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RATING METHODODOLOGY

US Local Government General Obligation Debt

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This rating methodology replaces the *US Local Government General Obligation Debt* methodology published in July 2020. We have removed US K-12 public school districts from the scope of this methodology; their General Obligation bonds are rated under the K-12 sector methodology. We have also removed scorecard thresholds for K-12 school districts and have made a few related changes to the methodology text.

This methodology explains how we evaluate the credit quality of the General Obligation (GO) debt of US local governments other than K-12 public school districts. This document is intended to provide general guidance that helps local governments, investors, and other interested market participants understand how key quantitative and qualitative risk factors are likely to affect rating outcomes for local governments that issue GO bonds. This document does not include an exhaustive treatment of all factors that are reflected in our ratings but should enable the reader to understand the qualitative considerations, financial information, and ratios that are usually most important for ratings in this sector.

The purpose of the scorecard is to provide a reference tool that market participants can use to approximate most credit profiles within the local government sector. The scorecard provides summarized guidance for the factors that we generally consider most important in assigning ratings to these issuers. However, the scorecard is a summary that does not include every rating consideration. The weights the scorecard shows for each factor represent an approximation of their importance for rating decisions. In addition, the scorecard was built based on historical results while our ratings are based on our forward-looking expectations. As a result, we would not expect the scorecard-indicated outcome to match the actual rating in every case.

Introduction

The methodology covers debt backed by the GO pledge of a US local government to pay its debt service.¹ For purposes of this methodology, the term local government excludes K-12 public school districts. The unlimited tax GO pledge most often provided by US local governments is a contractual "full faith and credit pledge," including, either explicitly or implicitly, the local government's obligation to levy an unlimited ad valorem (based on the value of property) property tax to pay debt service. In some instances, a local government's GO bonds are secured solely by an unlimited ad valorem tax without the broader "full faith and credit pledge." In other situations, the GO pledge is subject to limits on tax rate or amount of pledge.

Despite its fundamental strength, the GO pledge has practical and legal limits. From a practical perspective, there is an economic limit on the level of taxation that a municipality's tax base can bear. From a legal perspective, the local government's mandate to provide essential public services and pay retiree pensions may also have strong claims on a government's revenue and taxing power, depending on the particular state's laws. While a default on GO debt can occur with or without a Chapter 9 bankruptcy filing, bankruptcy laws may further circumscribe the power of the GO pledge (see "General Obligation Bonds in Bankruptcy" later in this report).

While property taxes are typically the security underpinning the GO pledge, we do not restrict our analysis to the capacity of a property tax levy to cover debt service. The unconditional and open-ended nature of the GO pledge typically means a local government legally commits all of its revenue-producing powers to meet debt service. Even in instances where the legal commitment is not that broad, our evaluation of credit quality includes more than just an evaluation of the local government's legally pledged resources. Rather, our analysis seeks to measure a local government's overall means and wherewithal to meet financial obligations from all of the resources at its disposal.

This methodology identifies and describes the various measures of our broad scorecard factors: economy/tax base, finances, management, and debt/pensions. Additionally, we describe the reasons we rate most local governments' General Obligation debt higher than many other governmental and corporate borrowers, and the types of developments that can cause a local government rating to fall outside of the normal rating distribution.

The Scorecard

The local government scorecard (see Exhibit 1 and Appendix A) is a tool providing a composite score of a local government's credit profile based on the weighted factors we consider most important, universal and measurable, as well as possible notching factors dependent on individual credit strengths and weaknesses. The scorecard is designed to enhance the transparency of our approach by identifying critical factors as a starting point for analysis, along with additional considerations that may affect the final rating assignment.

The scorecard is not a calculator. Its purpose is not to determine the final rating, but rather to provide a standard platform from which to begin viewing and comparing local government credits. It therefore acts as a starting point for a more thorough and individualistic analysis.

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.

¹ Other types of local government bonds such as pool financings, government-owned utility revenue bonds, lease financings, and special tax bonds are covered under different methodologies. Some of these security types, such as lease financings, are often notched off or otherwise related to the GO rating. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

The scorecard-indicated outcome will not match the actual rating in every case, for a number of reasons including the following:

- » Our methodology considers forward-looking elements that may not be captured in historical data
- » The scorecard is a summary that does not include every rating consideration
- » In some circumstances, the importance of one factor may escalate and transcend its prescribed weight in this methodology

EXHIBIT 1

Scorecard Factors and Weights

Local Governments

Broad Scorecard Factors	Factor Weighting	Sub-factors	Sub-factor Weighting
Economy/Tax Base	30%	Tax Base Size (full value)	10%
		Full Value Per Capita	10%
		Wealth (median family income)	10%
Finances	30%	Fund Balance (% of revenues)	10%
		Fund Balance Trend (5-year change)	5%
		Cash Balance (% of revenues)	10%
		Cash Balance Trend (5-year change)	5%
Management	20%	Institutional Framework	10%
		Operating History	10%
Debt/Pensions	20%	Debt to Full Value	5%
		Debt to Revenue	5%
		Moody's-adjusted Net Pension Liability (3-year average) to Full Value	5%
		Moody's-adjusted Net Pension Liability (3-year average) to Revenue	5%

Source: Moody's Investor Service

The weighted scorecard factors are limited to major rating drivers that are common to most issuers. Outside of these drivers, we may adjust the scorecard-indicated outcome for a variety of notching factors, which are more idiosyncratic factors that are likely not to apply to all issuers, but that can impact credit strength. The adjusted scorecard-indicated outcome is based on the weighted scorecard factors, combined with any notching adjustments. The adjusted scorecard-indicated outcome is a guideline for discussion, but does not determine the final rating. The final rating is determined by a committee, which considers, but is not bound by, the adjusted scorecard-indicated outcome.

About the Rated Universe

A local government is a subdivision of a state, most commonly a city² or county. The provisions establishing local governments are typically enumerated in each state's constitution. Most states have local government laws governing the authorities and responsibilities of the political subdivisions within each state. This methodology can also be applied to assess the general credit quality of US Native American tribal nations.

Local governments provide public services such as police and fire protection, courts, property records, public works maintenance, and water and sewer services. Cities or counties can also be responsible for public education,³ but this varies by state. Local governments fund these services with an array of revenues

² We use the term "city" interchangeably with terms such as town, township, village and borough.

³ The GO debt of US K-12 public school districts is excluded from the scope of this methodology.

including property taxes, sales taxes, income taxes, state and federal aid, departmental income such as fines and fees, or direct charges for service.

States or subdivisions frequently create additional local governments such as authorities or special districts. These could include separate government-owned water, sewer, sanitation, or electric utilities, or public library, park, community college, or community development districts, and we use this methodology to rate the GO debt of these entities.

What is a GO bond?

An unlimited tax GO (GOULT) bond is typically a security backed by the full faith and credit pledge and total taxing power of the local government. The GOULT pledge means the local government promises to do everything it can to meet debt service. The specific definition of the pledge is laid out in state laws governing local government debt issuance; the precise legal characteristics of a GO bond can vary by state and sector (library district, county, etc.) depending on the structure of the local government and other technical issues.

Most often, the GO security offers the local government's full faith and credit pledge, including the levying of ad valorem taxes without limit as to rate or amount, for the timely payment of debt service (an unlimited tax, or GOULT pledge).

In some instances, GO bonds are secured by a limited rather than unlimited property tax pledge. The limits may be on the specific debt service levy or tax rate, or on the taxing jurisdiction's overall property tax levy or total tax rate. We use our GO methodology for evaluating such limited tax General Obligation (GOLT) bonds in the same manner as unlimited tax GO bonds, but we may notch downward from the GOULT rating (whether an implied or public rating) to reflect the narrower, limited security provided by the GOLT pledge. For more information on our approach to GOLT debt, see Appendix C.

Some types of revenue bonds or other structures can receive a GO rating based on either a "double-barrel" pledge (meaning the GO as well as a second security are both explicitly pledged) or a municipality's legal guarantee to cover a separate entity's debt, provided we determine the legal enforceability of the guarantee and the structural mechanics assure the issue is sufficiently insulated from the risk of payment default by the underlying obligor.⁴

Note that state-level GO bonds do not typically involve ad valorem taxes and are rated under our separate state methodology.⁵

⁴ For more information, see our cross-sector methodology that discusses general principles related to the credit substitution approach. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

⁵ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

General Obligation Bonds in Bankruptcy

The enforceability of the GO pledge can change once a municipality enters a Chapter 9 bankruptcy. Treatment of GO bonds can vary by state, with some states designating GO debt service as a protected payment stream, others prohibiting bankruptcy altogether, and some leaving the question of how GO bonds should fare in a bankruptcy unanswered.

When a local government petitions for Chapter 9 bankruptcy protection, the debtor is subject to an "automatic stay" that halts all outflows, freezes all creditor recovery actions against the debtor, and prevents the borrower from liquidating assets to pay claims.

Bankruptcy courts have generally interpreted "special revenues" as exempt from the automatic stay, and therefore of stronger credit strength than other debts in a bankruptcy situation. Unless otherwise specified by state law or a jurisdiction's bankruptcy court, we believe GO bonds would generally not be treated as special revenues. In addition, certain states provide a statutory lien for GO bonds that makes it likely that courts would treat them as secured debt. In other states, it is unclear whether GO claims could be considered unsecured and therefore enjoy less protection than secured debt.

Many Chapter 9 bankruptcy provisions remain untested, so it is difficult to make generalizations about how GO bonds will fare in bankruptcy. We expect the treatment of GO bonds in bankruptcy to evolve as precedents are set. It is also important to note that default and bankruptcy are separate events. A default can occur without a jurisdiction ever entering Chapter 9 proceedings, and conversely, a local government can enter bankruptcy without defaulting on its GO debt.

