by Moody's analysts. We may also incorporate non-public information.

Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of a school district's performance as well as for peer comparisons. Financial ratios, unless otherwise indicated, are typically calculated based on an annual or 12-month period. However, the factors in the scorecard can be assessed using various time periods. For example, rating committees may find it analytically useful to examine both historical and expected future performance for periods of several years or more.

Metrics that relate to pension and OPEB obligations are calculated based on our cross-sector methodology that describes our adjustments to pension and OPEB data reported by GASB issuers.²² Financial metrics may incorporate analytical adjustments that are specific to a particular school district.

2. Mapping Scorecard Factors to a Numeric Score

After estimating or calculating each factor or sub-factor, each outcome is mapped to a broad Moody's rating category (Aaa, Aa, A, Baa, Ba, B, Caa or Ca, also called alpha categories) and to a numeric score.

Qualitative factors are scored based on the description by broad rating category in the scorecard. The numeric value of each alpha score is based on the scale below.

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	3	6	9	12	15	18	20

Source: Moody's Investors Service

Quantitative factors are scored on a linear continuum. For each metric, the scorecard shows the range by alpha category. We use the scale below and linear interpolation to convert the metric, based on its placement within the scorecard range, to a numeric score, which may be a fraction. As a purely theoretical example, if there were a ratio of revenue to interest for which the Baa range was 50x to 100x, then the numeric score for an issuer with revenue/interest of 99x, relatively strong within this range, would score closer to 7.5, and an issuer with revenue/interest of 51x, relatively weak within this range, would score closer to 10.5. In the text or table footnotes, we define the endpoints of the line (i.e., the value of the metric that constitutes the lowest possible numeric score, and the value that constitutes the highest possible numeric score).

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
0.5-1.5	1.5-4.5	4.5-7.5	7.5-10.5	10.5-13.5	13.5-16.5	16.5-19.5	19.5-20.5

Source: Moody's Investors Service

²¹ When a factor comprises sub-factors, we score at the sub-factor level. Some factors do not have sub-factors, in which case we score at the factor level.

²² A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

3. Determining the Overall Scorecard-Indicated Outcome

The numeric score for each sub-factor (or each factor, when the factor has no sub-factors) is multiplied by the weight for that sub-factor (or factor). A further weighting is then applied by scoring category as shown in the table below.

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	1	1	1	1	4	8	8

Source: Moody's Investors Service

We weight the three lowest scoring categories more heavily than higher scores in this scorecard because a serious weakness in one area often cannot be completely offset by strength in another.

The actual weighting applied to each sub-factor is the product of that sub-factor's standard weighting and its overweighting, divided by the sum of these products for all the sub-factors (an adjustment that brings the sum of all the sub-factor weightings back to 100%).

The numeric score for each sub-factor is multiplied by the adjusted weight for that sub-factor, with the results then summed to produce an aggregate numeric score before notching factors (the preliminary outcome). We then consider whether the preliminary outcome that results from the weighted factors should be notched upward or downward²³ in order to arrive at an aggregate numeric score after notching factors. In aggregate, the notching factors can result in a total of up to four and one-half upward notches or up to six downward notches from the preliminary outcome to arrive at the scorecard-indicated outcome.

The aggregate numeric score before and after notching factors can be mapped to an alphanumeric. For example, an issuer with an aggregate numeric score before notching factors of 11.7 would have a Ba2 preliminary outcome, based on the ranges in the table below. If the combined notching factors totaled two upward notches, the aggregate numeric score after notching factors would be 9.7, which would map to a Baa3 scorecard-indicated outcome.

²³ Numerically, a downward notch adds 1 to the score, and an upward notch subtracts 1 from the score.

EXHIBIT 5

Scorecard-indicated Outcome

Scorecard-indicated Outcome	Aggregate Numeric Score
Aaa	$x \leq 1.5$
Aa1	$1.5 < x \leq 2.5$
Aa2	$2.5 < x \leq 3.5$
Aa3	$3.5 < x \leq 4.5$
A1	$4.5 < x \leq 5.5$
A2	$5.5 < x \leq 6.5$
A3	$6.5 < x \leq 7.5$
Baa1	$7.5 < x \leq 8.5$
Baa2	$8.5 < x \leq 9.5$
Baa3	$9.5 < x \leq 10.5$
Ba1	$10.5 < x \leq 11.5$
Ba2	$11.5 < x \leq 12.5$
Ba3	$12.5 < x \leq 13.5$
B1	$13.5 < x \leq 14.5$
B2	$14.5 < x \leq 15.5$
B3	$15.5 < x \leq 16.5$
Caa1	$16.5 < x \leq 17.5$
Caa2	$17.5 < x \leq 18.5$
Caa3	$18.5 < x \leq 19.5$
Ca	$19.5 < x \leq 20.5$
C	$x > 20.5$

Source: Moody's Investors Service

In general, the scorecard-indicated outcome is oriented to the issuer rating.

Appendix B: US K-12 Public School Districts Scorecard

	Factor or Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Economy (30%)									
Resident Income (MHI Adjusted for RPP / US MHI)* ¹	10%	≥ 120%	100 - 120%	80 - 100%	65 - 80%	50 - 65%	35 - 50%	20 - 35%	< 20%
Full Value per Capita (Full Valuation of the Tax Base / Population)* ²	10%	≥ \$180,000	\$100,000 - \$180,000	\$60,000 - \$100,000	\$40,000 - \$60,000	\$25,000 - \$40,000	\$15,000 - \$25,000	\$9,000 - \$15,000	< \$9,000
Enrollment Trend (Three-Year CAGR in Enrollment)* ³	10%	2 - 4%	0 - 2% or > 4%	(2) - 0%	(5) - (2)%	(8) - (5)%	(11) - (8)%	(14) - (11)%	< (14)%
Factor: Financial Performance (30%)									
Available Fund Balance Ratio (Available Fund Balance / Operating Revenue)* ⁴	20%	≥ 25%	17.5 - 25%	10 - 17.5%	5 - 10%	0 - 5%	(5) - 0%	(10) - (5)%	<(10)%
Net Cash Ratio (Net Cash / Operating Revenue)* ⁵	10%	≥ 25%	17.5 - 25%	10 - 17.5%	5 - 10%	0 - 5%	(5) - 0%	(10) - (5)%	<(10)%

Factor or Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Institutional Framework (10%)								
Locally Determined Revenue Framework: The state allows the bulk of the school district's operating revenue to be determined at the local level.	The bulk of operating revenue is subject only to the approval of the school district board.	The bulk of operating revenue is subject to the approval of local voters or another local government; and school district requests for revenue increases are regularly approved; or there is room under any limitations in the local tax rate or local levy amount that apply to the bulk of operating revenue.	The bulk of operating revenue is subject to the approval of local voters or another local government; and school district requests for revenue increases are sometimes approved; or there is limited room under any limitations in the local tax rate or local levy amount that apply to the bulk of operating revenue.	The bulk of operating revenue is subject to the approval of local voters or another local government; and school district requests for revenue increases are rarely approved; or there is no room under any limitations in the local tax rate or local levy amount that apply to the bulk of operating revenue.	Not applicable.	Not applicable.	Not applicable.	Not applicable.

