

# U.S. Public Finance Tax-Supported Rating Criteria

## Master Criteria

This criteria report updates and replaces "U.S. Public Finance Tax-Supported Rating Criteria," dated May 31, 2017. The only material changes to those criteria relate to the analysis of moral obligation pledges and state dedicated tax bonds. Other revisions to the report are designed to improve clarity but are not substantive changes to the rating approach for U.S. state and local government credits.

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### Scope

This report outlines the criteria that apply to the rating of new and existing debt issued by or on behalf of U.S. state and local governments. Section 1 of the report details the criteria used to determine the general credit quality of the entity responsible for repaying the debt. Section 2 addresses how Fitch determines ratings for specific security structures. The Fitch Analytical Sensitivity Tool – States & Locals (FAST), discussed on page 17 and in Appendix A, and the rating approach for appropriation-backed bonds discussed on page 25 can also be used in assigning ratings in other U.S. Public Finance sectors where applicable.

### Key Rating Drivers

**Sector Risk Profile Strong:** The starting point for analysis of U.S. state and local government issuers is recognition of the core features that credits in this sector share by virtue of their operation within the U.S. Given the strength of these fundamentals, most ratings in this sector range from 'AAA' to 'A-', all denoting high credit quality, although individual ratings can be significantly below this level due to specific credit features or concerns.

**Economic Analysis Establishes Foundation:** Issuer-specific analysis begins with consideration of the performance of, trends in and prospects for the economic base. This is critical to understanding the overall risk profile and serves as the foundation for the key rating driver assessments that place the credit within and sometimes outside the normal rating range.

**Four Key Drivers Assessed:** Fitch has identified four key rating drivers that play a significant role in the rating outcome for a given issuer in the context of its economic base — revenue framework, expenditure framework, long-term liability burden and operating performance. The factors cover both the institutional framework in which an issuer operates, which varies by level and location of government, and performance within that framework. Fitch publishes specific rating category evaluations for each driver, with analysis focused on long-term trends and expectations.

**No Standard Weighting of Factors:** The ultimate rating outcome is the result of consideration of issuer-specific qualitative and quantitative factors. There is no standard weighting of factors. The significance of risk elements can shift quite rapidly over time and/or differ markedly across issuers.

**Asymmetric Additional Risk Considerations:** In addition to the key rating driver assessments discussed above, the final rating assigned also considers certain additional risk factors that may affect the rating conclusion. These additional risk factors work asymmetrically, where only below-standard features are factored into the final rating levels. For U.S. state and local governments, these risk factors are management and economic characteristics that are significantly outside the U.S. norm.

**Rating Through the Cycle:** Fitch creates a scenario that considers how a government's revenues may be affected in a cyclical downturn and the options available to address the resulting budget gap. Rating category expectations and metric guidance recognize that an issuer's fiscal position will fluctuate through an economic cycle. This approach conveys the range of performance where a rating would be expected to remain stable and allows a better understanding of the potential for rating changes.

**Bond Ratings Reflect Pledge:** Ratings are assigned to specific securities based on their legal provisions and relationship to or separation from the general credit quality of the related government, which is expressed through an Issuer Default Rating (IDR).

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## Related Criteria

Rating Criteria for Public-Sector, Revenue-Supported Debt (February 2018)

U.S. Public Finance Short-Term Debt Rating Criteria (November 2017)

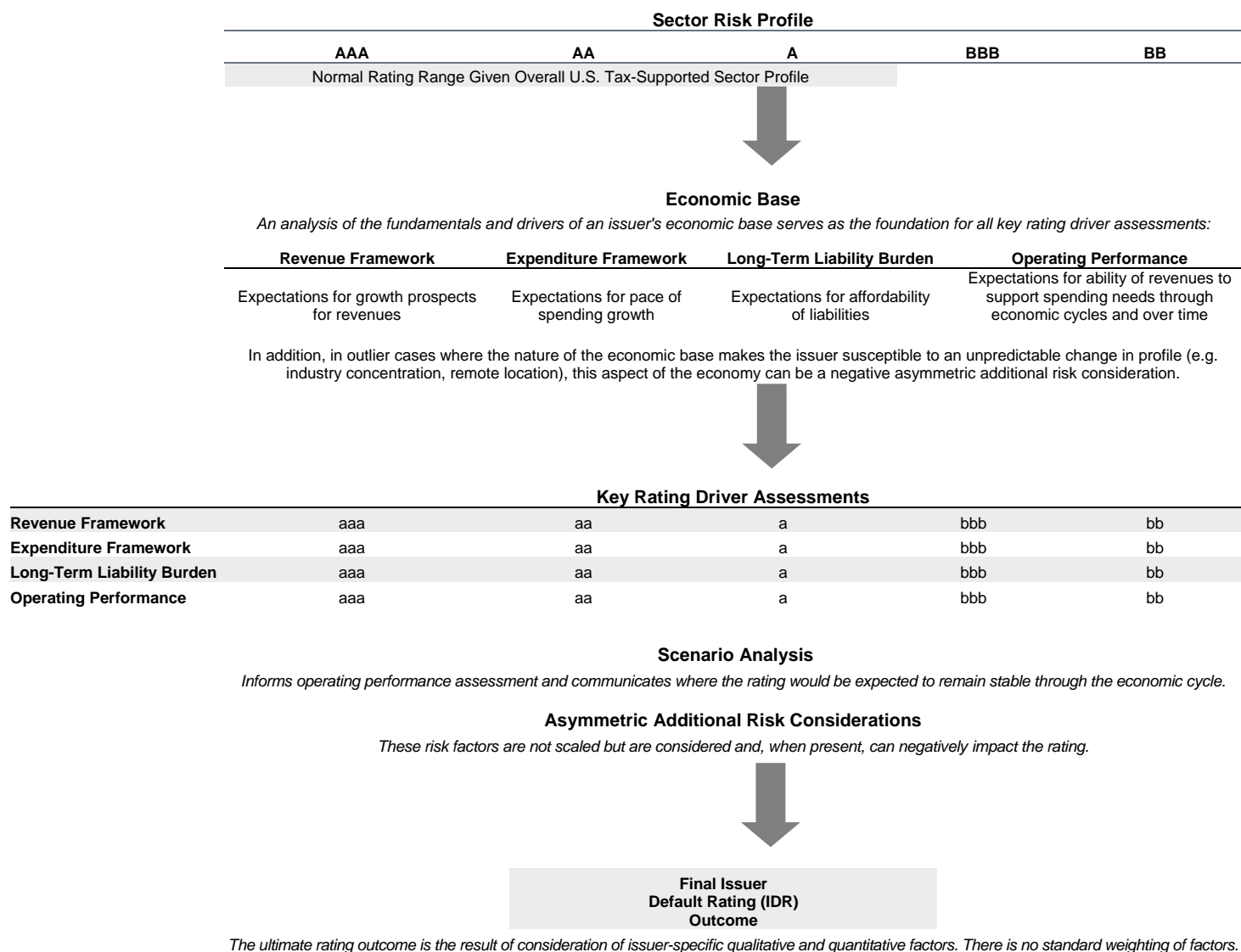
Public-Sector Counterparty Obligations in PPP Transactions Rating Criteria (December 2017)