The potency of ad valorem taxing power

The pledge to levy ad valorem property taxes to repay bondholders has proven its durability over many decades.

Ad valorem taxes – the bedrock of US local government finance – are by nature predictable. Property taxes are historically more stable through economic cycles than sales taxes, income taxes, or other local government revenues.

Even during depressed real estate cycles, property taxes have remained generally stable. One reason for this is that a local government first determines the amount that it wants to raise (the levy) and then sets the tax rate (millage) on the taxable properties in its jurisdiction. If taxable property values decline, municipalities usually have the legal ability to increase the millage to achieve an unchanged or increased levy. Further, changes in the market value of taxable properties usually translate to the assessed value on municipalities' tax rolls on a lag, and to the property tax bills on a further lag, helping to smooth economic cycles. Though some local governments were hit with double-digit declines in tax base in the past, the ability to adjust millage, in combination with the time-lag buffer, enabled most to adjust and re-balance operations.

Amortizing debt structures

Most local government debt service structures are level or declining. Local governments typically pay down some principal with each year of debt service. Spikes in debt principal are generally rare.

This type of debt structure mitigates or eliminates several risks prevalent in other sectors, including rollover risk, balloon repayment risk and interest rate risk (if the coupon is fixed, which is the typical municipal structure). Local governments generally pay debt service according to a predictable schedule and, unlike

many sovereign and corporate bond borrowers, generally do not rely on market access (i.e., new borrowing) to meet debt service payments.

Several of the local government sector's largest General Obligation defaults arose because of municipalities that exposed themselves to unstable debt structures or carried an unmanageable debt burden because of a guarantee issued on another entity's debt.

Stable institutional framework

The local government General Obligation pledge has proven extremely strong in part because local governments' legal, institutional, and practical environment is stable and protective.

- » Most local governments are perpetual entities and monopoly providers of essential, legally mandated services such as police and fire protection, jails, and road maintenance.
- » Local governments in nearly all states operate under balanced budget requirements. Strictly speaking it is illegal for most entities to operate with imbalanced budgets.
- » Most entities are required to submit to annual audits, and budgets are subject to public scrutiny.
- » Many states limit local government debt burdens.
- » Many states operate fiscal oversight programs that monitor local government behavior and in some cases take over financially struggling entities.

Discussion of Key Scorecard Factors

A primary purpose of the methodology and scorecard is to enhance the transparency of our rating process by identifying and discussing the key factors and sub-factors that explain our local government ratings and how these factors and sub-factors are used. The scorecard is not intended to be an exhaustive list of factors that we consider in every local government rating, but should enable the reader to understand the key considerations and financial metrics that correspond to particular rating categories. We reiterate that our rating process involves a degree of judgment, or consideration of analytical issues not specifically addressed in the scorecard, that from time to time will cause a rating outcome to fall outside the expected range of outcomes based on a strict application of the factors presented herein.

To arrive at a scorecard-indicated outcome, we begin by assigning a score for each sub-factor. We've chosen quantitative measures that act as proxies for a variety of different tax base characteristics, financial conditions, and governance behaviors that can otherwise be difficult to measure objectively and consistently. Based on the scores and weights for each sub-factor, an unadjusted scorecard-indicated outcome is produced, expressed as an alphanumeric.

We may then adjust the unadjusted scorecard-indicated outcome up or down a certain number of notches based on additional notching factors that we believe impact a particular local government's credit quality in ways not captured by the weighted scorecard factors. This is where analytical judgment comes into play. We may also choose to make adjustments to the historical sub-factor inputs to reflect our forward-looking views of how these statistics may change.

The unadjusted scorecard-indicated outcome, combined with any notching adjustments, provides an adjusted scorecard-indicated outcome. This outcome does not necessarily correspond to the final rating. Because some local governments' credit profiles are idiosyncratic, one factor, regardless of its scorecard weight, can overwhelm other factors, and other considerations may prompt us to consider ratings that differ from the adjusted scorecard-indicated outcome.

Below, we discuss each factor and sub-factor, as well as the notching adjustments and other considerations we analyze within each category of the methodology. From time to time, we may amplify or further clarify the various sub-factor considerations and notching adjustments within this methodology.

Factor 1: Economy/Tax Base (30%)

FACTOR 1

Economy/Tax Base (30%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Tax Base Size: Full Value	> \$12B	\$12B ≥ n > \$1.4B	\$1.4B ≥ n > \$240M	\$240M ≥ n > \$120M	\$120M ≥ n > \$60M	≤ \$60M	10%
Full Value Per Capita	> \$150,000	\$150,000 ≥ n > \$65,000	\$65,000 ≥ n > \$35,000	\$35,000 ≥ n > \$20,000	\$20,000 ≥ n > \$10,000	≤ \$10,000	10%
Socioeconomic Indices: MFI	> 150% of US median	150% to 90% of US median	90% to 75% of US median	75% to 50% of US median	50% to 40% of US median	≤ 40% of US median	10%

Source: Moody's Investor Service

Why It Matters

The ultimate basis for repaying debt is the strength and resilience of the local economy. The size, diversity, and strength of a local government's tax base and economy drive its ability to generate financial resources. The taxable properties within a tax base generate the property tax levy. The retail sales activity dictates sales tax receipts. The income earners living or working in the jurisdiction shape income tax receipts. The size, composition, and value of the tax base, the magnitude of its economic activity, and the income levels of its residents are therefore all crucial indicators of the entity's capacity to generate revenues.

Also crucial in this area of our analysis is the type of tax base and economy (residential bedroom community or an industrial, retail, or services center). Based on the type of local economy, we focus our questions and comparisons to include topics like commuting patterns, office or retail vacancy rates, or residential building permit activity, among other things.

While economic factors are important in our analysis, as demonstrated by the factor's 30% weight, the depth and breadth of a tax base is not the sole determinant of a credit rating. We have seen some local governments either unwilling or unable to convert the strength of their local economies into revenues. Tax caps, anti-tax sentiment, the natural lag between economic activity and its conversion into government revenues, and a variety of other factors have the potential to place obstacles between municipal governments and the wealth generated by their local economies. For these reasons, we consider other factors as well. Our scorecard inputs into Finances and Management capture the strengths of those governments that are able to translate economic weight into credit strength, while not assuming all do.

Sub-factor 1.a: Tax Base Size (10%)

Input Full value, i.e. the market value of taxable property accessible to the municipality. Often calculated as a multiple of assessed value, or the book value of properties on the tax rolls. Methods for calculating vary by state.

The tax base represents the well from which a local government draws its revenues. A larger tax base (measured by full value, or the total taxable value of property) in general offers a local government a broader, more flexible, and more diverse pool from which it can draw revenues. Smaller tax bases are more susceptible to shocks such as natural disasters or the closure of a major employer that destroy a great portion of taxable property values. Larger tax bases are better able to absorb these kinds of shocks. Smaller tax bases also tend to be less diverse and more dependent on a small number of properties.

Because an ad valorem pledge often underpins the GO security, the tax base is in a sense the ultimate repayment source for GO bondholders.

Sub-factor 1.b: Full Value Per Capita (10%)

Input: Full value divided by population

Full value per capita scales the taxable property available to generate resources to a per resident metric. The per resident property wealth of the tax base depicts the availability of tax-generating resources relative to the users of the services those resources fund.

We believe that looking at the magnitude of taxable property in tandem with taxable property per capita gives a clearer picture of tax base strength than looking at the magnitude of taxable property alone. Some entities have large tax bases on an absolute basis but low full value per capita, which may illustrate the difficulties in funding services for the population of cities using the resources of the base. Alternatively, other entities have a very high full value per capita despite moderate income levels, possibly due to a substantial commercial presence that is a robust component of the tax base.

Sub-factor 1.c: Median Family Income (10%)

Input: Median family income as a percentage of the US median

An important measure of the strength and resilience of a tax base is the income level of its residents. A community with higher wealth levels may have relative flexibility to increase property tax rates in order to meet financial needs. A wealthier community has greater spending power to sustain sales tax revenue and provide the demand necessary to support growth in the commercial and service sectors.

We emphasize median family income over per capita income because per capita income is more easily skewed by low-income populations that are not necessarily reflective of the strength of the tax base, such as the student residents at a university or inmates at a prison. For example, the per capita income of City X, a generic city with a university, may be equal to 90% of the US median, a figure that we believe understates the city's wealth because of the presence of a 21,000-student university. Both median family income and full value per capita portray a stronger tax base than the PCI indicates for City X.

Median family income also recognizes the economies of scale achieved when people share a household.

Notching adjustments

A number of other factors may not apply to all local governments but they may have an impact on the credit strength of the issuer and on the scorecard outcome. Following are some of the factors related to Economy/Tax Base that may lead to notching in the scorecard.

Institutional presence (positive): Some types of properties such as universities or military bases can offer stability and tax base strength. Because these properties are often tax-exempt, they may not be captured in full value or full value per capita; in fact, they often depress full value per capita. We may notch a scorecard-indicated outcome up if tax base measures fail to capture the anchoring influence of an institution. Institutional presence is exhibited when the local government is the state capital or a long-term, stable entity such as a university or military base that contributes 10% or more of a local government's population.

Regional economic center (positive): Economic and employment centers may generate revenues from daytime visitors such as employees or shoppers. Traditional tax base measures do not necessarily reflect the characteristics of these revenue-generating people if they are not permanent residents. We may notch a scorecard-indicated outcome up if a local government has a substantially greater daytime population than nighttime or weekend population.

Economic concentration (negative): Local governments that generate a significant portion of their revenues from a single taxpayer or industry are particularly vulnerable to a loss of those revenues, especially if that industry is weak or volatile. Sizable economic concentrations could cause us to notch a scorecard-indicated outcome down.

