

Municipal Credit Research
U.S. Public Finance Methodology

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Morningstar's state government credit analysis is prospective in its outlook, and reflects on our expectations of an entity's projected ability to meet its debt service obligations through the life of its bonds. We incorporate both recent measures and historical trends into our analysis. In our view, doing so allows us to assess an entity's current strength, and to gauge and predict when and how future change may occur. We review data from a variety of sources, including federal and state agencies as well as local governmental disclosures. Additionally, Morningstar employs proprietary metrics to ensure a complete analysis. The U.S. public finance criteria cover three major sectors: states, local governments (counties, cities, school districts, community colleges, and special districts), and enterprise systems (water/sewer, public power, health care, higher education, housing, transportation, and ports). The overarching criteria serve as an umbrella for all three sectors, illustrating the main pillars that drive Morningstar's analysis across the disparate sections. Further sector-specific description is available under the applicable sector methodology pieces.

Four pillars drive the Morningstar assessment for all sectors under U.S. public finance:

1. Economic Strength
2. Financial Condition
3. Debt and Long-term Liabilities
4. Management and Operating Environment

For each of the four pillars, Morningstar assigns an analyst-driven score ranging from Good to Poor. For enterprises, we include a fifth pillar: Scope of Operations and Market Position. The pillar scores are then combined to arrive at an Overall Score, which reflects our overall opinion about the credit quality of the entity.

A Good overall score indicates a very high quality credit with limited risk exposure. These credits are expected to remain safe, sound investments for the foreseeable future.

A Fair overall score indicates a mid-range quality credit. While a moderate amount of risk exists, these issuers are still considered to be safe investments by Morningstar.

A Poor overall score indicates a below average credit compared to other public finance credits. In the vast majority of cases, these credits are expected to continue to make debt service payments in a timely manner. Despite this, Morningstar only recommends them to investors with a tolerance for risk.

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Economic Strength

Analysis of the strength and stability of an entity's economic condition is central to Morningstar's approach to credit analysis for all sectors. An entity's economic profile drives the demand for services and expenditures, as well as the revenue-generation capacity to support service needs, overall municipal operations, and debt repayment. For debt with certain security structures, such as a general obligation pledge or various special tax obligations, the economic tax base is also the ultimate legal source for bondholder security. To understand an entity's economic profile, we review the basic type of the economy and the major industries, employers, and taxpayers driving economic activity; the entity's current market valuation and growth trends; and its demographic characteristics including population, wealth, and labor force measures.

Economic Type and Scope

Morningstar evaluates basic economic type and scope in order to understand an entity's overall stability and resilience during economic disruptions. We review the key industries in the area, as well as employer and taxpayer concentration, to gauge economic base diversity. Generally, Morningstar expects highly diversified economies to remain more stable than those concentrated in a particular industry or taxpayer over the longer term. This is significant on both the governmental and enterprise level, as both revenue-generation ability and expenditure demand depend on the underlying economic structure and performance of the service area.

For local entities, we also assess whether the area serves as a regional economic center or how far it is from one. Additionally, we examine whether there is an institutional presence, such as a large university, that dominates its economic base. Although many institutions are exempt from paying local property taxes, they often serve as major customers for enterprise systems and sources of long-term employment for local residents, providing some stability to the base.

Demographics

A population's ability to pay is an important factor in Morningstar's approach to credit analysis. Morningstar reviews trends in population size and age as indicators of revenue-generating strength and expenditure drivers. Rapid population growth could indicate a strong economy as well as the need for additional capital and resources to support a more populous service area. Conversely, waning populations could indicate an industry's decline and job losses in the area, possibly pressuring both revenue-collection rates and social service demands. We also consider the compositional elements of population growth and decline; changes in the ratio of working age population (ages 18-65) to those being supported (younger than 18 and over 65) help inform our understanding of future revenue flows and expenditure burdens. Additionally, we review school enrollment trends, especially for jurisdictions charged with funding education.

Our analysis also incorporates various measures of wealth, both on a per capita and household basis. We review poverty rates and income indices both in absolute values and relative to area, state, and national averages. Housing characteristics such as median home values, building permit trends, and foreclosure rates are also considered. These measures, coupled with employment data including the size of the labor force and unemployment, provide an

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understanding of an area's overall economic health and its ability to produce financial resources.