## Section 1: Determining General Credit Quality (IDR)

Fitch assigns IDRs to state and local government tax-supported debt issuers to communicate the relative general creditworthiness of the government and its ability to meet its financial commitments.

As discussed in more detail in Section 2, certain securities are rated on a basis distinct from an issuing government's IDR as a result of legal firewalls that insulate them from any financial distress or bankruptcy of the related government.

## Overview of Issuer Default Rating Framework



## Summary of IDR Rating Framework

The sector risk profile provides a starting point for rating an issuer within the U.S. tax-supported sector, establishing a range of normal rating outcomes ('AAA' to 'A-') based on shared fundamentals. The analyst then considers a specific issuer's risk profile within the context of the sector fundamentals.

In analyzing the specific issuer's risk profile, evaluation of the performance of and prospects for the economic base is the critical first step. Fitch's view of the economy provides the foundation for the appraisal of the four key rating drivers that Fitch believes play the most significant role in determining the rating outcome for a given issuer.

Consideration of the four individual key rating drivers helps position an issuer within the sector risk profile range and may occasionally take an issuer outside this range of ratings because of concerns specific to that issuer. Driver assessments, informed by rating category expectations, help frame an issuer's credit rating and provide a standard way of comparing issuers to one another. Although it is possible for assessments to be lower than 'bb', since these cases are rare and idiosyncratic, the tax-supported sector guidance is provided only through the 'bb' category. Fitch's rating definitions for rating categories below 'bb' guide assessments at the lower levels.

Guidance metrics support the consistency in the assessments of the four key rating drivers and, ultimately, the final rating outcome. These metrics can differ for state and local governments, due to both the different revenue streams and spending responsibilities of these varied levels of government and the relative availability of comparable data, which is higher for states than for local governments. Fitch notes that metrics reflect the historical record and need to be considered in context.

Scenario analysis is an important tool in Fitch's "through the cycle" approach to ratings, informing assessment of an issuer's operating performance and communicating where the rating would be expected to remain stable over the course of an economic cycle and relative to historical revenue volatility, including in the case of issuers where revenues may not exhibit a significant relationship (or "correlation") to the broader economy. Scenarios are not forecasts but simply convey possible performance in a downturn based on historical data and a common set of assumptions. Analysis considers not only how economic downturns affect individual issuers differently but also the relative ability to manage stress.

The use of scenario analysis provides visibility on which credits are more vulnerable to rating transition. Fitch believes that ratings should remain stable through normal cyclical fluctuations. A cycle of a depth or duration greater than that suggested by the scenario, which is designed to approximate an average downturn, could result in a higher level of rating transition. The Great Recession in the U.S. was such an event.

Fitch's rating analysis also considers whether certain additional risks may affect the rating conclusion. These additional risk considerations work asymmetrically, where only below-standard features are factored into the final rating levels. For tax-supported credits, management and economic characteristics that vary substantially from those of a typical U.S. state or local economy are the primary such risk considerations. Fitch notes cases where such asymmetric additional risk considerations affect the overall rating outcome. In addition, Fitch has identified asymmetric considerations for each of the four key rating driver assessments that, when relevant, are noted in the communication of each.

The ultimate rating outcome is the result of consideration of issuer-specific qualitative and quantitative factors. There is no standard weighting of factors. The significance of risk elements can shift over time and/or differ markedly across issuers.

Finally, Fitch notes that, given the nature of government credit, management decisions can always be influenced by political factors beyond Fitch's ability to predict. In recognition of this, the rating framework seeks to be as transparent as possible in outlining assumptions and expectations. Any conduct that indicates a government may choose to substantially impair its financial profile, such as actions or statements by decision makers that Fitch deems potentially detrimental to bondholders, negatively affects the final rating.