Oversized unemployment or poverty levels (negative): This factor is designed to adjust the scorecard-indicated outcome if a local government's socioeconomic characteristics are unusually weak in ways not already reflected in the scorecard. High unemployment or poverty levels may strain a local government's ability to tap its tax base for new revenues, or in extreme cases sustain existing tax collections. High levels may also pose additional demands for services.

Examples of other potential scorecard adjustments related to Economy/Tax Base

- » Per capita income
- » Composition of workforce/employment opportunities
- » Proportion of tax base that is vacant or exempt from taxes
- » Median home value
- » Trend of real estate values
- » Population trends
- » Property tax appeals outstanding
- » Unusually significant tax base declines or growth

Factor 2: Finances (30%)

FACTOR 2

Finances (30%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Fund Balance as % of Revenues	> 30%	30% ≥ n > 15%	15% ≥ n > 5%	5% ≥ n > 0%	0% ≥ n > -2.5%	≤ -2.5%	10%
5-Year Dollar Change in Fund Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%
Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 5%	5% ≥ n > 0%	0% ≥ n > -2.5%	≤ -2.5%	10%
5-Year Dollar Change in Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%

Source: Moody's Investor Service

Why It Matters

A local government's fiscal position determines its cushion against the unexpected, its ability to meet existing financial obligations, and its flexibility to adjust to new ones. Financial structure reflects how well a local government's ability to extract predictable revenues adequate for its operational needs are matched to its economic base.

The Finances category comprises two major components:

- » cash reserves and other liquid resources
- » the financial trend, which reflects on the quality of financial operations, the local government's ability to adjust to changing circumstances, and the potential for future stability or instability

Our financial analysis includes a review of historical financial performance as an indication of a local government's ability to weather budgetary pressures stemming from economic downturns or other factors. Our analysis focuses on multi-year financial trends, rather than performance in any given year, to indicate financial health over the medium term. Financial flexibility is a key area of analysis, as it provides insight into a local government's ability to maintain or augment its financial position going forward, ensuring a sufficient buffer to address any unexpected contingencies.

Our assessment of management includes a comparison of budget versus actual performance trends, focusing on the accuracy of both revenue and expenditure forecasts. Revenue forecasting is a key consideration, as overly optimistic revenue budgeting can lead to shortfalls within a fiscal year. The strongest financial managers work with information that is updated on a regular basis. For instance, property tax revenue projections will be more reliable if they are based on historic trends and also include reasonable assumptions about the future of the local real estate market, the direction of national interest rates, and the local government's likely tax collection rate. Similarly, strong sales tax revenue projections incorporate recent actual trends and indicators of likely future purchasing demand – such as population trend numbers, expected unemployment rates and the impact of current and expected nearby retail competition. The strongest management teams have a solid track record of meeting projections in key budget line items over several years.

We note that the terminology for financial inputs may vary from state to state, reflecting minor differences in accounting formats. Despite these differences, the fundamental nature of the inputs remain consistent across all local governments.

Sub-factor 2.a: Fund Balance (10%)

Input Available fund balance (Operating funds assets minus operating funds liabilities, adjusted for other resources or obligations that are available for operating purposes) as a percentage of operating revenues

Fund balance describes the net financial resources available to an entity in the short term. The input for this factor is not simply General Fund balance; we include all reserves that our analysis finds is available for operating purposes. The specific funds that will be included will vary by credit, although almost all will include at least the General Fund unassigned plus assigned fund balance.

The fund balance communicates valuable information about both the past and the future. The existing balance depicts the cumulative effects of the local government's financial history. It also identifies the liquid resources available to fund unforeseen contingencies as well as likely future liabilities.

The strength of a given level of fund balance varies depending on the particular local government and its respective operating environment. Larger balances may be warranted if budgeted revenues are economically sensitive and therefore not easily forecasted, or to offset risk associated with tax base concentration, unsettled labor contracts, atypical natural disaster risk, and pending litigation. Some cities and counties provide social services whose costs can spike unexpectedly, and some local governments are more reliant than others on less-predictable revenue sources such as sales taxes, fines, and fees. Alternately, municipalities with substantial revenue-raising flexibility may carry smaller balances without detracting from their credit strength; this weakness is offset by their ability to generate additional resources when necessary.

We include both restricted and unrestricted fund balance unless there is reason to believe the restricted portions are not usable for operating purposes. For groups of local governments that do not follow Generally Accepted Accounting Principles accounting standards, we adjust the fund balance to improve comparability.

Sub-factor 2.b: 5-Year Dollar Change in Fund Balance as % of Revenues (5%)

Input: Available fund balance in the most recent year minus available fund balance five years earlier, as a percentage of operating revenues in the most recent year

The strength of local government financial operations encompasses many elements, some of which interact: whether (and how much of) reserves are appropriated into the budget, how conservative the budget projections are, and how management reacts midcourse to variances from the original assumptions.

The most important aspect of financial operations is the local government's ability to achieve structural balance: long-term revenues matching long-term spending. The focus here is on whether financial reserves are increasing in step with budgetary growth.

We measure results as the dollar change in fund balance over the past five years, expressed as a percentage of the most recent year's revenues. We believe that a five-year window is generally representative of a full economic cycle.

For issuers that have maintained a stable fund balance throughout the five-year period, the metric is likely to come out at the "A" level, in the 0% to 10% range. If rating committee feels that the "A" score does not adequately reflect the credit strength of the issuer's five-year fund balance history, the committee can add a half-notch or full notch up to the scorecard-indicated outcome in "Other analyst adjustment to Finance factor."

Another adjustment to the scorecard-indicated outcome may be made if the change in fund balance was due to planned capital spending. Local governments frequently build capital reserves to pay for projects instead of, or in addition to, borrowing. In this case, the analyst may adjust the 5-year dollar change in fund balance calculation to reflect only the change in ongoing operating reserves, and eliminate the change in capital reserves that are generally spent on long-term capital projects.

Sub-factor 2.c: Cash Balance (10%)

Input: Operating funds net cash (cash minus cash-flow notes) as a percentage of operating revenues

Fund balance is an accounting measure subject to the modified accrual accounting prescribed by the Governmental Accounting Standards Board. While fund balance and cash are usually correlated, accruals can often lead to divergence between the two. A large receivable for delinquent taxes, for instance, can lead to an ostensibly high fund balance position and a weaker cash position; yet in this case, the fund balance position is less indicative of credit quality than the cash position.

Cash (net of notes payable within one year) represents the paramount liquid resource without regard to accruals.

We believe evaluating cash and fund balance in tandem is more informative than evaluating either in isolation. Our approach mutes some of the effects of modified accrual accounting while still recognizing the non-cash resources that are nonetheless likely accessible in the near-term.

Sub-factor 2.d: 5-Year Dollar Change in Cash Balance as % of Revenues (5%)

Input: Operating funds net cash in the most recent year minus Operating funds net cash five years earlier, as a percentage of operating revenues in the most recent year

This factor seeks to reflect changes to a local government's cash position distinct from its fund balance. Accrual accounting can sometimes depict a story that obscures some details of financial operations. The

trend in the local government's cash balance gives us additional information about financial operations that may be veiled by accrual-driven changes in fund balance.

Notching adjustments

A number of other factors may not apply to all local governments but they may have an impact on the credit strength of the issuer and on the scorecard outcome. Following are some of the factors related to Finances that may lead to notching in the scorecard.

Outsized enterprise or contingent liability risk (negative): We may notch a scorecard-indicated outcome down by one or several notches if a local government operates, has guaranteed the debt of, or is otherwise exposed to an enterprise or operation that poses outsize risk relative to the local government's own operations. This risk could reflect a General Obligation guarantee of an independent entity's debt (such as a city's guarantee of an incinerator authority's debt) or the local government's operation of an enterprise, even if currently self-supporting. The adjustment strives to reflect the potential impact of an enterprise's debt, debt structure, or legal issues that could limit the flexibility of the general government in the event it had to cover the enterprise's debt or operations.

Unusually volatile revenue structure (negative): Volatile or unpredictable revenue sources can present challenges to budgetary balance and stable fund balance and cash reserves. We may notch a scorecard-indicated outcome down if volatile, unpredictable, or economically sensitive revenue sources comprise 50% or more of operating funds revenues, or if any major revenue sources has changed by 10% or more in any one year of the past five.

Examples of other potential scorecard adjustments related to Finances

- » Questionable balance sheet items that may distort fund balance
- » Large portion of fund balance that is restricted or unusable
- » Labor contracts that materially affect credit strength
- » Limited revenue raising ability: restrictive property tax cap, constraints on capturing tax base growth, or other levy-raising limitation
- » Limited ability to cut or control expenditures: limitation constrains budgetary flexibility to a degree not already captured in the scorecard
- » Heavy fixed costs, including contractually fixed costs such as pension payments or rising pension contribution requirements

Factor 3: Management (20%)

FACTOR 3

Management (20%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Institutional Framework	Very strong legal ability to match resources with spending	Strong legal ability to match resources with spending	Moderate legal ability to match resources with spending	Limited legal ability to match resources with spending	Poor legal ability to match resources with spending	Very poor or no legal ability to match resources with spending	10%
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures	> 1.05x	1.05x ≥ n > 1.02x	1.02x ≥ n > 0.98x	0.98x ≥ n > 0.95x	0.95x ≥ n > 0.92x	≤ 0.92x	10%

Source: Moody's Investor Service

Why It Matters

Both the legal structure of a local government and the practical environment in which it operates influence the government's ability to maintain a balanced budget, fund services, and continue tapping resources from the local economy. The legal and practical framework surrounding a local government shapes its ability and flexibility to meet its responsibilities.