		Aaa	Aa	A	Baa	Ba	B	Caa	Ca
State-Determined Revenue Framework: The state determines the bulk of the school district's operating revenue, which is generated from state or local sources.		The state provides or allows for regular, sizable increases to the bulk of the school district's revenue; the state never decreases, holds flat or delays the school district's revenue; and the school district can generate meaningful additional locally determined operating revenue.	The state provides or allows for regular, predictable increases to the bulk of the school district's revenue; and the school district can generate meaningful additional locally determined operating revenue.	The state provides or allows for increases to the bulk of the school district's revenue, although the timing or amount of the increases may vary or the state sometimes holds this revenue flat, modestly reduces this revenue or occasionally delays disbursements; and the school district can generate meaningful additional locally determined operating revenue.	The state provides or allows for increases to the bulk of the school district's revenue, although the timing or amount of the increases may vary or the state sometimes holds this revenue flat, modestly reduces this revenue or occasionally delays disbursements; or the school district cannot generate meaningful additional locally determined operating revenue.	The state rarely provides or allows for increases to the bulk of the school district's revenue, sometimes reduces revenue without advance notice or often delays disbursements for prolonged periods.	The state does not provide or allow for increases to the bulk of the school district's revenue and frequently reduces revenue without advance notice or delays disbursements for more than one fiscal year.	Not applicable.	Not applicable.
Factor: Leverage (30%)									
Long-term Liabilities Ratio ((Debt + Adjusted Net Pension Liabilities + Adjusted Net Other Post-Employment Benefits) / Operating Revenue) ¹⁶	20%	≤ 125%	125 – 250%	250 – 400%	400 – 550%	550 – 700%	700 – 850%	850 – 1,000%	> 1,000%
Fixed-Costs Ratio (Adjusted Fixed Costs / Operating Revenue) ¹⁷	10%	≤ 15%	15 - 20%	20 - 25%	25 - 30%	30 - 35%	35 – 45%	45 - 55%	> 55%

Notching Factor

 Additional Strength in Local Resources (0 to +2)

 Limited Scale of Operations (-1 to 0)

 Weak Financial Reporting (-2 to 0)

 Potential Cost Shift to or from the State (-1 to +1)

 Potential for Significant Change in Leverage (-2 to +1.5)

- *1 For the linear scoring scale, the Aaa endpoint value is 200%. A value of 200% or better equates to a numeric score of 0.5. The Ca endpoint value is 10%. A value of 10% or worse equates to a numeric score of 20.5.
- *2 For the linear scoring scale, the Aaa endpoint value is \$400,000. A value of \$400,000 or better equates to a numeric score of 0.5. The Ca endpoint value is \$7,500. A value of \$7,500 or worse equates to a numeric score of 20.5.
- *3 The Aaa category has a V-shaped linear scoring scale, with 3% as the best possible score. A value of 2% equates to a numeric score of 1.5. A value of 3% equates to a numeric score of 0.5. A value of 4% equates to a numeric score of 1.5. A value of 6% or higher equates to a numeric score of 4.5. The Ca endpoint value is (17)%. A value of (17)% or worse equates to a numeric score of 20.5.
- *4 For the linear scoring scale, the Aaa endpoint value is 50%. A value of 50% or better equates to a numeric score of 0.5. The Ca endpoint value is (17.5)%. A value of (17.5)% or worse equates to a numeric score of 20.5.
- *5 For the linear scoring scale, the Aaa endpoint value is 50%. A value of 50% or better equates to a numeric score of 0.5. The Ca endpoint value is (17.5)%. A value of (17.5)% or worse equates to a numeric score of 20.5.
- *6 For the linear scoring scale, the Aaa endpoint value is 0%. A value of 0% or better equates to a numeric score of 0.5. The Ca endpoint value is 1,250%. A value of 1,250% or worse equates to a numeric score of 20.5.
- *7 For the linear scoring scale, the Aaa endpoint value is 0%. A value of 0% or better equates to a numeric score of 0.5. The Ca endpoint value is 65%. A value of 65% or worse equates to a numeric score of 20.5.

Source: Moody's Investors Service

Appendix C: Assigning Instrument Ratings for K-12 School Districts

In this appendix, we describe our general principles for assessing how an instrument's particular characteristics affect its credit risk, more specifically the instrument's probability of default and loss upon an event of default. Credit risk of individual debt instruments of school districts and their related units²⁴ may be different from what is reflected in the issuer rating.

We also provide guidance for assigning individual debt instrument ratings relative to the issuer rating based on these considerations.²⁵ These differences may arise from the specific pledge included in the instrument's terms, the instrument's priority of claim and the nature of the instrument (i.e., whether it is a contingent or a non-contingent obligation). As a result, instrument considerations may lead to the application of upward or downward notches from the issuer rating.