### **Strong Sector Risk Profile**

The starting point for analysis of U.S. state and local government credits is recognition of the core features that credits in this sector share by virtue of their operation within the U.S. Although this is not an explicit component of each issuer-specific analysis, as it is common to all, it provides the backdrop and underlies the strong expected rating range for U.S. state and local government issuers.

Macroeconomic and structural factors are a clear strength of both the U.S. sovereign credit and the credits of state and local governments within the U.S.

- The U.S. benefits from a large, rich and technologically advanced economy, high levels of human development, a favorable business climate and strong institutions.
- Rule of law and respect for property rights provide support for bondholder security. The legal framework governing subnational debt issuance and bondholder rights is well established and broadly consistent throughout the 50 states.
- The country's banking and financial system is sound, well-supervised and regulated.

The U.S. benefits from an established municipal market, and state and local government issuers generally enjoy good market access.

U.S. state and local governments possess significant autonomy in the U.S. government framework. The federal government's power to affect state and local operations and obligations is limited. Due to this autonomy, state and local government ratings in the U.S. are not capped by the rating of higher levels of government. For the same reason, Fitch's ratings for U.S. state and local government credits do not assume a federal government backstop or that the federal government would step in on an ad hoc basis to remedy an individual government's financial distress. Nevertheless, Fitch believes that operating within the U.S. economy and legal system is a significant positive credit factor.

Given the strength of these fundamentals, most ratings in this sector range from 'AAA' to 'A-', all denoting high credit quality, although individual issuer ratings can be significantly below this level due to issuer-specific credit risks. This sector risk profile range does not establish a rating floor and does not simply replicate the range of existing ratings in the sector. Rather, the range emerges from the core features common to U.S. state and local government credits.

### **Economic Analysis Establishes Foundation**

Fitch believes that a solid understanding of the drivers of and expectations for an issuer's economic base is critical to the consideration of overall credit quality. Fitch considers economic breadth and depth, composition/concentration, long-term trends and growth prospects to establish the context in which other rating factors are assessed.

## Economic Analysis: Key Considerations

State Governments	Local Governments
Growth trend in employment	Growth trend in employment
Growth trend in population	Growth trend in population
Growth trend in personal income	Growth trend in median household income
Unemployment rate	Unemployment rate
Per capita personal income	Median household income
	Market value per capita

Note: States and local governments slightly differ because of varying natures of revenue and spending frameworks and data availability.

Fitch's expectations for the economy inform the assessment of prospects for revenue growth, spending demands, the affordability of liabilities and the ability of an issuer to balance revenue and spending over time. In addition, if a particular economy is very concentrated or small or remote, such that the issuer is susceptible to a sudden and unpredictable change in profile, this represents an additional risk factor that can constrain a rating, all else being equal.

The evaluation of the economy begins with a determination of the types of economic activity that dominate in the area. Fitch identifies the major economic drivers for an issuer and their direction and considers factors that either enhance or inhibit expectations for growth. For issuers dependent on property taxes for a sizable portion of their revenue, Fitch pays particular attention to the level of and trends in the valuation of the total tax base and the largest taxpayers.

Fitch reviews trends in employment and seeks to understand why a significant sector or area has expanded or contracted. Historical and recent gains or losses in overall employment are evaluated to gauge general expansion trends and future prospects, as well as sensitivity to broader national and regional developments. Trends in unemployment are reviewed in the context of labor force changes and other factors that might have an impact.

Income levels are evaluated on both an absolute and a relative basis. Trends provide an indication of the rate of economic value being created, which has implications for future revenue performance compared to the region and nation. The industry breakdown of personal income, when available, is also a valuable analytical tool for understanding which sectors are most influential in the economy, both in their relative importance compared to other credits and performance over time.

Fitch reviews key demographic metrics, particularly population trends, considering the reasons why a particular area attracts or loses population to evaluate the likely future trajectory. Demographic structure and projections are important for assessing both revenue prospects and future expenditure pressures, including in healthcare and education.

Although population growth is usually considered a positive factor, population stability may not be a negative rating consideration, particularly for smaller communities that do not have a wide range of service demands and spending pressures. Conversely, high-growth areas can pose risks, as capital needs are often great, and providing the appropriate level of infrastructure and services to match, but not exceed, growth needs can be difficult.

## Four Key Rating Drivers

The four key rating drivers are assessed using the guidance table on the following page, which outlines general expectations for a given rating category. Subfactors in each case highlight the components that are most critical in making the assessment. All assessments are grounded in issuer-specific data.