The laws of each state establish a framework for its political subdivisions that determines what revenues they are empowered to raise and how much flexibility they have in increasing them, as well as what services they are required to provide and how much flexibility they have in cutting them.

Sub-factor 3.a: Institutional Framework (10%)

Input An input of Aaa through B and below determined for each sector/state combination annually

This factor measures the municipality's legal ability to match revenues with expenditures based on its institutional apparatus: the constitutionally and legislatively conferred powers and responsibilities of the local government entity.

We typically determine one score for every state and sector combination, and we typically conduct this assessment annually. For example, all cities in a state will generally have the same institutional framework score. However, if an existing or potential state action affects only a subset of local governments, that subset may have a different institutional framework score than other local governments in the state/sector.

The following rubric acts as a launching point for these discussions:

EXHIBIT 2

Operating Revenue Flexibility		Revenue Raising Ability			Expenditure Predictability	
		Strong ability to raise revenues	Moderate ability to raise revenues	Weak ability to raise revenues		
Revenue Predictability	Major revenue sources tend to be highly stable and predictable	Aaa	Aa	A	Major expenditures tend to be highly stable and predictable	
	Major revenue sources tend to be moderately stable and predictable	Aa	A	Baa		Major expenditures tend to be moderately stable and predictable
	Major revenue sources tend to be somewhat unstable and unpredictable	A	Baa	Ba or B and Below		Major expenditures tend to be somewhat unstable and unpredictable
		Expenditure Reduction Ability			Operating Expenditure Flexibility	
		Strong ability to reduce expenditures	Moderate ability to reduce expenditures	Weak ability to reduce expenditures		

Source: Moody's Investor Service

The interplay between legally dictated resources and responsibilities contributes to the stability of a local government's credit profile and its capacity to match revenues to expenditures over time. A local government with a stable institutional framework is less likely to face an abrupt change in its obligations without the corresponding ability to meet those obligations.

Factors that drive the institutional framework score:

- » Tax caps⁶
- » Organized labor
- » Difficulty of increasing revenues (i.e., subject to public approval)
- » Predictability of costs (such as to salaries and benefits)
- » State-imposed limitations on fund balance or reserves

We know that applying a single institutional framework score to all local governments in a state and sector will inevitably lead to exceptions. For instance, a struggling city in a state that may ordinarily provide a weak institutional framework could gain a stronger framework if placed under state supervision or receivership. We will appropriately score these exceptions through adjustments to the scorecard-indicated outcome.

Sub-factor 3.b: Operating History (10%)

Input The average of operating revenues divided by operating expenditures in each of the past five years

While institutional framework communicates the context of a municipality's legal ability to match revenues and spending, the operating history communicates the local government's demonstrated willingness to utilize that ability.

This factor measures the five-year average of the ratio of operating revenues to operating expenditures. A ratio of greater than 1.0 indicates a budget surplus on average, a ratio of 1.0 indicates balanced operations, and a ratio of less than 1.0 indicates a sustained deficit.

A local government's success in navigating the legal, political and practical environment in which it operates depends on a multitude of factors, including management's mastery in understanding its resources and managing its responsibilities, public and executive support for its plans, and its willingness to use the tools at its disposal.

We do not believe a single playbook prescribes how best to manage a budget. Rather, we assess management's success in planning and adjusting under a mosaic analysis based foremost on results: does the evidence show a trend of operating surpluses, operating deficits, or are the results mixed?

When evaluating a credit, we seek to understand the probable impact of fund balance policies, multi-year financial or capital planning, liquidity management, accuracy of budget forecasts, and willingness to make mid-year adjustments. Reliance on non-recurring, or "one-shot" revenues, such as proceeds from the sale of assets, windfall delinquent tax collections, or the use of fund balance as a revenue source, leaves the municipality vulnerable should these one-time revenues fail to materialize in the future. Ultimately, we believe actual results are the best indicator of the effectiveness of all these factors. The five-year operating history shows whether the local government's financial position is strengthening or weakening, and whether management has been effective at planning for the future and adjusting when things have not gone as planned.

⁶ Tax caps matter even if they do not limit increases in property taxes to pay for debt service. A limitation on revenue raising can restrict financial flexibility and make it difficult to grow reserves, hampering credit even for an unlimited tax General Obligation pledge.

Notching adjustments

A number of other factors may not apply to all local governments but they may have an impact on the credit strength of the issuer and on the scorecard outcome. Following are some of the factors related to Management that may lead to notching in the scorecard.

State oversight or support (positive or negative): Control boards, receivership, emergency management, or other forms of state oversight can alter a municipality's institutional framework and differentiate its resources and responsibilities from others in its state and sector. Oversight structures can make it easier or more difficult to issue debt, raise taxes, or restructure labor contracts. We may notch the scorecard-indicated outcome up, or in some cases down, when state intervention changes a local government's legal and practical landscape.

Unusually strong or weak budget management and planning (positive or negative): We recognize that a five-year operating history will not always tell the whole story of a local government's willingness to achieve balanced operations. We may notch a scorecard-indicated outcome up or down if we believe a local government's financial planning and budget management are unusually strong or weak, in ways not reflected in the recent financial trend or existing cash reserves and fund balance. We typically apply downward notching to local governments that lack active management or that have weak or limited budgetary management or financial reporting standards. Local governments with "home rule" status that provides them with greater legislative powers than others in their state typically receive upward notching.

Factor 4: Debt/Pensions (20%)

FACTOR 4

Debt/Pensions (20%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Net Direct Debt / Full Value	< 0.75%	0.75% ≤ n < 1.75%	1.75% ≤ n < 4%	4% ≤ n < 10%	10% ≤ n < 15%	≥ 15%	5%
Net Direct Debt / Operating Revenues	< 0.33x	0.33x ≤ n < 0.67x	0.67x ≤ n < 3x	3x ≤ n < 5x	5x ≤ n < 7x	≥ 7x	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value	< 0.9%	0.9% ≤ n < 2.1%	2.1% ≤ n < 4.8%	4.8% ≤ n < 12%	12% ≤ n < 18%	≥ 18%	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues	< 0.4x	0.4x ≤ n < 0.8x	0.8x ≤ n < 3.6x	3.6x ≤ n < 6x	6x ≤ n < 8.4x	≥ 8.4x	5%

Source: Moody's Investor Service

Why It Matters

Debt and pensions represent important components of the long-term financial obligations facing a local government.

Debt and pension burdens are measures of the financial leverage of a community. Ultimately, the more leveraged a tax base is, the more difficult it is to service existing debt and to afford additional debt, and the greater the likelihood that tax base or financial deterioration will result in difficulties funding fixed debt service expenditures.

Our treatment of debt seeks to scale the magnitude of a local government's debt obligations relative to: 1) its resources (using tax base as the proxy), and 2) its operations (using operating revenues as a proxy).

We see pension liabilities as characteristically similar, though not identical, to debt. Because of disparities in the way local governments measure and report pension liabilities, we use an internal standardization process to calculate the adjusted liability.⁷

Our methodology and scorecard are more restrictive with respect to debt burdens compared to pension burdens. This reflects the fact that measures of accrued pension liability are estimates that depend on numerous actuarial assumptions and are affected by external market factors that can be volatile from year to year. In addition, it may be possible for governments to amend or renegotiate pension plan provisions in a manner that reduces accrued liabilities. In contrast, debt principal obligations are fixed in nature.

Sub-factor 4.a: Debt to Full Value (5%)

Input Gross debt minus self-supporting debt, as a percentage of full value

Our first gauge of a local government's debt burden evaluates net direct debt relative to full value. This metric tells us how onerous future debt service payments could be to the tax base. We use full value as a proxy for the capacity of a local government to generate additional revenues to pay debt service.

To arrive at net direct debt, we calculate the local government's gross debt burden including all GO bonds, notes, loans, capital leases, and any third-party debt backed by the local government's GO guarantee. This calculation may include lease, other appropriation-backed debt, and special tax debt as well if our analysis concludes these securities represent future claims on operating resources. We then subtract debt for essential service utilities (such as water and sewer systems) that is self-supporting from user fees, based on a coverage calculation.⁸ We do not subtract debt whose principal and interest is paid by taxes, even if those costs are external to the General Fund. The self-supporting calculation is designed to strip out debt that will not be supported by taxes or the General Fund because it is paid for with user fees such as water, sewer, or electric charges. We do not deduct GO debt for non-essential enterprises such as golf courses, even if it is self-supporting (see Appendix B).

⁷ For more information, see our cross-sector methodology that describes general principles related to adjustments for US state and local government reported pension data. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

⁸ Debt is considered self-supporting if operating revenues minus operating expenditures (excluding depreciation) have been sufficient to cover principal and interest for the previous three years. If essential-service debt fails this test (for instance, if it fails in one of the past three years), it will not be considered self-supporting and will be added to the debt burden.

P3 availability payment obligations may be debt-like

Depending on structure, availability-payment Public-Private Partnerships (P3s) may be viewed as “debt-like” obligations if there are clear, contractual obligations of the local government to make scheduled payments for a project or facility made available to the sponsoring government for use. Under those conditions, we will include the P3 liability in the local government’s direct debt measures. References elsewhere in this methodology to debt measures and ratios should be read to include those P3 liabilities we identify as debt-like.

The liability included in a local government’s debt metrics will be the higher of (i) the liability as reported on the public entity’s financial statement and (ii) the size of the termination payment under a project company default scenario, which is often set in the project agreement at a level of or near 80% of the outstanding debt, and may also be pro-rated in proportion with construction progress. While a project is in construction, typically the government does not report a liability, and the liability is limited to the termination payment the government is required to make if construction is not completed, as specified by the P3 project agreement. If project-specific documents are not available, we will use an assumed termination payment (80% of the debt outstanding), pro-rated in proportion with estimated construction progress.