Market Valuation and Growth Trends

For entities that have the ability to levy a property tax, the assessment of their full property valuation helps determine the ability of each entity to generate revenue. Full market value reflects the price that the property would fetch in the marketplace, and in our opinion, entities with larger market valuations have a greater ability to absorb costs associated with higher taxes and fees. This makes it easier to generate income if needed. Market valuation is also a key credit concern on the local level, as general obligation bonds are ultimately secured by a pledge of property tax revenues.

For local governments, Morningstar considers the current full and assessed valuation as well as historical average annual changes and recent building permit activity. When examining U.S. states, the review is focused on measures of total gross domestic product. The analysis also considers growth by market and industry sector as an indication of future performance.

Financial Condition

Morningstar's analysis of an entity's financial condition includes a review of operating consistency and reserve levels. Our analysis includes an overview of all funds over time, with emphasis placed on the general fund as well as the debt service fund and any other major governmental funds the analyst may deem to be material or significant. We review balance sheet measures such as cash positions and fund balances, which contribute to our understanding of an entity's liquidity position. We also consider revenue diversity and volatility, expenditure flexibility, and various budgeting practices to inform us of a government's overall financial health and stability. In general, entities with greater financial flexibility are better positioned to manage unforeseen stress factors, and are consequently expected to expose bondholders to lower levels of risk.

Balance Sheet Analysis

Key metrics in our financial health assessment include operating fund balance levels and cash positions, both in absolute terms and as a percentage of spending. These ratios serve as measures of resources available to mitigate pressures resulting from unforeseen changes in revenues or expenditures. As noted under the management pillar discussion, Morningstar recognizes that various reserve levels and cash positions are appropriate for different organizations. However, we note trends of declining reserves and narrowing cash as potential credit concerns. Morningstar's balance sheet analysis also entails a review of the entity's assets and liabilities, incorporating a detailed assessment of receivables and likelihood of receipt, and an entity's liquidity needs throughout the course of the fiscal year.

Revenue Diversity and Volatility

Morningstar reviews an entity's revenue sources and growth trends to assess whether they match an entity's budgetary needs. We examine whether income is derived from a narrow or diversified set of sources, and the relative volatility of each source. Additionally, we review whether revenue growth comes from recurring sources, or are simply driven by one-time

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events, allowing us to further discern future income statement stability. Entities with diverse revenue streams, and whose revenue growth is both sustainable and recurring, tend to perform better in challenging economic climates.

Expenditure Flexibility

To understand an entity's expenditure flexibility, we evaluate general cost drivers, expenditure growth rates, and the entity's ability to control spending locally. We determine the proportion of fixed costs through a review of items such as debt service and pension contribution schedules, and we note to what extent the government services offered are required or discretionary. An entity with a higher proportion of fixed costs and that offers more services that are required by policy or legislation generally has less local control over annual spending and less flexibility to react to exogenous stressors.

Debt and Long-Term Liabilities Profile

In the debt and long-term liabilities analysis, Morningstar examines an entity's long-term financial commitments, including debt, pension, and other post-employment benefit (OPEB) obligations. Analysis of debt obligations includes an examination of the debt burden as well as the debt structure and projected future debt needs and capacity. Ultimately, Morningstar is assessing the entity's ability to meet these obligations over their maturity schedule and the accompanying impact on the overall financial profile. Capital needs are analyzed to project what the debt profile will look like over the medium term. Additionally, the entity's ability to identify and maintain capital needs is critical, as deferred maintenance can lead to larger capital costs in the future or negatively impact potential economic activity.

Debt Burden

Debt burden measures the extent to which an entity leverages its revenue base. As major revenue streams differ by sector, we analyze the debt burden using varying methods. However, for all sectors we examine debt levels relative to the service area base (per capita or per customer) and as a percentage of spending. We look at debt as a percent of the property tax base for local governments and as a percent of personal income on the state level. For non-general obligation debt, including enterprise sector debt, debt service coverage and legal covenants are key rating drivers.

We also evaluate an entity's use of short-term debt and compare it with the entity's liquidity position and timing of cash flows. As short-term debt is scheduled to mature, Morningstar will consider the entity's market access as well as its plan either to retire the debt or to provide long-term financing.

Morningstar's debt calculations may differ from an entity's definition under certain circumstances, as we consider all debt supported by the service area. Short-term and long-term debt, overlapping debt as applicable, as well as capital leases and lease revenue obligations are included, while self-supporting debt from enterprise revenues is excluded.

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Debt Structure

The use of various security structures and the current amortization schedule, as well as variable interest rate and derivative products, are factored into Morningstar's analysis of debt. The debt structure may serve as an offsetting factor to the debt burden, depending on future capital needs. In general, the life of the bonds should be no longer than the useful life of the project.