## Key Rating Drivers

Revenue Framework	aaa	aa	a	bbb	bb
Growth Prospects for Revenues Without Revenue-Raising Measures	Strong <i>Growth in line with or above the level of U.S. economic performance</i>	Solid <i>Growth below U.S. economic performance but above the level of inflation</i>	Slow <i>Growth in line with the level of inflation</i>	Stagnant <i>Growth below the level of inflation or flat performance</i>	Negative <i>Declining revenue trajectory</i>
Independent Legal Ability to Raise Operating Revenues Without External Approval (In Relation to Normal Cyclical Revenue Decline)	High <i>Maximum revenue increase at least 300% of the scenario revenue decline</i>	Substantial <i>Maximum revenue increase at least 200% of the scenario revenue decline</i>	Satisfactory <i>Maximum revenue increase at least 100% of the scenario revenue decline</i>	Moderate <i>Maximum revenue increase at least 50% of the scenario revenue decline</i>	Limited <i>Maximum revenue increase less than 50% of the scenario revenue decline</i>
Asymmetric Rating Driver Consideration	The requirement for periodic re-authorization of existing revenue streams is a negative consideration.				
Expenditure Framework					
Natural Pace of Spending Growth Relative to Expected Revenue Growth (Based on Current Spending Profile)	Slower to equal	In line with to marginally above	Above	Well above	Very high
Flexibility of Main Expenditure Items (Ability to Cut Spending Through the Economic Cycle)	Ample	Solid	Adequate; legal or practical limits to budget management may result in manageable cuts to core services at times of economic downturn	Limited; cuts likely to meaningfully, but not critically, reduce core services at times of economic downturn	Constrained; adequate delivery of core services may be compromised at times of economic downturn
Asymmetric Rating Driver Considerations	Significant potential funding pressures, including outstanding or pending litigation, internal service fund liabilities and contingent obligations, can be a negative consideration in the expenditure framework assessment.				
Long-Term Liability Burden					
Combined Burden of Debt and Unfunded Pension Liabilities in Relation to Resource Base	Low <i>Liabilities less than 10% of personal income</i>	Moderate <i>Liabilities less than 20% of personal income</i>	Elevated but still in the moderate range <i>Liabilities less than 40% of personal income</i>	High <i>Liabilities less than 60% of personal income</i>	Very high <i>Liabilities 60% or more of personal income</i>
Asymmetric Rating Driver Considerations	The liability burden assessment could be negatively affected by high levels of derivatives exposure, short-term debt, variable-rate debt or bullet maturity debt or an exceptionally large OPEB liability without the ability or willingness to make changes to benefits. An exceptionally large accounts payable backlog can also negatively affect the long-term liability burden assessment.				
Operating Performance					
Financial Resilience Through Downturns (Based on Interpretation of Scenario Analysis)	Highest gap-closing capacity; expected to manage through economic downturns while maintaining a high level of fundamental financial flexibility.	Very strong gap-closing capacity; expected to manage through economic downturns while maintaining an adequate level of fundamental financial flexibility.	Strong gap-closing capacity; financial operations would be more challenged in a downturn than is the case for higher rating levels but expected to recover financial flexibility.	Adequate gap-closing capacity; financial operations could become stressed in a downturn, but expected to recover financial flexibility.	Limited gap-closing capacity; financial operations could become distressed in a downturn.
Budget Management at Times of Economic Recovery	Rapid rebuilding of financial flexibility when needed, with no material deferral of required spending/nonrecurring support of operations.	Consistent efforts in support of financial flexibility, with limited to no material deferral of required spending/nonrecurring support of operations.	Some deferral of required spending/nonrecurring support of operations.	Significant deferral of required spending/nonrecurring support of operations.	Deferral of required spending/nonrecurring support of operations that risks becoming untenable given tools available to the issuer.
Asymmetric Rating Driver Considerations	The operating performance assessment could be negatively affected by liquidity or market access concerns (in general, liquidity becomes a concern if the government-wide days cash on hand metric has or is expected to fall below 60 days); the risk of an outside party (e.g. another level of government) having a negative impact on operations; or evidence of an exceptional degree of taxpayer dissatisfaction, particularly in environments with easy access to the voter-initiative process.				
Asymmetric Additional Risk Considerations	In addition to the key rating driver assessments discussed above, the final rating assigned also considers certain additional risk factors that may affect the rating conclusion. These additional risk factors work asymmetrically, where only below-standard features are factored into the final rating levels. For U.S. state and local governments, these risk factors are management and economic characteristics that are significantly outside the U.S. norm.				

OPEB – Other post-employment benefits.

Fitch explicitly does not weight the assessments of individual key rating drivers in coming to an overall rating conclusion. There is no standard formula to link these inputs into an exact rating. The relative importance of factors is specific to the individual credit being considered.

As noted, the individual factor assessments inform but do not dictate the final rating outcome. Moreover, Fitch stresses that although the key rating drivers detail the significant factors that Fitch anticipates affecting U.S. tax-supported credit evaluations, they do not cover every possible credit consideration. In limited cases where a rating may be influenced by factors not articulated above, such will be detailed in the rating commentary for the associated rating action.

## Revenue Framework

Fitch considers two subfactors in assessing the strength of a government's revenue framework: growth prospects for revenues and the government's legal ability to raise revenues. The goal of this assessment is to establish expectations for the issuer's revenue system, incorporating both likely performance in the absence of policy action and the issuer's independent legal ability to make changes over time.

Third-party support can be a positive consideration in the overall revenue framework assessment in cases where Fitch believes the support can be relied on. The most obvious example of this is state support for K-12 education, which is fundamentally a state constitutional responsibility. In contrast, if the government relies on a material amount of third-party support that is subject to significant uncertainty or untested, this is a negative consideration.

Fitch notes that an issuer's revenue base may be narrower than its economic base. For example, a specific industry, such as natural resource production, may contribute a disproportionate share of tax revenues, resulting in a revenue base that is narrower than the economic base would suggest. Fitch's analysis focuses on the issuer's revenue base.