Some P3 liabilities may be viewed as ‘self-supported’ by project revenues

Availability-payment P3s are often structured with the sponsoring government’s expectation that project revenues will partially or fully offset the government’s contractual obligations. Depending on the structure and performance of the project over time, we may view the availability-payment commitments as “self-supporting” and deduct them from some debt measures. This approach is similar to our treatment of certain types of government-issued debt as self-supporting.

We view an availability-payment P3 transaction as self-supporting based on two criteria. First, user charges earned from the project must demonstrate a track record of self-sufficiency and be credibly projected to continue to amply cover the government’s obligations through the life of the obligation with a high level of confidence. Second, the structure must commit the project revenues to offset the government’s obligations for the life of the commitment. For this purpose, the project revenues must also cover all operating and maintenance payments as well as the government availability payments. A project that meets these criteria would still be included in our measure of gross debt, but would be excluded from core measures of the government’s net debt burden.

Sub-factor 4.b: Debt to Revenues (5%)

Input: Gross debt minus self-supporting debt, as a percentage of operating revenues

Next, we evaluate net direct debt relative to operating revenues. This metric expresses the potential budgetary impact of future debt service. A high debt burden relative to operating revenues implies a possibility that debt will consume a greater portion of the local government’s budget in future years.

We believe evaluating net direct debt relative to both full value and operating revenues is superior to evaluating either one alone because in tandem they express the obligations’ potential pressure on the budget as well as on the revenue-generating resources the local government utilizes to fund the budget.

Sub-factor 4.c: 3-year Average of Moody's-Adjusted Net Pension Liability to Full Value (5%)

Input: The average of Moody's-adjusted Net Pension Liability⁹ in each of the past three years, as a percentage of full value

We seek to measure the magnitude of a local government's pension obligations (as adjusted by Moody's) relative to its tax base. Similar to the debt burden evaluation, we use the tax base as a proxy for future revenue-generating capacity to amortize accrued pension obligations for which trust assets are not currently set aside.

We use a three-year average of the net pension obligation to smooth the volatility inherent in a metric that changes with market interest rates and the value of pension plan assets.

Sub-factor 4.d: 3-year Average of Moody's-Adjusted Net Pension Liability to Operating Revenues (5%)

Input: The average of Moody's-adjusted Net Pension Liability in each of the past three years, as a percentage of operating revenues

This metric seeks to measure pension obligations relative to the size of the local government's budget.

The metric attempts to reflect the prospect that amortization of accrued net pension obligations could sap revenues out of future-year budgets and lead to funding shortfalls. Because pension contributions are for many governments a significant fixed-cost share of what is already typically the largest component of general government operations – salaries and benefits – they directly affect annual budgets and the ability to sustain essential services.

Overall, the pension scores are used as a starting point for an analysis of the pension position and its impact on operations. The analysis considers the funded status, future contributions, and overall liability in the context of the local government's long-term resources. The analysis is not driven solely by the ANPL number.

Also considered as part of this overall category are other post-employment benefits (OPEB), which are primarily healthcare liabilities for retired workers. Municipalities typically do not fund their future healthcare liabilities, choosing instead to meet these payments on a pay-as-you-go basis. We do not add present-value measures of unfunded OPEB to the scorecard, as these obligations have proven in many jurisdictions to be subject to greater discretionary control by management. However, when OPEB obligations appear to be particularly large relative to budget and tax base and management has not demonstrated a willingness to address related costs, we will factor this into our rating analysis through a notching adjustment.

Notching adjustments

A number of other factors may not apply to all local governments but they may have an impact on the credit strength of the issuer and on the scorecard outcome. Following are some of the factors related to Debt/Pensions that may lead to notching in the scorecard.

Unusually weak or strong security features (negative or positive): General Obligation bonds sometimes have structural features that are fundamentally stronger than a local government simply paying debt service out of its operating revenues. For example, some structures employ a lock box, where funds from tax collections are transferred directly from a third-party tax collector to the trustee for the bonds and never flow into the issuer's own accounts; we may adjust the scorecard-indicated outcome upward due to such a structure.

⁹ For more information, see our cross-sector methodology that describes general principles related to adjustments for US state and local government reported pension data. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Conversely, if the courts were to interpret a state's GOULT security as weaker than the typical pledge, or if pensions were granted superior status to debt, we could notch the scorecard-indicated outcome down. Overall, this notching factor is designed to adjust the scorecard-indicated outcome when the security features enhance or weaken the factors on the scorecard.

Unusual risk posed by debt structure (negative): The structure of a local government's debt profile can pose additional risks not captured by the debt burden. A large amount of short-term notes without sufficient offsetting liquidity can expose the local government to market access risks. A large amount of variable-rate debt or swaps can expose a municipality to a variety of risks, including termination risk, counterparty risk, and interest rate risk. Non-amortizing debt structures with bullet maturities are unusual for General Obligation bonds, and may also result in downward notching from the scorecard-indicated outcome.

History of missed debt service payments (negative): A historical default may reflect an elevated risk of failure to meet financial obligations going forward. Defaults frequently reflect poorly on management and the local government's willingness and/or ability to meet financial obligations. We include in this category not only defaults on other General Obligation bonds or guarantees with GO backing, but on non-parity obligations such as a lease revenue bond. The magnitude of notching, if any, depends on the timeframe for the cure if any, changes instituted since the default, and the reason for default or missed payment.

Examples of other potential scorecard adjustments related to Debt/Pensions

- » Material likelihood that the state will reduce historical levels of pension support
- » Very high or low debt service relative to budget
- » Very high or low overall debt burden (including overlapping debt)
- » Heavy capital needs implying future debt increases
- » Unusually slow or rapid amortization of debt principal (gauged by the percentage of principal repaid within 10 years)
- » Other post-employment benefits (OPEB), the most significant of which is retiree healthcare liabilities, when they have the potential to significantly constrain operational flexibility

Determining the Scorecard-Indicated Outcome

To determine the scorecard-indicated outcome, each of the assigned scores for the sub-factors is converted into a numerical value based on the following scale:

EXHIBIT 3

Rating Category	Aaa	Aa	A	Baa	Ba	B and below
	1	2	3	4	5	6

Source: Moody's Investor Service

Each sub-factor's value is multiplied by its assigned weight and then summed to produce a weighted average score. This score is then mapped to the ranges specified in the table below, and a corresponding alpha-numeric outcome is determined based on where the total score falls within the ranges. This produces the scorecard-indicated outcome. This scorecard-indicated outcome is then adjusted up or down, in minimum half-notch increments, for applied notching considerations. A half-notch adjustment up or down may not necessarily result in a change to the adjusted scorecard-indicated outcome, depending on the raw score. The outcome of this weighted average approach is one input into our credit analysis of local government General Obligation bonds.

We use both historical and projected financial results in the rating process. Our ratings are forward-looking and incorporate our expectations for future financial and operating performance. Accordingly, we may make adjustments to the quantitative factors based on anticipated near-term results. In some cases, confidential information that we cannot publish may inform our expectations for future performance. In other cases, we estimate future results based upon past performance, industry trends, near-term borrowing plans, and other factors. Historical results help us understand patterns and trends for a local government's performance as well as for peer comparison.

EXHIBIT 4

Scorecard-Indicated Outcome	Overall Weighted Score
Aaa	0.5 to 1.5
Aa1	1.5 to 1.83
Aa2	1.83 to 2.17
Aa3	2.17 to 2.5
A1	2.5 to 2.83
A2	2.83 to 3.17
A3	3.17 to 3.5
Baa1	3.5 to 3.83
Baa2	3.83 to 4.17
Baa3	4.17 to 4.5
Ba1	4.5 to 4.83
Ba2	4.83 to 5.17
Ba3	5.17 to 5.5
B1	5.5 to 5.83
B2	5.83 to 6.17
B3 and below	6.17 to 6.5

Source: Moody's Investor Service

Assumptions, Limitations and Rating Considerations Not Covered in the Scorecard

This methodology and scorecard describe generally how we assign GO ratings for counties, cities, and special districts in the US. The methodology and scorecard capture the factors we believe are most relevant to local governments' long-term credit quality, but this methodology is not an exhaustive discussion of all factors that our analysts consider in every US local government rating.

The rating methodology scorecard incorporates a trade-off between simplicity that enhances transparency and greater complexity that would enable the scorecard-indicated outcomes to map more closely to actual ratings. The scorecard's four factors and 12 sub-factors do not constitute an exhaustive treatment of all of the considerations that are important to local government ratings.

In choosing metrics for the methodology scorecard, we have excluded certain factors that are important to ratings but may be either subjective or based on predictions about future events, although such considerations may be important in individual rating determinations. Accordingly, ranking the factors by rating category in a scorecard would in some cases suggest too much precision and stability in the relative ranking of particular local governments. The expectation that a local government's budgetary process may reach a stalemate in the upcoming budgetary cycle is an example of a factor that has not been included in the scorecard but may factor into a rating.

Ratings may also reflect circumstances in which the actual weighting of a particular factor or sub-factor is significantly different from the weighting suggested by the scorecard. For example, a local government's multi-year spending trend, severe illiquidity, or persistent retirement system underfunding may pressure the

financial stability of the local government so significantly that we feel the scorecard-assigned weighting of one particular factor or sub-factor is insufficient. This variation in weighting as a rating consideration can also apply to factors not represented in the scorecard.

Also, environmental, social and governance (ESG) considerations may affect the ratings of local governments. For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.¹⁰

Our ratings incorporate expectations for future performance, while much of the information used in the scorecard is historical. In some cases, our expectations for future performance may differ from past performance, and may affect the rating.