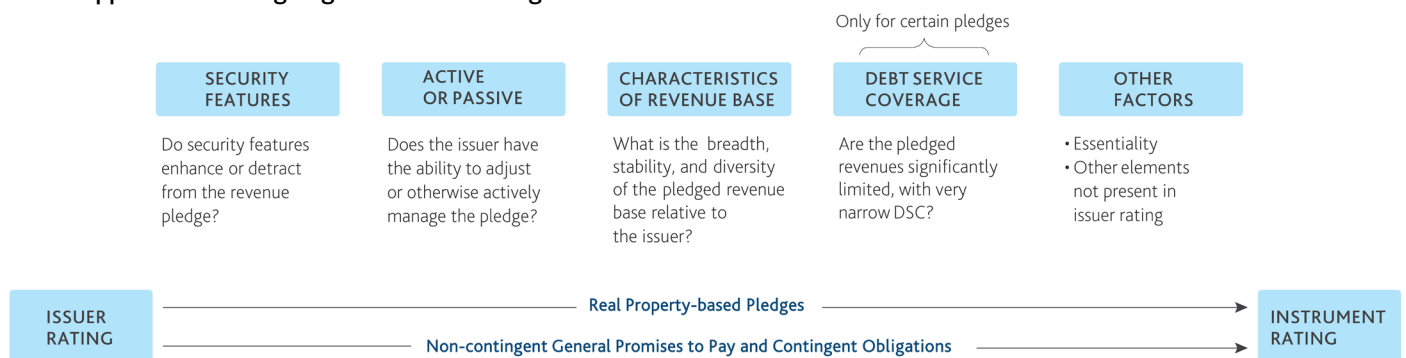
General Approach for Assigning Instrument Ratings

In this section, we describe some of the analytic elements of the typical structural features of debt instruments in the sector, and why they are important. Individual instruments may include a variety of permutations of these analytic elements. We divide K-12 instruments into two groups of pledges that are typical in the sector: (i) real property-based pledges; and (ii) non-contingent general promises to pay and contingent obligations.

For each instrument type, we evaluate the instrument's security features, including whether the debt obligation is contingent or non-contingent. We also consider whether the pledge, if any, is active or passive. Based on these characteristics, we may also assess the characteristics of the revenue base, debt service coverage and other factors. We consider the aggregate (typically cumulative)²⁶ effect of these structural analytic elements to arrive at the assigned instrument rating.

The exhibit below illustrates how these instrument-level ratings may be assigned relative to the issuer rating.

EXHIBIT 6
General Approach for Assigning Instrument Ratings



Note: DSC stands for debt service coverage.
Source: Moody's Investors Service

²⁴ In this context, related units include entities or sub-districts created to issue debt or debt-like obligations on behalf of a school district.

²⁵ For clarity, the guidance for assigning instrument ratings also refers to situations where we assign a debt instrument rating at the same level as the issuer rating.

²⁶ In most cases, notching for the various analytic elements is cumulative; however, there may be circumstances where one analytic element mitigates or exacerbates the credit effect of another analytic element.

Security Features

Why It Matters

Security features set the framework for our overall debt instrument analysis because these features may enhance or weaken the instrument's credit risk relative to the credit risk indicated by the issuer rating. Security features include the specific revenue pledge that a school district grants to bondholders.

A fundamental security consideration is whether the pledge is contingent or non-contingent. Contingent obligations are weaker than a non-contingent general promise to pay (as described below) for K-12 school districts. Contingent debt is an obligation where the stated promise to pay depends on additional action or the availability of the asset. A typical contingency requires a school district to appropriate funds to pay debt service annually; each appropriation renews the pledge for another year. There are other types of contingencies, such as a requirement for a leased asset to remain available for a school district's use or occupancy in order for a school district to remain obligated to make lease payments.²⁷ It is important to look through the nominal debt type to the underlying characteristics of the pledge to understand whether it is contingent or non-contingent.

The physical and legal separation of pledged revenue from the issuer's control is another important security feature. This can be accomplished through the combination of a lockbox and a valid security interest, such as a lien that is granted pursuant to statute and that makes holders of the pledge secured creditors. Both are important security features because a lockbox provides physical separation and a security interest provides legal separation through a property interest in pledged revenues. Other securitization or structural features that create physical and legal separation may also achieve the same result, if also combined with a lien.

In the case of a lockbox, funds from tax collections or intergovernmental transfers are transferred directly from a third-party tax collector or grantor, often a county, to the trustee for the bonds. The lockbox segregates the revenue dedicated to debt service from the issuer's accounts and control. The lockbox feature can lessen the likelihood of default because it creates a separation from the issuer's operations and other funds. When combined with legal separation, a lockbox can also be a positive credit factor in recovery, as described below.

In some states, certain pledges are secured by statute when executed properly. Such statutorily secured debt is reasonably expected to have lower probability of default and higher recovery in an insolvency scenario than unsecured debt. While these structures are largely untested in a default scenario, under federal bankruptcy law secured debtholders have priority over unsecured debtholders and other unsecured creditors in a reorganization. Together, a lockbox and statutory provisions for secured status, like a lien, may enhance recovery prospects compared with other debt. Both features are necessary to provide separation of the pledged revenue from the issuer's control and a security interest that makes the bondholders' interest in the pledged revenue that of a secured creditor.

We note that the security features described above are different from whether there is a specific pledge or promise to pay, which we discuss below.

Active or Passive Pledges

Why It Matters

The active or passive nature of a pledge is important because it can differentiate whether the issuer has promised to raise revenue to pay debt service or otherwise has the legal ability to do so. We consider a pledge to be active if the issuer can increase the pledged revenue stream (e.g., by raising tax rates or fees) without meaningful limitation or additional approvals from voters or other governments. We consider a

²⁷ Typically, from a statutory perspective, contingent obligations are not considered debt, which is often a reason why these instruments are employed; they also do not typically require voter approval. Please see *Rating Symbols and Definitions* for more information on what we consider to be a default.

pledge to be passive if the issuer can increase the pledged revenue stream only after securing voter approval or other external approvals, often from the state government, or if there are specific legal or practical limitations on the pledged revenue stream, e.g., tax rate limitations. In these cases, revenue to pay debt service typically depends on the performance of the revenue base, e.g., economic growth, and thus is more vulnerable than the issuer's overall revenue to economic decline.

Characteristics of the Revenue Base

Why It Matters

The promise to pay and the revenue pledge, if any, embedded in the instrument delineate the relationship between the issuer's total revenue and economic base, which are considered in its issuer rating, and the revenue that is available to pay debt service of a specific instrument.

The breadth, stability and diversity of the pledged revenue base relative to the issuer's revenue provide important indications of the strength or weakness of the revenue pledged to meet debt service. If a pledge is more limited or less stable than the broad operating revenue that is reflected in the issuer rating, particularly if the pledge is passive in nature, the bondholder may face more risk than is indicated in the issuer rating. Some bonds carry a revenue pledge from a broader and more robust economic base than the issuer's own revenue.

Where the pledged revenue base is narrow, bondholders may have limited recourse if the specific pledged revenue is insufficient to meet debt service on the related obligations. However, in some cases, a technically narrower pledge can still be robust.

Debt Service Coverage

Why It Matters

For some pledge types, debt service coverage is an important indicator of the sufficiency of the pledged revenue to meet debt service payments, e.g., where the dedicated revenue stream is limited or passive. If there is material excess revenue, the relevant bonds have lower exposure to potential variations in the revenue stream.