## Growth Prospects for Revenues

### *Metrics to Support Assessment*

#### **State Governments**

10-year performance of tax revenues (adjusted for the estimated impact of changes in tax policy) in comparison to growth in national GDP and inflation.

#### **Local Governments**

10-year performance of general fund revenues in comparison to growth in national GDP and inflation.

*Note:* Historical performance is used as a factor for consideration of future performance. Expectations for growth in line with or above the level of U.S. economic performance without the need for tax increases are consistent with a 'aaa' assessment; growth below U.S. economic performance but above the level of inflation, 'aa'; growth in line with the level of inflation, 'a'; growth below the level of inflation or flat performance, 'bbb'; and a declining revenue trajectory, 'bb'.

The assessment of growth prospects for revenues is driven largely by expectations for the issuer's economic performance and the nature of the revenue system as it relates to the issuer's economic base. The assessment is made without consideration of policy action a government could take to affect revenues, e.g. raising or cutting tax rates, but takes into account legal limits on the government's ability to capture economic growth that dampen expectations for revenue performance going forward. The analytical focus is on revenues that fund government operations, with less emphasis on revenues such as pass-through funds that are targeted for specific programs rather than general operations.

Fitch's analysis focuses on historical and expected revenue performance and risks rather than giving credit for revenue diversity as a stand-alone factor. In general, a diverse revenue system with a foundation of broad-based taxes is better able to capture an issuer's economic activity than one that relies on particularly narrow and/or variable revenues, such as real estate transaction taxes or hotel occupancy taxes.

The growth prospects for revenues subfactor is meant to consider the ability to capture economic growth rather than volatility. The assessment is guided by comparisons of actual historical revenue performance in relation to national GDP and inflation over an extended period, recognizing that more volatile revenue systems are likely to perform better or worse in a

given year based on the point in the economic cycle. The volatility of the revenue system is considered explicitly in the scenario analysis discussed below under “Operating Performance.”

Fitch recognizes that historical data can reflect specific changes affecting an issuer's revenue system, such as significant tax policy adjustments and/or location-specific economic changes. Time series information is adjusted for the estimated impact of tax policy changes in all cases for state governments, using data reported annually by the National Conference of State Legislatures. For local governments, consistent adjustments generally are not possible, but analysts incorporate such factors into the analysis of revenues. In cases where property taxes make up a material and generally consistent portion of total revenues, Fitch considers an adjusted metric that estimates historical property tax revenues based on a constant tax rate throughout the time series being considered.

The second component of the revenue framework assessment is the government's independent legal ability to increase operating revenues. This involves consideration of the range of legal limits on the government's autonomy in this area, including tax caps and requirements for approvals from voters or other levels of government. Fitch considers the government to have independent legal revenue-raising ability as long as such action is at the discretion of the governing body, even if a supermajority or other such requirements exist.

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## Legal Ability to Raise Revenues

### *Metrics to Support Assessment*

- In many cases, particularly for state governments, there is no legal limitation on the ability to increase revenues, and therefore, no metric is required.
- For issuers that have a legal limitation on raising revenues for operations, Fitch calculates a metric that considers the maximum revenue increase permitted by law as a percentage of the revenue decline in the 1% national GDP decline economic downturn scenario that Fitch applies to all credits. For a 'aaa' assessment, the maximum revenue increase must be at least 300% of the scenario revenue decline; for 'aa', at least 200%; for 'a', at least 100%; and for 'bbb', at least 50%.

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Given the focus on incorporating only potential tax changes that are in the control of the government, when tax caps limit annual increases to specific economic metrics, such as inflation or population growth, the government is not considered to have revenue-raising flexibility upon which it can rely in a downturn. However, if unused permitted increases under the cap in a given year can be accumulated for use in future years, and Fitch believes it is reasonable to assume that such unused amounts will be maintained, this unused taxing capacity is included in the calculation of the maximum revenue increase permitted by law. Fitch also considers the extent of permitted exceptions to tax caps in making this assessment.

Consistent with Fitch's approach to analysis tailored to the specifics of the issuer's risk profile, legal revenue-raising ability is placed in the context of the sensitivity of the issuer's revenue to economic downturns. For issuers to receive the same assessment, one with revenues that decline steeply in a downturn must have greater revenue raising flexibility than one that has steadier performance through the cycle.

Fitch stresses that the focus of this assessment is on the government's legal control over its revenue system. While noting that tax increases can be politically or practically difficult in many cases, Fitch believes the legal framework is a significant differentiating factor in assessing the ability to manage fiscal challenges. A government can be evaluated highly on this subfactor even if the analyst believes the issuer is unlikely to raise taxes. Expectations for what tools an issuer would be more or less likely to use when confronted with fiscal challenges are qualitative factors incorporated in the operating performance assessment discussed below.

If the specifics of the issuer's situation make revenue-raising particularly challenging despite legal flexibility — for example due to notable competitive pressures or notably weak income levels — this subfactor may carry less weight in the overall revenue framework assessment even though the practical considerations do not affect the subfactor assessment itself. Conversely, if the wealth or competitive position of an issuer provide particularly strong practical revenue-raising flexibility, this subfactor may be weighed more heavily.

### ***Asymmetric Rating Factor Consideration***

The requirement for periodic re-authorization of existing revenue streams, for example by voter approval, is a negative consideration in the revenue framework assessment.