How the US Government Bond Rating Can Affect a Local Government Rating

Given their degree of independence from the credit condition of the US government, the large majority of local governments could be rated higher than the sovereign if the US government were to be downgraded by one notch. Certain local governments, however, have greater exposure to potential federal cuts or are highly dependent on federal employment, procurement, or transfer payments. Therefore, their ratings are capped at the sovereign rating.¹¹

Our analysis to determine whether a municipal rating is linked to the US government's rating typically focuses on specific metrics such as federal procurement activity, federal employment and healthcare employment as indicators of economic sensitivity. Medicaid expenditures for states and public hospital expenditures for local governments as indicators of direct exposure to federal spending are also considered, along with the presence of short-term or puttable debt as an indicator of exposure to capital markets disruptions.

¹⁰ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

¹¹ For more information, see our cross-sector methodology that discusses general principles related to how sovereign credit quality can impact other ratings. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Appendix A: US Local Government General Obligation Scorecard

	Very Strong	Strong	Moderate	Weak	Poor	Very Poor	
	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Economy/Tax Base (30%)							
Tax Base Size: Full Value	> \$12B	\$12B ≥ n > \$1.4B	\$1.4B ≥ n > \$240M	\$240M ≥ n > \$120M	\$120M ≥ n > \$60M	≤ \$60M	10%
Full Value Per Capita	> \$150,000	\$150,000 ≥ n > \$65,000	\$65,000 ≥ n > \$35,000	\$35,000 ≥ n > \$20,000	\$20,000 ≥ n > \$10,000	≤ \$10,000	10%
Socioeconomic Indices: MFI	> 150% of US median	150% to 90% of US median	90% to 75% of US median	75% to 50% of US median	50% to 40% of US median	≤ 40% of US median	10%
Finances (30%)							
Fund Balance as % of Revenues	> 30%	30% ≥ n > 15%	15% ≥ n > 5%	5% ≥ n > 0%	0% ≥ n > -2.5%	≤ -2.5%	10%
5-Year Dollar Change in Fund Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%
Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 5%	5% ≥ n > 0%	0% ≥ n > -2.5%	≤ -2.5%	10%
5-Year Dollar Change in Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%
Management (20%)							
Institutional Framework	Very strong legal ability to match resources with spending	Strong legal ability to match resources with spending	Moderate legal ability to match resources with spending	Limited legal ability to match resources with spending	Poor legal ability to match resources with spending	Very poor or no legal ability to match resources with spending	10%
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures	> 1.05x	1.05x ≥ n > 1.02x	1.02x ≥ n > 0.98x	0.98x ≥ n > 0.95x	0.95x ≥ n > 0.92x	≤ 0.92x	10%
Debt/Pensions (20%)							
Net Direct Debt / Full Value	< 0.75%	0.75% ≤ n < 1.75%	1.75% ≤ n < 4%	4% ≤ n < 10%	10% ≤ n < 15%	≥ 15%	5%
Net Direct Debt / Operating Revenues	< 0.33x	0.33x ≤ n < 0.67x	0.67x ≤ n < 3x	3x ≤ n < 5x	5x ≤ n < 7x	≥ 7x	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value	< 0.9%	0.9% ≤ n < 2.1%	2.1% ≤ n < 4.8%	4.8% ≤ n < 12%	12% ≤ n < 18%	≥ 18%	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues	< 0.4x	0.4x ≤ n < 0.8x	0.8x ≤ n < 3.6x	3.6x ≤ n < 6x	6x ≤ n < 8.4x	≥ 8.4x	5%

Source: Moody's Investor Service

Scorecard: US Local Government General Obligation Bonds

EXHIBIT 5

Adjustments/Notching Factors

Description	Direction
Economy/Tax Base	
Institutional presence	up
Regional economic center	up
Economic concentration	down
Outsized unemployment or poverty levels	down
Other scorecard adjustment related to Economy/Tax Base	up/down
Finances	
Outsized contingent liability risk	down
Unusually volatile revenue structure	down
Other scorecard adjustment related to Finances	up/down
Management	
State oversight or support	up/down
Unusually strong or weak budgetary management and planning	up/down
Other scorecard adjustment related to Management	up/down
Debt/Pensions	
Unusually strong or weak security features	up/down
Unusual risk posed by debt/pension structure	down
History of missed debt service payments	down
Other scorecard adjustment related to Debt/Pensions	up/down
Other	
Credit event/trend not yet reflected in existing data sets	up/down

Source: Moody's Investor Service

Appendix B: Framework for Measuring Enterprise or Contingent Liability Risk

Contingent liabilities represent a key credit risk for the small subset of local governments that provide debt guarantees or other financial support for non-essential enterprises and projects. Through the economic downturn and recovery there has been an increase in the number of failing non-essential or otherwise risky enterprises, which have the potential to weigh on local governments that have provided guarantees for these enterprises. Therefore, we may make a downward adjustment to the scorecard-indicated outcome for "Outsized Enterprise or Contingent Liability Risk."

As discussed under sub-factor 4.a, Debt to Full Value, our calculation of an issuer's debt includes all third-party debt guaranteed by that issuer. Our calculation of debt subtracts out guaranteed (or direct) debt for essential enterprises that are covering debt service from their own operations. However, we do not subtract guaranteed debt for non-essential enterprises, even if a history of self-support exists.

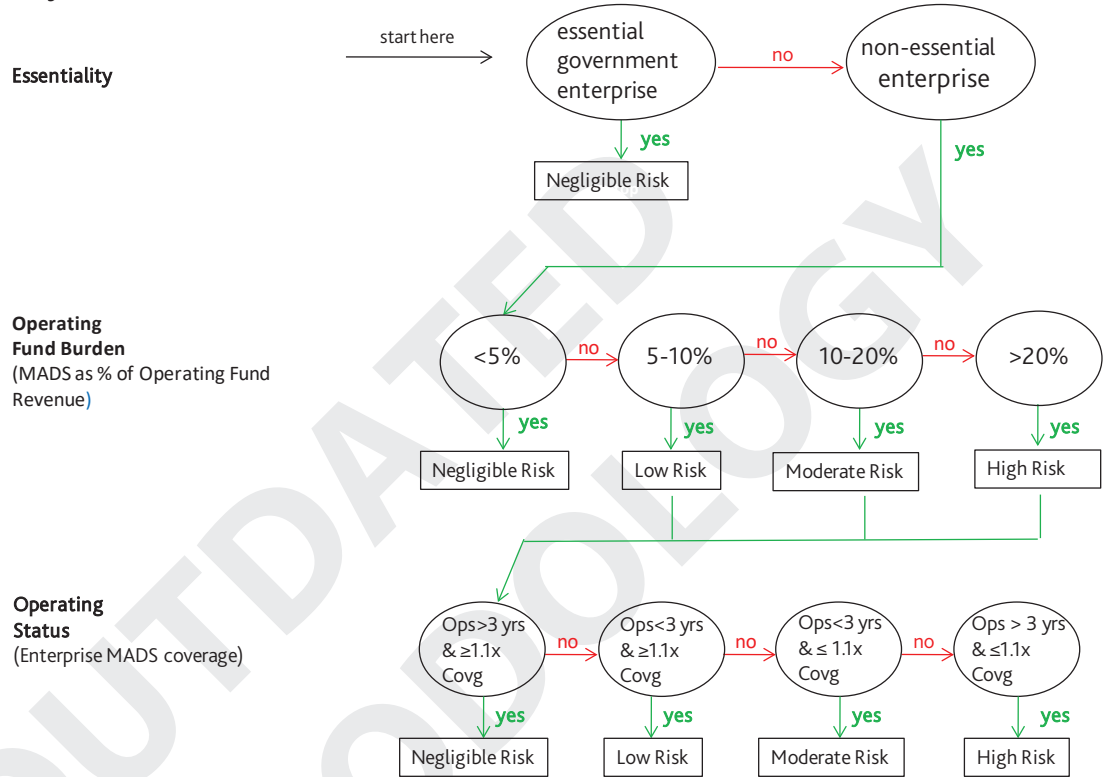
In addition, enterprise or contingent liabilities can pressure an issuer's finances, when the enterprise fails to perform as expected and the issuer must pay its debt service. We consider a notching adjustment to the scorecard-indicated outcome after analysis of additional factors that determine the magnitude of contingent liability risk. These factors include:

- » Effect of non-essentiality of the guaranteed enterprise or project on likelihood or willingness of local government to honor obligation.
 - Generally, we consider water, sewer, stormwater, electric and gas enterprises to be "essential government enterprises" because they tend to be necessary to the health and welfare of the community and are therefore likely to garner strong public support; as businesses, they enjoy a relatively inelastic demand. They also often enjoy a monopoly within the service area, insulating them from competition from the private sector. We will not typically make additional adjustments to the scorecard-indicated outcomes of issuers who have guaranteed debt for such enterprises. Less or non-essential enterprises, such as sports arenas, recreation facilities or economic development projects that are directly exposed to market forces, may have limited support and at higher risk of unwillingness by the obligor to honor the liability.
- » Local government's financial ability to cover debt service
 - In order to account for the potential full effect of a contingent liability to the local government's operations, we look at the maximum annual debt service (MADS) of the guaranteed debt of the enterprise relative to total operating fund revenues. In general, we consider MADS that falls below 5% of operating fund revenues to present little or minimal risk to a local government's operations. Once MADS goes above 20% of revenues, we believe the risk is high.
- » Likelihood of the enterprise's need for financial support from the local government
 - Once we have established the risk to the local government's operations of the full contingent liability, we explore the likelihood that an enterprise or project's net revenues will fall short of full debt service. The history of the enterprise's operations and track record of MADS coverage provide key data to assist in determining the risk the local government will need to subsidize the debt service. We consider the enterprise to pose little or no risk if it has at least a 3-year operating history that demonstrates 1.1 times coverage of MADS from net revenues. The magnitude of the risk increases with a shorter history of adequate coverage and even more so if there is a history of coverage falling below 1.1 times.