Other Factors

Why It Matters

Additional factors, some of which vary by pledge or security type, may also affect the risk of a given debt instrument relative to the credit strength of the issuer. Following are some examples:

- » The essentiality of the leased asset underlying a contingent obligation is important because it can indicate the likelihood that an issuer will choose to appropriate funds to pay the lease, or, for an abatement lease, whether it will continue to have use of the leased asset.
- » In some instruments, there may be a sunset provision in the pledge that precedes the maturity of the debt obligation.
- » Where a pledge type is subject to unanticipated legal challenges, an individual debt instrument may be vulnerable to non-payment even if the issuer is not undergoing stress.

Guidance for Assigning Individual Debt Instrument Ratings

In assigning instrument ratings, we consider all of the analytic elements relevant to the specific debt issuance and their impact. In this section, we provide guidance on the typical range of notching for common security types. For each major security type, the guidance for assigning a rating is described by analytic element and is typically cumulative. However, actual ratings may be different from the guidance where there is unusual strength or weakness in the legal structure or revenue base, in the relation of an issuer to the obligation, or in the terms of the debt instruments. Other issuer-specific or instrument-specific considerations may also be relevant.

The exhibit below illustrates the typical rating range seen between a school district issuer rating and its instrument ratings.

EXHIBIT 7

Illustrative Example: K-12 Relative Ratings for Typical School District Instruments

	NON-CONTINGENT DEBT Real property-based pledge or general promise to pay	CONTINGENT DEBT No long-term pledge; contingent upon annual action of issuer or subject to abatement
Issuer Rating +1 Notch	GOULT debt with lockbox and statutory lien protection	
ISSUER RATING	GOULT; GOLT (with headroom); general promise to pay	
Issuer Rating -1 Notch	GOLT (without headroom); General promise to pay (with carve-out)	More essential leases/COPs
Issuer Rating -2 Notches		Less essential leases/COPs
Issuer Rating -3 Notches		Moral obligations/less essential leases/COPs

Note: GOULT stands for general obligation unlimited tax, GOLT for general obligation limited tax and COPs for certificates of participation.

Source: Moody's Investors Service

Where a school district is undergoing financial distress, we may widen or narrow the rating differentials between the issuer rating and the rating of any specific obligations, based on our view of the relative probabilities of default and relative loss rates upon default.

The guidance below for assigning instrument-level ratings is divided into two groups of pledges that are typical in the K-12 sector: (i) real property-based pledges; and (ii) non-contingent general promises to pay and contingent obligations.

Real Property-based Pledges

In a real property-based pledge, the issuer pledges taxes that are levied on real property or other real property-related revenue. These pledges can be active or passive but are, by definition, non-contingent.

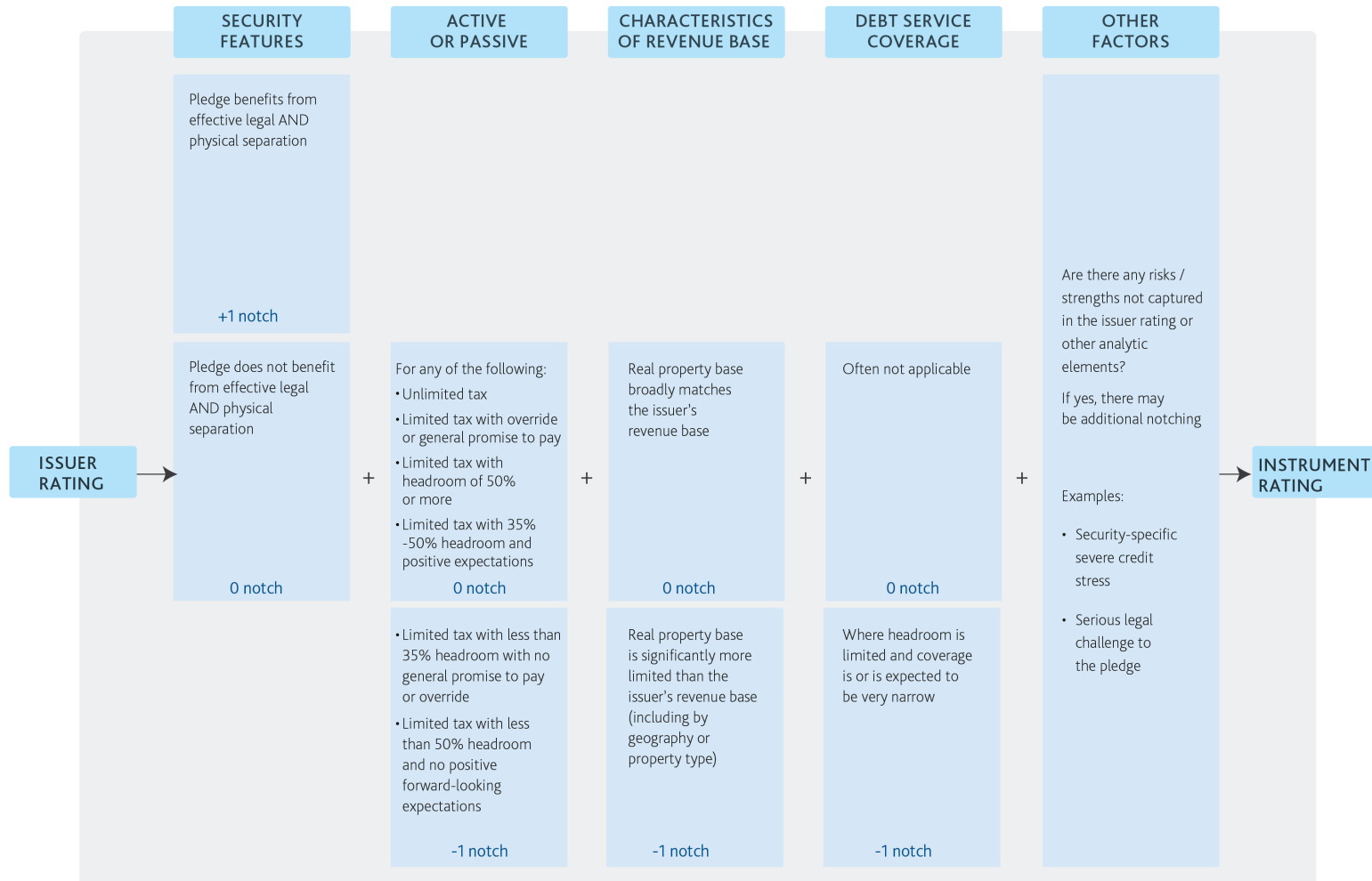
Examples of real property-based pledges include general obligation unlimited tax (GOULT) and general obligation limited tax (GOLT) pledges. Because the taxes associated with these pledges are levied on real or tangible property, GOULT or GOLT pledges have historically been among the most stable debt pledges.