## **Expenditure Framework**

The second key rating driver, expenditure framework, focuses on the sustainability and flexibility of government spending. Specifically, Fitch considers the pace of expected spending growth as it compares to expectations for growth in the government's revenue base as well as the flexibility of the government's expenditures. Fitch thereby assesses how pressured an issuer is likely to be based on the natural pattern of spending growth and how well positioned it is to manage that growth through the economic cycle.

After evaluating an issuer's current spending responsibilities and policy positions, Fitch considers baseline trends in spending as compared to the expected organic growth in revenues (i.e. growth in the absence of revenue-raising measures, as assessed above) over time. This analysis identifies the main drivers of spending and is informed by Fitch's expectations for the issuer's economic trajectory. Fitch notes that the demands of certain expenditure items, such as Medicaid, tend to rise at times of economic and revenue decline. This assessment is meant to consider expected performance on average over time.

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## **Pace of Spending Growth**

### ***Metrics to Support Assessment***

- Analysts review time-series data on the issuer's revenue and spending; however, given the ability of governments to manage reported spending and revenues to meet balanced budget requirements, historical figures are of limited use in identifying organic spending growth trends.
  - Therefore, expectations for the pace of spending growth in the absence of policy action are most heavily influenced by Fitch's analysis of and expectations for the components of a government's spending and whether they are subject to the same influences as revenues.
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Of note, the assessment is not meant to address whether the issuer's finances are in balance, which is the focus of the operating performance analysis described below. Rather, it is designed to establish expectations for how an operating gap may grow, remain stable or decrease over time given the pace of revenue and spending growth in the absence of offsetting action by management. The key credit consideration is the ability of the government's revenue base to support the spending it undertakes. In cases where key spending demands are expected to grow at a materially more rapid pace than revenues, Fitch would expect this "current services" budget gap to result in growing fiscal challenges over time.

## Flexibility of Main Expenditure Items

### Metrics to Support Assessment

#### State Governments

Carrying cost: Debt service + pension ADC + OPEB actual payment/governmental expenditures (most recent year).

#### Local Governments

Carrying cost: Governmental debt service + pension ADC + OPEB actual payment/governmental expenditures (most recent year).

Workforce evaluation: Consistent consideration of an issuer's control over work force spending based on factors such as management's independent control of headcount, compensation and work rules, existence/terms of contractual agreements with labor, and laws covering collective bargaining and the ability to strike.

- The carrying cost metric isolates spending that is a more fixed obligation. Fitch considers a carrying cost metric of less than 10% to be consistent with a 'aaa' assessment; less than 20%, 'aa'; less than 25%, 'a'; and less than 30%, 'bbb', while noting that the carrying cost metric is only one consideration in the assessment of expenditure flexibility.
- The workforce evaluation highlights local government issuers' relative ability to control labor costs. State governments generally have ample flexibility to cut spending because of both largely sovereign powers under the U.S. governmental system and the fact that states generally provide funding that is used by other entities, often local governments, to provide services rather than the state providing services directly. Labor costs are more inflexible and represent a large part of most local government budgets.

Fitch notes that some spending items are significantly easier to control than others. Fitch considers the inherent flexibility of the types of funding or services the government provides and the specifics of that government's situation, evaluating the practical as well as legal ability to reduce spending. This is in contrast to the assessment of the government's revenue framework, where Fitch focuses only on the legal flexibility to raise revenues and holds consideration of whether a particular government would actually raise tax rates for the operating performance key rating driver assessment. This reflects Fitch's observation that there is generally a base level of services a government must provide that is often well above legal requirements, if any, for such services.

The outcome of previous voter initiatives and court decisions can constrain spending flexibility. In addition, inflexible statutory or constitutional operating limitations are potential credit risks, as they constrain an issuer's ability to react to negative developments.

As one measure of the impact of fixed costs on the budget, Fitch aggregates debt service, the actuarially calculated pension contribution level (whether or not it is fully paid) and the government's annual payment for other post-employment benefits (OPEB). This burden is calculated as a percentage of governmental spending, with the analysis including an assessment of both current demands and expectations for future costs.

Fitch uses the actuarially calculated funding contributions to represent the budget demands of pensions because Fitch views the long-term funding approach to be how governments will address these liabilities over time, reflecting the long-term nature of governments' pension commitments. However, many governments have statutorily capped contributions below the level actuaries calculate, or have delayed pension contributions at times of fiscal stress. Such underpayments, in Fitch's opinion, only result in increasing costs longer term and are a form of deficit financing.

Moreover, the actuarial contribution arising from the funding valuation may still be insufficient to make progress in lowering the liability, notably when expected amortization is rolling and excessively backloaded or the assumed investment rate of return is unreasonably high. This is likely to increase the budget demands of pensions over time. In order to identify cases where there is heightened risk to expenditure flexibility as a result, Fitch calculates a hypothetical benchmark pension contribution reflecting the annual payment amount required to amortize the Fitch-adjusted net pension liability on a level basis over a 20-year period at a fixed rate of 5% (which can be higher if a government's borrowing costs are elevated due to fiscal distress). This

supplemental metric is compared with the reported actuarial contribution to highlight outliers where expenditure flexibility can be expected to decrease substantially and unavoidably as a result of pensions, which can result in a lower assessment for expenditure flexibility than suggested by the primary metric.

The focus on the actual as opposed to actuarially based contribution for OPEB reflects Fitch's belief that these benefits are more flexible in many cases. Most governments make a contribution that matches their annual cost of benefits, although a rising share of governments are prefunding OPEB to some degree. Fitch recognizes that, if a government pays only the annual cost of OPEB, it could be saddled with ballooning payments as a result of rising retirement and medical costs over time and considers the actuarially based contribution compared to the actual contribution. However, this concern can be offset by the capacity to make benefit changes as needed.