For variable rate debt, Morningstar considers the terms of the current liquidity agreement and procurement plans for future liquidity. We examine interest rate swaps, including the mark-to-market (MTM) calculation and the entity's ability to absorb termination costs or collateral requirements if necessary.

Capital Needs

An entity's upcoming capital needs are a key driver for its future debt burden and financial flexibility. An entity's ability to identify and fund necessary capital needs without significantly hindering financial flexibility is critical to long-term credit stability.

Morningstar looks favorably upon the presence of a regularly updated, multiyear capital improvement plan (CIP), which outlines an entity's projected capital needs and projected funding sources. We consider an entity's infrastructure needs relative to stage of development. For instance, we expect areas experiencing rapid population growth, or whose infrastructure is aging, to have more substantial capital needs than those in the middle of their infrastructure cycle.

Morningstar also considers funding sources for upcoming capital projects. A high proportion of pay-go capital funding limits the debt burden and provides additional financial flexibility in economic downturns, given that projects can be delayed, or alternatively funded. We analyze projected bond funding in the context of the debt burden, with any substantial change in the expected debt burden potentially leading to a change in the rating. However, Morningstar notes that capital plans are used as planning tools in differing capacities, with some including projects and funding that are definitely expected to occur, while others compile more of a "wish list," some of which may not materialize fully over the life of the plan.

Future Debt Capacity

We analyze an entity's future debt capacity in relation to projected capital needs, existing debt burden, and expected amortization schedule. The current debt service structure factors into future debt and financial flexibility; declining future debt service is a credit positive, while escalating debt service could hinder an entity's ability to meet its capital and liquidity needs going forward. Morningstar considers the ten year amortization rate as a marker for future debt flexibility.

Morningstar also evaluates legal constraints on debt issuance, as discussed under the legal constraints section. From a credit perspective, such constraints negatively affect an entity's operating flexibility, but a history of strong voter support is also considered a positive if restrictions are in place.

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Pension and OPEB Liabilities

Other long-term liabilities, largely consisting of pension and OPEB obligations, are included under an entity's debt analysis, as they represent long-term future costs. In most cases, they are recorded as soft liabilities, as projected obligations are affected by investment returns and actuarial assumptions, while future benefits can be adjusted under certain circumstances. However, some jurisdictions have issued bonds in order to fund these future costs, converting the soft liability into a hard liability.

For both pension and OPEB liabilities, Morningstar evaluates the magnitude of the liability and assesses the entity's ability to meet these obligations over the long term along with the accompanying projected impact on future financial flexibility. Key components of Morningstar's pension analysis include historical actual pension contributions relative to the actuarial required contribution, the funded ratio, and pension contributions as a percentage of total spending levels. The feasibility of investment return assumptions are considered when analyzing long-term liabilities, along with each plan's asset valuation methodology.

We also consider the level of benefits provided under OPEB, including whether the benefit is implied or explicit, whether spouses and dependents are covered, as well as if benefits cease upon the start of Medicare eligibility. While most entities still fund OPEB on a pay-as-you-go basis, the funding of the full actuarial required contribution is a credit positive. OPEB spending as a percentage of total spending and the funded percentage are also considered.

Management and Operating Environment

Management's willingness and ability to secure the financial stability of an entity through all stages of an economic cycle are key drivers of our public finance credit ratings. A strong government team maintains fiscal discipline during positive revenue environments and makes appropriate budgetary adjustments during economic downturns. Major areas considered under Morningstar's management analysis include adherence to fiscal and debt policies and fiscal planning methods, as well as disclosures and accounting practices. Morningstar also analyzes each entity's operating environment, consisting of legal constraints, political atmosphere, and market position, all of which affect an entity's ability to manage. While legal constraints establish quantifiable limitations on fiscal authority, qualitative factors such as political environment and market position can be equally important, often creating practical barriers that impact operations.

Fiscal Policies

The implementation of and compliance with prudent fiscal and debt policies are prime examples of management's direct impact on overall credit quality, and Morningstar views them positively. While policies can either be self-implemented or mandated by outside entities, management is a critical determinant of the entity's ability to remain in compliance with such policies. An operating reserve policy, usually in the form of a fund balance or contingency reserve requirement, is among the most frequently implemented fiscal policies. It is a key indicator of sound management, as it provides a buffer against cyclical downturns or

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unforeseen budget variances. Because a "one size fits all" approach does not accurately indicate an appropriate reserve scale for all public finance entities, Morningstar analyzes the relative soundness of reserve levels in relation to many factors, including the ability to increase revenues, revenue and expenditure volatility, and service area growth rates, as well as infrastructure and regulatory needs. For enterprise-related entities, we also review a liquidity policy in the same manner.