Overall, a major consideration for all securities within the real property-based pledge grouping is whether the school district can adjust without limit the tax rate that generates the pledged revenue. We also consider how meaningful the limitation is. Where we consider the limitation to be material, the instrument rating is typically one notch below the issuer rating.

EXHIBIT 8

Real Property-based Pledges: Illustrative Notching

Real Property-based Pledges: Illustrative Notching



Source: Moody's Investors Service

General Obligation Unlimited Tax Pledge

While a GOULT pledge often includes a general promise of the issuer to pay the obligation (the specific language may vary; an example is a full faith and credit pledge), the key differentiating feature is the pledge to levy ad valorem taxes,²⁸ without limit as to rate or amount, sufficient to make timely payment of debt service. Because of the breadth and strength of the pledge, most GOULT instrument ratings are at the same level as the issuer rating.

How We Assess It**SECURITY FEATURES:**

Where a GOULT pledge provides physical and legal separation from pledged revenue under the issuer's control, typically through a lockbox and valid security interest, such as a lien, and we consider these to be effective, there is typically one upward notch for this analytic element. While the presence of only one of these elements may provide a modest benefit, it is not sufficient to provide uplift from the issuer rating.

We may not consider these security features to be effective where the responsible local governments have not carried out their lockbox obligations, where we think the legal separation is weak or where there have been successful legal challenges to the separation.

ACTIVE OR PASSIVE PLEDGE:

These are, by definition, active pledges. There is no notching for this analytic element.

CHARACTERISTICS OF THE REVENUE BASE:

Where the GOULT pledge encompasses all or substantially all of the issuer's tax base, there is no notching for this analytic element. Where we consider that the revenue pertaining to the specific GOULT pledge is significantly more limited than the issuer's revenue base (e.g., from a more limited geographic base or property type), there may be one downward notch for this analytic element. Where this more limited tax base is still robust, there may be no downward notching for this analytic element.

DEBT SERVICE COVERAGE:

Not applicable.

OTHER FACTORS:

We also consider risks in the structural features of the pledge that are not already reflected in the issuer rating or other analytic elements. If the risks are material, cumulative notching may reflect one or more additional downward notches, depending on the severity of the risks.

For example, a serious legal challenge to the validity of the GOULT pledge could lead to downward notching for this analytic element.

General Obligation Limited Tax Pledge

A GOLT pledge is a general obligation of a school district that includes a limited rather than an unlimited tax pledge. The nature of the limit for a GOLT varies. It can be imposed on the tax rate or on the levy amount that is available to pay the related debt service. In other cases, there may be a limit on the issuer's overall property tax levy, either a limit on the rate or a limit on the total amount of tax revenue collected. Although some of these limitations result in materially weaker credit strength, in many other cases, the tax limit does not materially constrain a school district's ability to pay debt service and therefore does not result in a material difference in the credit risk of the instrument relative to the issuer rating.

²⁸ Ad valorem taxes are based on the value of the real property.

There are various structural features that can reduce or eliminate the difference in credit risk between GOULT and GOLT pledges. For example, a school district may be able to override the stated limit, or a school district may issue GOLT debt that is also secured by a broad revenue pledge. In addition, some school district GOLT pledges have headroom within the limit that we think will be sufficient to cover projected growth in GOLT debt service or withstand potential decreases in net revenue (due to, for example, decreases in the assessed valuation of real property, enrollment or state aid). If there are no sufficient mitigants, a GOLT instrument is typically rated one notch below the issuer rating.

How We Assess It

SECURITY FEATURES:

Where a GOLT pledge includes both a lockbox and a valid security interest, such as a lien, and we consider these to be effective, there would typically be one upward notch for this analytic element. While the presence of only one of these elements may provide a modest benefit, it is not sufficient to provide uplift from the issuer rating.

We may not consider these security features to be effective where the responsible local governments have not carried out their lockbox obligations, where we think the legal separation is weak or where there are historical or ongoing significant legal challenges.

ACTIVE OR PASSIVE PLEDGE:

Where a school district has a meaningful ability to raise taxes within the stated limit (i.e., meaningful headroom) or can override the limit, or where an additional pledge (e.g., a general promise to pay) mitigates the limit, we consider the pledge to be active. In these cases, there is no downward notching for this analytic element. The absence of meaningful headroom typically leads to one downward notch for this analytic element. We typically consider headroom of 50% or more of maximum annual debt service (MADS) to be meaningful (see box). Where headroom is at least 35% and up to 50%, we may consider it sufficiently meaningful based on our forward view of a school district's revenue and economic base.

How We Estimate or Calculate Headroom for Raising Tax Revenue

We estimate or calculate headroom based on the ratio of the incremental revenue permitted by the limit to MADS for the pledge (e.g., GOLT).

The numerator is the current taxable assessed valuation related to the pledge multiplied by the maximum allowable tax rate for the debt (projected maximum levy, or revenue) minus the current levy pertaining to the pledge. The denominator is the MADS amount in dollars on all of the issuer's parity debt.

$$\text{(PROJECTED MAXIMUM LEVY – CURRENT LEVY USED FOR DEBT SERVICE) / MADS}$$

In our forward-looking view of this metric, we may incorporate a projection of additional parity debt and resultant MADS, and we may project taxable assessed value, particularly if we expect that the school district's tax base will decline.

CHARACTERISTICS OF THE REVENUE BASE:

Where revenue pertaining to the specific GOLT pledge is significantly more limited than the issuer's revenue base (e.g., from a more limited geographic base or property type), there may be one downward notch for this analytic element. Where this more limited tax base is still robust, however, there may be no downward notching for this analytic element.

Where there is a material decline in assessed valuation and where we consider that the levy limitation is likely to cause weakened or insufficient debt service coverage, there is typically downward notching for this analytic element.

DEBT SERVICE COVERAGE:

Where headroom is limited, we typically assess debt service coverage on a current and forward-looking basis. In cases where the debt service coverage of the pledge is materially lower than the issuer's general ability to meet all of its obligations, we may notch the instrument rating down to reflect this risk to the extent it is not already captured in the issuer rating or other analytic elements.