Fitch notes that for some limited purpose governments an elevated carrying cost figure reflects the absence of material operating responsibilities rather than an operation with significantly limited expenditure flexibility. In these cases, the carrying cost metric is much less significant to the expenditure flexibility assessment than is the case for general purpose governments.

### ***Asymmetric Rating Factor Considerations***

The analysis of an issuer's expenditure framework also considers potential funding pressures, including:

- Outstanding or pending litigation.
- Internal service fund liabilities (e.g. workers' compensation).
- Contingent obligations.

If these rise to the level of credit concern, they could have a negative effect on the expenditure framework assessment.

### **Long-Term Liability Burden**

The assessment of long-term liabilities focuses on the extent and nature of an issuer's incurred liabilities and the outlook for the future given the issuer's growth prospects or lack thereof, with a focus on affordability in both the near and long terms.

Fitch considers the combined debt and net pension liability metric to be of primary importance in the assessment of a government's long-term liability burden. Fitch believes that debt and net pension liabilities are effectively equivalent obligations, despite the significant number of assumptions that go into calculation of pension liabilities, challenges to direct comparability from issuer to issuer and the volatility in reported net pension liabilities linked to market returns. Given the strong legal protections of pensions and the long-term nature of the benefit obligation, Fitch assumes that most governments will opt to prefund their largest pension commitments as they are earned through disciplined contribution practices, rather than covering benefits directly out of operating resources.

Fitch considers the credit impact of OPEB in evaluating a government's expenditure framework and operating performance but does not include this liability as part of an issuer's long-term liability burden. Fitch does not judge OPEB liabilities to be akin to debt and net pensions. The factors that go into computing an OPEB liability, particularly the long-term cost trend of healthcare, are more uncertain than is the case for pensions. Moreover, OPEB have proven much easier to change than pensions, and legal protections appear limited in most cases. As such, OPEB influence the assessment of the long-term liability burden key rating driver only in cases where the estimated liability is exceptionally large and not subject to modification.

The annual budget cost associated with a government's long-term liabilities is not a consideration in Fitch's long-term liability burden assessment. Rather, that aspect of a government's risk profile is incorporated in the aforementioned expenditure framework evaluation.

## Long-Term Liability Burden

### *Metrics to Support Assessment*

#### **State Governments**

Direct debt + Fitch-adjusted net pension liability as a percentage of personal income.

#### **Local Governments**

Overall local governmental debt + Fitch-adjusted direct net pension liability as a percentage of personal income .

- Overall local government debt includes tax-supported debt issued by both the entity itself (direct debt) and cities, counties, school districts and special districts that are located within or incorporate the entity's geographic boundaries (overlapping debt). If the entity being rated is within a larger unit of government (such as a county), the proportion of the larger entity's debt that is ascribed to the entity being rated is generally based on the relative size of the tax base.
- Per capita personal income is reported for counties but not other levels of local governments (including municipalities and school districts). The U.S. Census Bureau calculates per capita money income for all units of local government, but Fitch does not believe that measure fully represents income available to residents. As a proxy for per capita personal income for those lower levels of local government, Fitch calculates the ratio of money income to per capita income for the county in which the rated entity is located and applies that ratio to the entity's money income. The estimated per capita personal income figure is multiplied by population to get total personal income
- Using current metrics as a base, analysis focuses on expectations for the future, incorporating capital plans/needs and the pace at which debt is paid down, the adequacy of current pension contribution policies and economic expectations.
- The liabilities as a percentage of resident personal income metric indicates the burden on the economic base and is the primary metric for analysis in most cases. Fitch also considers, as secondary metrics, direct debt plus the Fitch-adjusted direct net pension liability as a percentage of governmental revenues, which indicates the burden on an issuer's budget, as well as, for local governments, the liability burden as a percentage of property value, which is relevant to the property tax base.
- Fitch considers a liabilities-to-income metric of less than 10% to be consistent with a 'aaa' assessment; less than 20%, 'aa'; less than 40%, 'a'; and less than 60%, 'bbb'.
- Pension analysis also considers key characteristics of major systems, including the degree of institutional control, level of benefits, practices governing contribution setting and amortization of liabilities, asset portfolio composition and risk management practices.

Fitch notes that in some cases resident personal income excludes a material portion of the resource base and is therefore not a valuable guidance metric for consideration of the issuer's long-term liability burden. Examples of this are local governments with commodity or tourism-based economies and revenue systems. In these cases, Fitch elevates consideration of the property value metric and considers a total liabilities-to-market value metric of less than 5% to be consistent with a 'aaa' assessment; less than 10%, 'aa'; less than 20%, 'a'; and less than 30%, 'bbb'.

Liability measures are reviewed in the context of factors that affect their magnitude, such as the allocation of functions between the state and local governments.

For transit authorities that are local, tax-supported government enterprises, Fitch analyzes the long-term liability burden by considering not only the approach usually applied to local governments but also measurement methods typically used in analyzing self-supporting enterprises. Specifically, the long-term liability burden is compared to both the economic base (in the form of personal income) and system cash flows, with consideration of the latter guided by Fitch's "Rating Criteria for Public-Sector, Revenue-Supported Debt." This reflects the hybrid nature of such entities.