The flow chart below illustrates the analysis that we undertake to determine the magnitude of contingent liability risk to determine whether, and by how much, to adjust the scorecard based on contingent liability risk. There may be additional considerations we include in our analysis as well. If the enterprise's liquidity is constrained, for example, it may need additional external support from the local government when revenues cannot cover expenditures.

EXHIBIT 6

Analytic Factor



Source: Moody's Investor Service

Appendix C: General Obligation Limited Tax Debt

In this appendix, we describe our approach for evaluating US Local Government Limited Tax (GOLT) debt of US local governments. GOLT credit quality is closely related to the quality of the local government's general obligation unlimited tax (GOULT) pledge.

The relationship between a GOULT pledge and a GOLT pledge is defined by the degree to which the GOLT pledge is indeed "limited" from both a legal and practical perspective. A GOULT pledge legally commits the local government to levy an unlimited ad valorem property tax to pay debt service, but a GOLT pledge explicitly limits this commitment in some manner. The nature of the limitations vary, but our fundamental assessment of GOLT debt is similar to our approach to the GOULT security in that we recognize a broad pledge of available resources available to pay bondholders -- both pledges are, after all, general obligations.

The revenues pledged to pay GOLT debt service are derived from the same economic base, fall under the same operating structure and are managed by the same governmental entity. Thus, we rarely rate an issuer's GOLT debt more than one notch lower than its GOULT rating¹² and often rate the two types of debt at the same level, if the limitation does not greatly impair a local government's ability to pay GOLT debt relative to GOULT debt. To the degree that a GOLT debt issue includes a "full faith and credit" or other broad revenue pledge similar to the GOULT, the issuer is obligated to draw from all of its resources to pay debt service, not just from property tax revenue. Thus, in such cases there is generally little practical distinction between GOULT and GOLT obligations.

Legal Limitation on Property Taxation Forms Basis for Limited Tax Pledge

State law establishes the legal limitation to local government property taxation that forms the basis of a GOLT security pledge. Such tax limits vary by state and sometimes by sector within a state. The key factor that makes the GO security tax pledge limited is a restriction that legally curtails the local government's authority to raise ad valorem property taxes to any extent to pay debt service.

The two most common types of legal limitations to ad valorem property taxes that may result in a limited tax pledge are:

- » limitations on the property tax rate;
- » limitations on the property tax levy dollar amount or tax yield¹³

Limitations on the property tax rate: Some property tax limitations place a cap on the overall tax rate, representing an overall maximum level to which a local government may legally increase the tax rate. Others limit the amount by which a local government can increase the rate annually. A state may also have limits on both the overall tax rate and annual increases.

When assessed values are growing, a tax rate cap is less restrictive than when values are flat or declining, because more value is captured within the rate, resulting in additional tax yield per dollar of millage (i.e., the amount of tax levied per \$1,000 of assessed value). When the tax rate is subject to an overall cap and property values decline, the local government's taxing power also declines since the top allowable tax rate yields a smaller amount of property tax revenue. Limits on annual tax rate increases when property values are declining prevent an issuer from raising the tax rate to a level that holds the tax yield constant, resulting in the local government collecting less property tax revenue.

¹² The reference GOULT rating may be a rating on a GOULT, an issuer rating or the equivalent.

¹³ The tax yield is the amount of money generated by applying a tax rate to a government's assessed property value, adjusted by a projected collection rate.

Limitations on the levy dollar amount: States may limit the total dollar amount of property tax a local government can levy on taxpayers. When these caps are set as a percentage of the total assessed value of the tax base, they fluctuate with growth or declines in the tax base.

When the levy dollar amount is limited to a certain annual growth rate, typically by a fixed percentage or a variable percentage based on indices such as inflation, the limitation is not affected by fluctuations in property values. If a local government experiences a decline in its assessed value, it can increase its levy up to the dollar limit, regardless of the rate that might be required. States may also allow a local government to "bank" unused levy capacity if it chooses not to increase the levy to the limit in any given year, carrying that additional taxing margin into future years.

Depending upon the state and sector, local governments may be subject to one or both rate and levy dollar amount limitations.

Other limitations: Several states impose limitations on the amount that a local government's assessed value may grow in any given year, regardless of real property market value growth. Assessed value limitations in the absence of rate or levy limitations do not hinder a municipality's legal ability to generate revenue for debt repayment and therefore do not, in and of themselves, affect the pledge on the repayment of debt. This type of limitation can be used to control growth within certain property classes, for instance, if residential assessed values are subject to a narrower growth rate than commercial values. If there is no tax rate limit, the governmental issuer retains the legal authority to raise the tax rate to generate any level of revenue. However, assessed value growth limitations, when combined with rate or levy dollar amount limitations, further limit the taxing power of a local government debt issuer.

GOLT Debt Rated No More than One Notch Below GOULT Rating in Most Cases

When rating general obligation limited tax obligations, the issuer's GOULT rating or its equivalent is the starting point for our analysis. Given the close alignment between the two types of debt, we generally rate GOLT debt no more than one notch lower than the local government's GOULT rating. The pledged tax revenues for both GOULT and GOLT debt are derived from the same economic base. Local governments also typically budget both GOULT and GOLT debt service expenses as part of their general financial operations. Moreover, even the technically unlimited GOULT debt service pledge of a local government can come up against practical or economic limitations that impede the extent to which taxes can be raised.

The actual limitations for GOLT debt and the practical effect of a limitation vary between states and even sectors within a state. The legal framework of a tax limitation is often defined in such a way that the practical restrictions on a local government's ability to pay do not result in a measurable credit risk difference between GOULT and GOLT debt. Some state limitations provide a local government with a process that allows it to override the limit. GOLT debt is often additionally secured by a broad revenue pledge, such as a full faith and credit pledge, greatly reducing the legal and practical difference between the GOULT and GOLT pledges. Governments whose GOLT debt is only secured by a separate, dedicated levy may have additional taxing margin to cover projected growth in GOLT debt service or potential declines in assessed valuation. In cases where we determine that there are sufficient factors to mitigate the effect of the limitation, we rate the GOULT and GOLT debt at the same level. When there are insufficient mitigating factors, we typically rate GOLT debt one notch below the GOULT rating, and in rare cases, more than one notch.

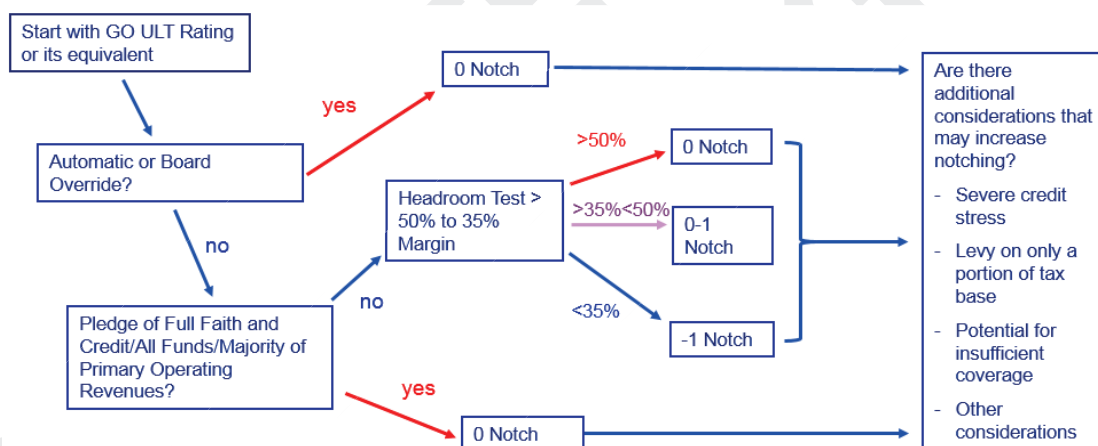
The lower bound of an issuer's GOLT bond rating is typically defined by the rating on an issuer's lease revenue or lease appropriation debt, should any exist. A lease-backed or appropriation obligation is almost always subject to appropriation or abatement risk, and typically has one critical trait – there is no specific

pledge of revenue or obligation of the local government to levy taxes to repay the lease.¹⁴ Outside extraordinary circumstances, we view bonds backed by a GOLT pledge to be at least as creditworthy as bonds secured by lease and annual appropriation revenues. GOLT bonds are not subject to annual appropriation or abatement risk, and GOLT bonds have an identified and, in many cases, pledged revenue stream for repayment, however limited.

There are three principal factors in our assessment of whether GOLT debt is rated the same as the GOULT rating or a notch below. These factors are: the ability to override the limit, the presence of a broad revenue pledge for the limited tax debt, and the amount of headroom relative to the limit. Sufficient strength in any of these factors typically leads to GOLT rating at parity with the GOULT rating. Thus, we may not assess each factor for each issuer. We also typically evaluate any additional considerations that may result in one or more notches between the GOLT and GOULT rating, as further discussed below. The flow chart below provides a schematic that illustrates our approach.