One downward notch is typical for this analytic element where there is no meaningful headroom and debt service coverage is expected to be near or below 1.1x. More than one downward notch may be applied where there is no meaningful headroom and debt service coverage is expected to be below 1.0x. For clarity, the guidance for this analytic element does not apply where there is an additional pledge (e.g., a general promise to pay).

OTHER FACTORS:

We also consider strengths or risks in the structural features of the pledge that are not already reflected in the issuer rating or other analytic elements. If the strengths are material, cumulative notching may reflect one upward notch. If the risks are material, cumulative notching may reflect one or more additional downward notches, depending on the severity of the risks.

For example, a serious legal challenge to the validity of the GOLT pledge could lead to downward notching for this analytic element.

Non-contingent General Promises to Pay and Contingent Obligations

This grouping includes general promises to pay, where general operating revenue is available for the payment of debt service, but the issuer has not pledged a specific, material revenue stream. It also includes contingent obligations.

Non-contingent General Promises to Pay

Some obligations represent a general non-contingent promise to pay, using the school district's available revenue²⁹ or its main operating revenue. In some cases, these instruments are called "general obligations," but the instrument does not include a property-tax pledge. In other cases, pledges specifically exclude taxation. Many obligations in this group contain broad language describing the promise (e.g., "full faith and credit"³⁰ or similar wording) but do not include a specific pledge of a property tax or other revenue. Because these promises to pay are non-contingent, we may consider them to be as strong as an explicit general obligation pledge. In other cases, the general promise to pay is effectively subordinated, because there are material carve-outs of revenue that is pledged to other debt. As there is wide variation in the language used, we look at the substance of the issuer's obligation.

Non-ad valorem debt is also in this category. It typically is a non-contingent pledge of general revenue with the explicit exclusion of revenue derived from ad valorem property taxes.

A number of regional and special school districts fall into the general promise to pay category because they have no direct taxing power and thus cannot issue long-term debt with a tax pledge. These entities issue long-term debt that is a non-contingent general obligation or promise to pay, e.g., where the regional or special school district has pledged its operating revenue. In many cases, the non-state revenue of these school districts is derived from per pupil charges to the respective towns or other school districts receiving the educational services.

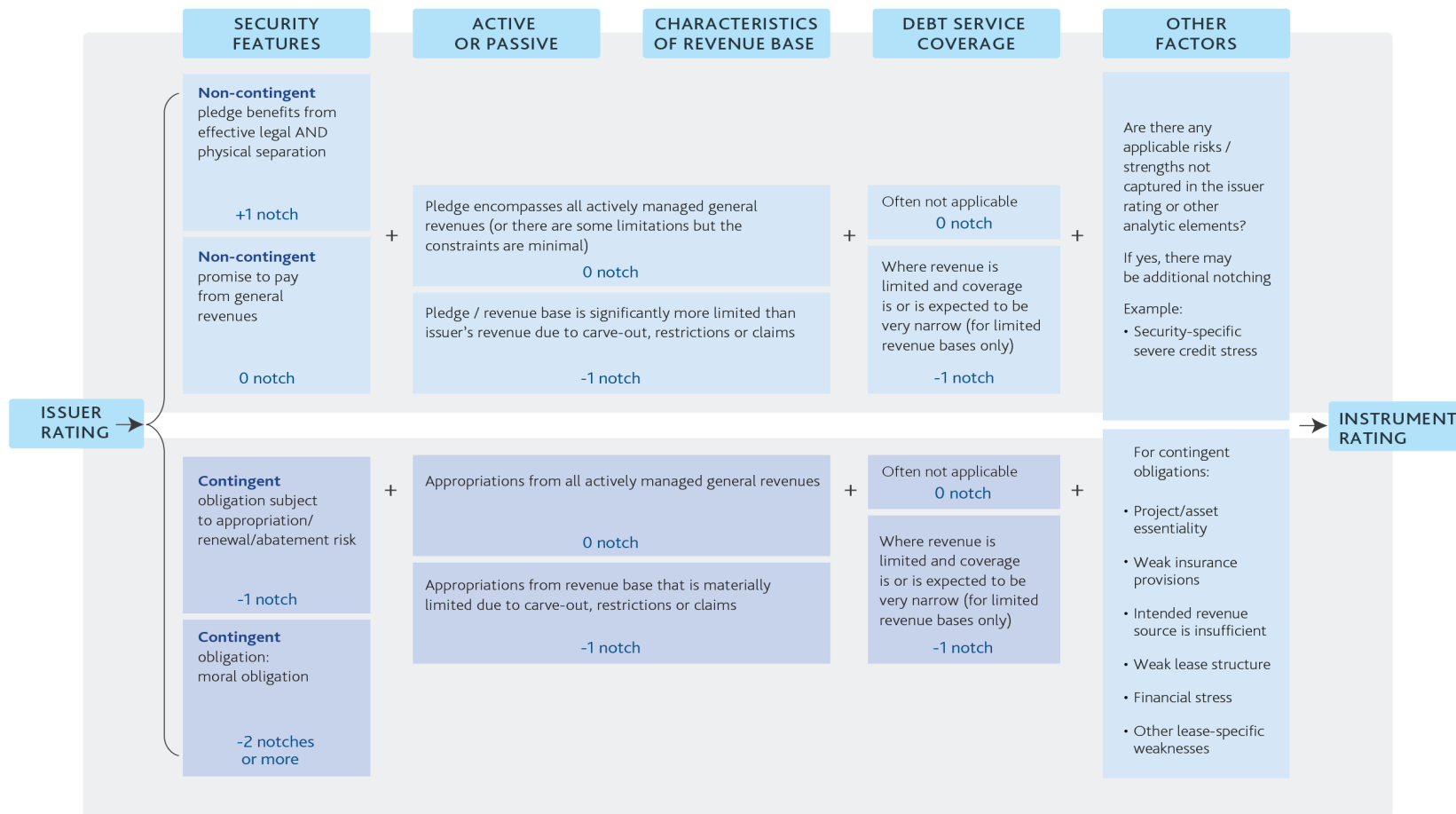
²⁹ Available revenue is typically revenue that has not been pledged to pay other obligations.

³⁰ There are cases where language such as "full faith and credit," under the laws of the state, requires the school district to levy taxes sufficient to pay the obligation; we consider these to be real property-based pledges.