Debt policies typically limit the maximum debt burden and potential debt structures, including the use of derivatives, maximum maturity, and alignment of the expected life of a project with the final bond maturity. Other policies delineating practices for investments, transfers, balanced budgets, and the use of one-time revenues are also examined as fitting the entity and its needs.

Maintenance of timely disclosure, including the regular release of audits, is also a sign of managerial discipline. Morningstar uses comprehensive annual financial reports (CAFRs) to analyze financial, economic, and debt profiles. We monitor the historical and timely release of CAFRs, as well as the presence of any audit findings. Additional best practices for accounting include adherence to Generally Accepted Accounted Principles (GAAP) and Governmental Accounting Standards Board (GASB) standards.

Fiscal Planning

We consider the effective use of short- and long-term fiscal planning, including the timely adoption of annual budgets and the use of multiyear financial plans. Morningstar considers ongoing budgetary monitoring and the ability to make effective midyear budget adjustments to be credit positives.

Morningstar evaluates an entity's historical year-end financial results as compared with original operating budgets to gauge management's ability and willingness to accurately predict and react to its operating environment. A review of future budget assumptions and forecasting practices also informs us of the reliability of expected financial performance.

Legal Constraints

Constitutional and statutory rules shape the environment in which all institutions operate. Local entities derive their powers from state government, such that they are ultimately beholden to the legal and operating environment passed down to them from the state level. Though states themselves are sovereign, they too have varying degrees of fiscal flexibility depending on the mandates imposed on them by the federal government and state constitutional limits. Contingent on underlying changes in the economic and demographic environment, legal provisions may enhance or hinder entities' ability to execute actions with positive rating effects.

Legal limits on governmental and enterprise fiscal autonomy may originate from federal mandates, state constitutional and statutory provisions, court rulings, and local charters. The source of the legal constraint is an indicator of the provisions' level of changeability; federal and constitutional rules are largely immutable, whereas statutory provisions and court rulings may be amended and overturned with changing legislatures and judiciaries. In voter initiative states,

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entities may be subject to unpredictable changes in the operating environment as voter referenda spur legislation that places new responsibilities and fiscal burdens on state and local authorities.

For both governmental and enterprise issuers of debt, legal constraints on fiscal flexibility take the form of limits on revenue-raising capacity, expenditure autonomy, and debt issuance authority. Depending on the issuer, a varying amount of these restraints may be relevant. Limits on revenue-raising capacity can take the form of legal rules on taxing authority or restrictions on rate and assessment increases. Expenditure autonomy can be restricted through federally or constitutionally mandated appropriation requirements, regulatory standards, and legal expenditure limits. Debt issuance authority and debt ceilings are also often legally codified for governmental issuers. The effect of these types of provisions on fiscal decision-making depends on the language, degree to which they are imbedded, and override mechanisms, as well as political will to execute laws as intended. Other legal provisions considered by Morningstar include right-to-work legislation, as well as well as state oversight over local fiscal distress and municipal bankruptcy authority.

Political Environment

For state and local governments, political factors such as legislative party alignment and gubernatorial veto power are informative for assessing resistance to political stalemates, especially in areas where supermajority authorization is required to overturn existing tax, expenditure, or debt limitations. Labor relations also play a critical role in enhancing or hindering an entity's ability to negotiate staffing levels, worker compensation, and post-employment benefits, and ultimately control expenditures. In areas where voter authorization is required for debt issuance or revenue increases, a history of voter support is also considered.

Market Position

Market position measures the entity's ability to attract and retain a customer base. Although the significance of market position varies between sectors, it serves as a critical component for both enterprise systems and governments. Enterprises often compete with each other for market share, and local governments also compete with other entities for population and corporate inflow.

An entity's scope of operations impacts its potential customer base. Analysis of the scope of operations considers the size of operations as well as the diversity of services offered. A larger scope of operations can buffer against economic cyclicality, contribute to economies of scale, and broaden the potential customer base.

Competition measures the saturation of entities that provide similar services throughout the service area. In sectors where market competition could be a concern, Morningstar considers an entity's market position relative to its peers, reviewing the essentiality of products and services offered, rate structure, and service delivery systems. A high degree of area competition can put a practical constraint on an entity's rate-setting ability. Perceived value of the service rendered as well as demand for services can also affect market position.

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