EXHIBIT 7

Summary of the Principal Factors in Assessing Whether the GOLT Rating is the Same as the GOULT Rating, One Notch Below, or Potentially Lower



Source: Moody's Investor Service

Factor 1: Assessing Whether the GOLT Debt Issuer Has the Authority to Override the Limitation

We assess the authority of a GOLT debt issuer to override the tax limit. Many states with local government entities that issue GOLT debt have legal provisions that allow local governments to override or exceed taxing limitations. We classify override provisions into three broad categories: automatic overrides; board overrides; and public votes to override. Each type of override has a process the local government must follow in order to exceed the tax limit. Our assessment of how much of a barrier the override process poses defines whether the GOLT rating can be brought to parity with the GOULT rating based on the strength of the override. We rate GOLT debt the same as the GOULT rating for automatic and board overrides, but overrides that require a public vote are not sufficient to rate at parity.

- » Automatic overrides. We categorize an override as automatic if there is a legal mechanism that increases the property tax beyond the limitation without need for specific approvals. Automatic overrides would typically include situations where the state or an independent body has a formulaic or ministerial approach to determining if an override is warranted to meet debt service. For instance, if a property tax levy were limited in nature, but a state entity reviewed assessed property values relative to

¹⁴ For more information, see our methodology that describes our general approach for assessing lease, appropriation, moral obligation and comparable debt of US state and local governments. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

the level at the time of the locality's bond issuance and automatically adjusted the levy to generate revenues sufficient to meet debt service, it would constitute an automatic override.

- » Board override. Board overrides require the approval of the elected members of an issuing entity's governing board to exceed limitations on property tax revenues. Since there is little or no requirement for formal public approval, the limitation is subject only to board willingness. Given that the local government has direct control over the override, we generally rate GOLT debt the same as GOULT debt issued by local governments with this ability. In some rare cases, board willingness may be constrained by political considerations that result in limiting financial flexibility as if the override did not exist. In such cases, this would usually reflect an overall weakening of credit quality and impact the GOULT and GOLT ratings similarly.
- » Public vote to override. Local governments within certain states can exceed a property tax limitation only with the approval of local voters. The process is slower and more uncertain than an automatic or board override, and therefore has more limited effectiveness in insuring adequate resources for debt service. Accordingly, the ability to override the tax limit only with a public vote does not warrant rating a government's GOLT debt at the same level as its GOULT rating.

Factor 2: Assessing Whether the GOLT Debt Carries a Broad Revenue Pledge

GOLT debt falls into two broad categories with different risk profiles: 1) debt that is backed by an issuer's full faith and credit or similar broad revenue pledge that includes property tax limitations; and 2) debt that is backed only by a dedicated, limited rate, tax levy without a full faith and credit or similar pledge. This is a key distinction because the full, faith and credit pledge, or a similarly broad pledge of "all funds" or "a majority of primary operating revenues," encompasses all or most of a local government's resources, including all available revenues, and not just the revenues generated by single limited property tax.

The strength of the broad revenue pledge is the government's obligation and ability to marshal all of its resources to cover debt service. The broad pledge allows local governments to manage the payment of GOLT debt service in conjunction with the payment of GOULT debt service, if any exists, and all other operating expenses. A GOLT debt issuer with a broad revenue pledge is able to adjust its financial operations to prioritize the payment of all of its debt over other operating expenses, minimizing if not eliminating the risk differential between GOULT and GOLT debt. This is not only the case for local governments with one tax levy for all operating expenses, including debt service, but for those with dedicated limited property taxes for debt service, as long as the pledge on the GOLT debt includes most or all of their operating revenues. For most GOLT debt issuers that have a broad revenue pledge such as the full faith and credit pledge, we rate the GOLT the same as the GOULT rating.

There are also broad general revenue pledge securities that are not defined as a full faith and credit and the limitation is not based on ad valorem taxing power. The limitation is rather defined by certain funds or revenues that include the majority of the local government's operating revenues. If the security description in the offering documents states that the pledge is a general obligation, or the general obligation pledge is made clear elsewhere in the offering documents, the bonds are rated under the GOLT methodology. If the security is not clarified as a general obligation pledge, the security would be rated under our methodology for rating lease, appropriation, moral obligation, and comparable debt of US state and local governments.¹⁵

¹⁵ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Factor 3: Assessing Whether the GOLT Debt Issuer Has Sufficient Taxing Headroom

For GOLT debt secured by a dedicated tax levy which has neither an automatic/board override nor a full faith and credit or similarly broad pledge, the only revenue flexibility to pay debt service is reflected in taxing margin under the tax levy limitation. We assess the extent to which taxing margin is available to pay debt service by calculating or estimating taxing headroom, as discussed below.

We define taxing headroom as a GOLT issuer's projected capacity to generate additional property tax revenue within the legal limitation relative to debt service requirements. Taxing headroom is based on the projected maximum levy based on current taxable assessed valuation, less the current levy used for debt service, divided by GOLT maximum annual debt service (MADS), including debt service on all outstanding GOLT debt and our projection of additional GOLT debt (which may include authorized but unissued GOLT debt). For clarity, we would not include MADS on GOULT debt.

- » Taxing headroom = (projected maximum levy – amount of current levy used for debt service)/MADS
- » Projected maximum levy = maximum allowable tax rate x issuer's taxable assessed value (typically, current taxable assessed value is used, but in situations of a shrinking tax base, we may use a forward-looking taxable assessed value in the calculation).

This ratio provides insights into the additional tax revenue capacity available to the issuer, relative to MADS. Since this ratio does not include any haircut to the legal ability to raise the levy based on the local government's willingness to raise rates, in most cases we do not factor any assessed value growth into the calculation.

We rate dedicated levy GOLT debt a notch lower than the GOULT rating when a local government with no automatic/board override and no full faith and credit or similarly broad pledge has taxing headroom falling below 35% of MADS. For these issuers, we rate GOLT debt the same as the GOULT rating when a local government has taxing headroom that is greater than 50% of MADS. When headroom falls between 35% and 50% of MADS, we may rate GOLT debt at par with or a notch below the GOULT rating based on an overall prospective assessment of headroom, including tax base trends, the local economy and other considerations that provide directional indication to the level of headroom as a cushion relative to MADS. The rating of GOLT debt with headroom that is likely to return to 50% or more or where the strength and stability of the tax base makes further deterioration highly unlikely will in most cases remain at parity with the GOULT rating. When GOLT debt headroom is likely to dip below 35% or where tax base trends provides limited confidence in future levels, the GOLT debt is likely to be rated below the GOULT rating.

Some GOLT pledges include revenues from other non-property taxes, such as on sales or income, in addition to the dedicated property tax. While these additional revenues do not constitute a full faith and credit or similar pledge of most or all of a local government's resources, the GOLT debt issuer may have additional margin to raise those taxes to contribute to the payment of debt service. As such, we include in the taxing headroom calculation any taxing margin a local government has in other taxes if they are specifically pledged to the GOLT debt.

Additional Considerations that May Warrant a Greater Differential between GOLT and GOULT Ratings

In certain infrequent cases, the specific credit characteristics of a GOLT pledge may lead to a rating that is lower relative to the GOULT rating than the outcome of applying the criteria in Factors 1, 2 or 3 would imply. The additional considerations include those that follow.

Severe Credit Stress: As a GOLT debt issuer's GOULT rating moves into the middle to low non-investment grade range, additional considerations may further expand the risk differential between the GOULT and GOLT rating. These low rating levels imply severe local government distress and elevated probability of default. Uncertainty around how a distressed local government manages its operations, including the payment of debt service, may increase the importance of the unlimited tax pledge relative to the limited tax pledge. As local governments approach default, we may adjust the differential between GOLT and GOULT based on our issuer-specific expectations regarding relative recovery rates for GOLT and GOULT debt.

Levy on only a Portion of the Base: We may also rate GOLT debt lower relative to the GOULT rating for local governments with investment grade GOULT ratings in rare cases where additional constraints exist. For example, some GOLT debt has a pledge of a dedicated tax levy on only a portion of a local government's tax base. In these cases, not only is the pledge on a specific limited tax, but the base from which the tax is levied is also limited relative to the base from which the tax pledged to GOULT debt is levied. The difference between the GOLT and GOULT ratings may widen depending on how much smaller the portion of the base pledged to GOLT debt is from the base pledged to GOULT debt. If the portion pledged to GOLT debt has a fundamentally different profile than the GOULT base, such as elevated concentration in specific tax payers or industries, the difference between the ratings may also widen.

Potential for Insufficient Coverage: An issuer's GOLT rating may have additional distance below its GOULT rating when our forward-looking view indicates that the revenues from a dedicated levy will narrow to the extent that they could be insufficient to cover 100% of limited tax debt service. This may occur, for example, when a local government's tax base declines sharply over one or several years and the particular limitation prevents it from increasing the rate to counteract the loss in value. If the GOLT debt does not have the broad revenue pledge, the GOLT debt issuer may have few to no options to make full payment of the debt if the limited tax revenues continue to fall.

For example, certain GOLT bonds may be supported by a specific, voter-approved millage, but a severe recession might cause a very material decline in tax base, resulting in declining pledged revenues that, if they were to continue on the same trajectory, would become insufficient to cover debt service. In these cases, GOLT bonds would likely be rated more than one notch below the GOULT rating, particularly if the GOLT bonds did not benefit from any structural protections to offset the risk of insufficient revenues, such as a debt service reserve fund.

Enterprise Exposure: GOLT debt can be issued by special or limited purpose entities such as hospital districts or community colleges that are able to issue general obligation bonds with a pledge of proscribed property taxes levied within their district, but are not general governments, and which engage in enterprises that have some degree of competitive exposure and risk. For limited tax debt of these issuers, a broad "full faith and credit" pledge may not confer the same powers that a general government possesses. Often, the revenues that these issuers can levy are inherently significantly narrower than those of general local governments. For this reason, their GOLT ratings may have a greater differential below the GOULT rating.

Moody's Related Publications

Credit ratings are primarily determined by 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. An 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](#).

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