EXHIBIT 9

Non-contingent General Promises to Pay and Contingent Obligations: Illustrative Notching

Non-contingent General Promises to Pay and Contingent Obligations: Illustrative Notching



Source: Moody's Investors Service

How We Assess It

SECURITY FEATURES:

There is typically no notching for this analytic element, because general promises to pay are non-specific as to revenue, by definition. However, we assess the security features of each transaction in order to determine if they provide material benefit to creditors.

ACTIVE OR PASSIVE PLEDGE AND CHARACTERISTICS OF THE REVENUE BASE:

We consider these two analytic elements together.

Where the pledge or general promise to pay encompasses all actively managed general revenue or where the relevant revenue is subject to some limitations but the constraints are minimal, there is no notching for these analytic elements.

Where the relevant revenue is significantly more limited than the issuer's revenue base (e.g., it is limited by the exclusion of certain significant operating revenue, by meaningful tax limitations or by priority claims on specific revenue), there is typically one downward notch for these analytic elements. For example, in the case of non-ad valorem debt, there is typically one downward notch for these analytic elements due to the limited characteristics of the revenue base. Where this more limited base is still robust, however, there may be no downward notching for this analytic element.

DEBT SERVICE COVERAGE:

For non-contingent pledges, there is no upward notching for this analytic element. Where the pledge is substantially reduced by carve-outs or other competing claims that render the pledged revenue significantly more limited than the school district's revenue, we typically assess debt service coverage on a current and forward-looking basis. One downward notch is typical for this analytic element where there are material revenue carve-outs and debt service coverage is expected to be near or below 1.1x. More than one downward notch is likely to be applied where there are material revenue carve-outs and debt service coverage is expected to be below 1.0x, in the absence of other mitigants.

OTHER FACTORS:

We also consider strengths or risks in the structural features of the pledge that are not already reflected in the issuer rating or other analytic elements. If the strengths are material, they may offset downward notching related to other analytic elements. If the risks are material, cumulative notching may reflect one or more additional downward notches, depending on the severity of the risks. For example, security-specific severe credit stress or a legal structure or security type with a poor track record in default could lead to downward notching for this analytic element. In addition, a serious legal challenge to the validity of a non-contingent general promise to pay could lead to downward notching for this analytic element.

Contingent Obligations

Examples of contingent obligations include appropriation lease-backed obligations, abatement lease-backed obligations, non-lease annual appropriation obligations and moral obligations.³¹ In the municipal market, appropriation-backed instruments are often issued as certificates of participation.

For school districts, a typical contingent obligation is an appropriation lease-backed instrument. The school district usually does not pledge any specific revenue to the lease and instead annually appropriates funds to pay debt service. The school district obligates itself to make lease payments pursuant to a capital lease between itself (as lessee) and, usually, a special purpose entity lessor created and controlled by the lessee. This lease payment revenue is used to pay debt service on the lease-backed instrument.

³¹ Not all leases are contingent obligations. Non-contingent leases are rated based on the long-term pledge, e.g., GOULT or GOLT.

In the case of an appropriation lease, the school district has a legal right to choose not to appropriate the funds, thereby not renewing the lease. The school district generally covenants to take proactive steps to make the annual lease payment and lease renewal, although with the explicit recognition that it is legally entitled to choose not to appropriate funds for the lease payment, or renew the lease. The same kind of appropriation structure can exist without a lease or leased asset.

Another common type of contingent obligation is an abatement lease, where the lease payment is contingent upon the continued availability of the leased asset for use or occupancy. If the use of the asset is compromised (e.g., a school building is partially destroyed by an earthquake), the lessee would be required to abate or reduce the lease payment in proportion to the reduction in use.

A fourth type of contingent obligation is a moral obligation. An example of a moral obligation structure would be where a school district promises to consider, under certain circumstances, appropriating funds for the replenishment of a debt service reserve. A moral obligation pledge is neither a guarantee to pay debt service nor a promise to replenish a debt service reserve nor a legally enforceable obligation to pay. Rather, it is a declaration that the school district intends to support the debt and will consider making appropriations and providing funding under certain circumstances.

Based on these contingencies, such obligations are not typically defined as debt under state law and would therefore be excluded from statutory and constitutional restrictions on debt issuance that apply to school districts. However, we consider such obligations to be the debt of the district.

Contingent obligations are typically weaker from a legal perspective than debt secured by a general obligation pledge, due to the contingent nature of appropriation and abatement features and the more limited creditor recourse in the event of default.

In all cases, contingent debt includes a legal out, either through failure to appropriate or abatement, and therefore lacks a firm pledge of revenue over the life of the debt. Even in cases where an issuer plans to use certain revenue flows for contingent lease payments or debt service, unless they are pledged for the life of the instrument, this intention does not improve credit quality. However, where the issuer signals an intention to use limited revenue to pay the contingent obligation, this may indicate additional risk for the lease bonds. An example is where the issuer intends to pay from expected project revenue (e.g., a school bus garage rented by a vendor), as opposed to general revenue.

We notch down from the issuer rating for contingent obligations in the K-12 sector. The number of downward notches for leases is usually limited to one or two, depending on our assessment of the essentiality of the pledged asset or financed project to the school district's operations. In most cases there is a fundamental connection between the financed asset and the fundamental operations of the school district, providing a strong incentive for school districts to appropriate funds for debt service payments.

The exhibit below shows the typical notching seen between the school district's issuer rating and non-contingent lease-backed obligations, contingent obligations and moral obligations.

EXHIBIT 10

Typical Downward Notching from the Issuer Rating

For non-contingent lease-backed obligations, contingent obligations and moral obligations

Security Type	Non-Contingent Lease-Backed Obligations	Contingent Lease-Backed and Annual Appropriation Obligations		Moral Obligations	
<i>Essentiality</i>	N/A	More	Less	More*	Less
Notches from Issuer Rating:					
Zero	X				
One		X			
Two			X	X	
Three or more				X	X

*For moral obligations, we may apply two or three downward notches from the issuer rating for more essential assets, depending on the legal structure.

Source: Moody's Investors Service

How We Assess It**SECURITY FEATURES:**

A contingent pledge is notched downward for security features.

A contingent pledge subject to appropriation, renewal or abatement typically leads to one downward notch for this analytic element. An exception is if an instrument also carries a backup general obligation pledge (GOULT or GOLT) or other non-contingent pledge, in which case we rate the instrument based on the stronger of the two pledges.

Where the contingent pledge is a moral obligation, there are typically two or more downward notches for this analytic element. The greater notching for moral obligations, relative to leases and appropriation obligations, reflects several characteristics of moral obligations, including that they are typically contingent upon legislative approval and are only called upon if the underlying revenue streams are insufficient.

ACTIVE OR PASSIVE PLEDGE AND CHARACTERISTICS OF THE REVENUE BASE:

We consider these two analytic elements together, and there is typically no downward notching for these analytic elements.

Where all actively managed general revenue is available for annual appropriation, including cases where the general revenue is subject to some limitations but those constraints are minimal, there is typically no downward notching for these analytic elements.

However, there would typically be one downward notch for these analytic elements where the available revenue is materially limited, such as by the exclusion of certain significant operating revenue, meaningful tax limitations on revenue or other priority claims on material revenue.

DEBT SERVICE COVERAGE:

For contingent pledges, there is no upward notching for this analytic element. Where the available revenue for debt service is significantly more limited than the school district's revenue, we typically assess debt service coverage on a current and forward-looking basis. One downward notch is typical for this analytic element where debt service coverage is assessed and expected to be near or below 1.1x. More than one downward notch will likely be applied where debt service coverage is assessed and expected to be below 1.0x, in the absence of other mitigants.

OTHER FACTORS:

We also consider risks in the structural features of the obligation that are not already reflected in the issuer rating or other analytic elements. If the risks are material, cumulative notching may reflect one or more additional downward notches, depending on the severity of the risks.

Essentiality

For contingent leases and moral obligation pledges, the essentiality of the underlying assets or financed project to the school district's core operations is a major consideration. We consider essentiality to be a strong indicator of a school district's incentive to appropriate funds for lease payments.

While essentiality falls on a continuum, we typically classify it in two categories. We generally consider an asset or project that is critical to K-12 core operations or administration as more essential (e.g., construction of school buildings, capital improvements on school buildings and financing of equipment that directly supports operations). In these cases, the asset or project also cannot be separated from the school district (is not severable) and has no commercial or enterprise risk. With more essential assets, there is no notching for the essentiality consideration.

Less essential assets or projects are not critical to K-12 core operations or administration, are severable, or have commercial or enterprise risk, e.g., an economic development project or a project that depends on vendor performance. In these cases, a future administration may no longer choose to support the project, appropriate funds for debt service, or repair the asset following an abatement event. In these cases, there are typically one or more downward notches for the essentiality consideration.

The exhibit below provides a summary of typical notching for the essentiality consideration. Actual notching is based on our view of the circumstances of the school district, the terms and conditions of the obligation and the school district's incentives or disincentives to honor the obligation.³² If there is a mix of more and less essential assets associated with an individual instrument or master lease structure, we generally characterize the essentiality of the entire asset pool by the single most essential asset.

³² For example, a change in state law that weakens a school district's incentive to provide pre-K education could diminish the essentiality of a lease tied to pre-K operations.

EXHIBIT 11

Typical Notching for Essentiality

More Essential	Less Essential
Asset or project is critical to K-12 core operations or administration, not severable, and has no commercial or enterprise risk.	Asset or project is not critical to K-12 core operations or administration, is severable, or has commercial or enterprise risk.
Examples (Illustrative; categorization could vary based on specific circumstances)	
» District's school buildings	» Projects dependent on commercial/vendor performance ³³
» Facilities (athletic, arts, parking, etc.) or improvements not severable from core operations	» Facilities (athletic, arts, parking, etc.) or improvements severable from core operations
» Administrative buildings	» Vacant land
Typical Notching for Essentiality	
No notching	One or more downward notches

Source: Moody's Investors Service

Insurance and Asset Substitution

For abatement leases, the leased asset's availability for a school district's use or occupancy is a precondition for lease payment. We typically consider sufficient property insurance procured by the lessee or the ability to substitute a new asset for a compromised asset to be an important structural feature. In the absence of both the ability to substitute an asset and standard insurance provisions, such as title insurance and renters' interruption insurance, there may be one downward notch for the insurance consideration.

Intended Revenue Source

In some cases, school districts may have an intended source of revenue to support contingent obligations, even if the pledge is to pay these obligations with all available revenue. The intention to use a specified revenue source, however stable, does not offset the contingent nature of the obligation. In these cases, there is typically no upward notching for this analytic element. Where the intended revenue source is unproven or volatile, the school district may not expect or be prepared to pay debt service from other sources. In these cases, we may apply one or more downward notches for this analytic element.

Structural Weakness

For any contingent pledge, where there is a material structural weakness, such as lack of clarity in the legal documents on the pledge and its mechanics, or if there is insufficient timing between the school district's expected appropriation date and the debt service payment dates, cumulative notching may reflect one or more additional downward notches, depending on the severity of the risks. In addition, a serious legal challenge to the validity of a contingent pledge could lead to downward notching for this analytic element.

Financial Distress

Where a school district is undergoing financial distress, we may widen or narrow the rating differentials between the issuer rating and the rating of any contingent obligations, based on our view of the relative probabilities of default and relative loss rates upon default. Our views of relative expected loss would generally be informed by state law, case law within the relevant jurisdiction and other meaningful issuer-specific risk factors that may indicate the school district's relative willingness and ability to pay various types of obligations.

In these instances, the specific, anticipated recovery rate for an obligation would be a more important rating consideration than our general principles for assigning instrument-level ratings.

³³ Vendors are not the lessors or owners of projects, but their performance may affect the anticipated impact of the lease payments on a school district's budget. A school district's payment obligation is not explicitly conditioned on vendor performance.

Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector credit rating methodologies can be found [here](#).

For data summarizing the historical robustness and predictive power of credit ratings, please click [here](#).

For further information, please refer to *Rating Symbols and Definitions*, which is available [here](#).

» contacts continued from page 1

Analyst Contacts:

NEW YORK +1.212.553.1653

Timothy Blake +1.212.553.4524
Managing Director - Public Finance
timothy.blake@moodys.com

Leonard Jones +1.212.553.3806
Managing Director - Public Finance
leonard.jones@moodys.com

Report Number: 1202421

Authors

Julie Beglin
Rachel Cortez
Naomi Richman

CLIENT SERVICES:

Americas:	+1.212.553.1653
Asia Pacific:	+852.3551.3077
Japan:	+81.3.5408.4100
EMEA:	+44.20.7772.5454

© 2021 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$5,000,000. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJJK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJJK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJJK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJJK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJJK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJJK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY550,000,000.

MJJK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.