### **Debt Considerations**

The evaluation of an issuer's debt burden incorporates not only current levels but also Fitch's understanding of capital needs, including from mandates and deferred maintenance where evident, and the expectations for the economic base's capacity to support that debt.

Debt analysis includes a review of trends in the amount of debt issued and outstanding in relation to resources. Sustained increases in debt at a rate in excess of economic growth run the risk of overburdening a tax base and straining budget resources.

Fitch reviews the rate at which the debt is repaid in developing expectations for the trajectory of the issuer's liability burden. Typically, U.S. tax-supported debt amortizes over 20- to 30-year periods. Balloon payments and associated refinancing uncertainty are uncommon. A government with faster debt amortization benefits from greater future financial flexibility and the fiscal capacity to continuously finance its capital requirements without adding to the overall burden, as debt rolling off makes room for new issuance.

Calculations include all long-term fixed obligations of the issuer, excluding debt fully supported by user charges. Debt that has been defeased, either legally or economically, is also excluded. Notes and commercial paper are included in debt calculations unless they have been issued only for temporary purposes, most commonly to bridge a mismatch between revenue and expenditure timing, and are expected to be repaid within the fiscal period from cash flow.

Fitch includes in its calculations contracts with associated debt that would become the obligation of the issuer if it failed to comply with the ongoing payment terms of the contract, most commonly related to availability-based public-private partnership (PPP) arrangements. Such transactions require payments by the government over the life of the contract and are distinct from demand-based PPPs, which are funded from user charges (tolls) rather than ongoing government payments absent a specific minimum revenue guarantee. Fitch does not include debt associated with demand-based PPPs in a government's debt calculations.

Fitch views the disclosure of all tax-supported debt obligations of the entity, including direct bank placements and other obligations that may not carry ratings, to be a management best practice. Fitch includes all such obligations, including the impact of any covenants they may contain (particularly acceleration), in its analysis.

In the assessment process, Fitch considers not only liabilities directly incurred and payable from the issuer's tax revenues but also outstanding debt for which the issuer may be obligated in the future, although such debt typically is not included in the calculation of the long-term liability burden metrics. Examples include bonds intended to be fully supported by non-tax revenues, such as tolls, and moral obligations. Such obligations are monitored but typically excluded from direct debt calculations unless the issuer's resources have been relied on to cover the obligation during the past three years or Fitch believes that they will be needed going forward given the nature of the underlying security. In cases where the inclusion of debt of this type in the issuer's debt calculations could have a rating impact, Fitch will assess the credit quality of the expected repayment source to confirm its investment-grade credit quality.

### ***Pension Considerations***

Fitch's analysis of a government's net pension liability burden considers defined benefit pension plans only; defined contribution plans are a predictable annual commitment that does not give rise to a long-term liability and are considered in the assessment of an issuer's expenditure framework.

As with debt, when evaluating an issuer's net pension liability, Fitch considers not only the current liability but also the expected trajectory. The analysis of pension obligations takes into account whether there has been stabilization or progress in the ratio of assets to liabilities over time and a commitment to contributing at actuarially calculated levels. The analysis also considers actuarial and other assumptions influencing the burden, including the investment return assumption used to calculate the present value of liabilities. All of these factors influence

expectations for the extent to which the liability can be expected to grow over time. In addition, relatively high exposure to riskier, more volatile investment classes may suggest additional risk that can negatively affect the liability assessment.

For each rated entity, Fitch closely evaluates all significant reported pension liabilities for which the entity has direct funding responsibility. To improve comparability among plans, Fitch creates a standardized investment return scenario, estimating the net pension liability with a 6% investment return assumption adjustment for pension liabilities calculated with a discount rate at a higher level. The degree to which Fitch adjusts the reported total pension liability for this metric is based on the reported investment return sensitivity provided in accounting statements, which Fitch believes captures the maturity profile of the system. In cases where the net pension liability is sizable, actions or plans to reduce it over time can be a mitigating consideration.

As noted above, using the adjusted net pension liability as a starting point, Fitch also calculates an annual benchmark contribution that would eliminate the liability over time assuming level dollar payments over a fixed, 20-year period. This figure provides a basis for comparison with the reported actuarially calculated contribution, and highlights situations in which expenditure flexibility is likely to decrease substantially and unavoidably over time as a result of pensions.

### ***Asymmetric Rating Factor Considerations***

Although unusual for a U.S. state or local government, the long-term liability burden assessment could be negatively affected by:

- Derivatives exposure.
- Short-term debt.
- Variable-rate debt.
- Debt with bullet maturities.
- Exceptionally large OPEB liabilities without the capacity to make changes to benefits.

In analyzing these risks, Fitch focuses on the materiality and manageability of such obligations, including rollover risk when relevant, given the issuer's operating and liquidity profile. If provisions included in liquidity or swap agreements expose an issuer to events outside its control that Fitch believes could impose a material liquidity risk or additional liability, this would be factored into the assessment. Similarly, OPEB liabilities that Fitch assesses to be unmanageable over the longer term could lower the factor assessment. An exceptionally large accounts payable backlog can also negatively affect the long-term liability burden assessment.

## **Operating Performance**

Whereas the first three key rating drivers are primarily focused on the assessment of foundational credit items — the “raw material” of the credit — the final key driver, operating performance, addresses how an issuer functions within that framework, drawing from the assessments that come before it. It considers how Fitch anticipates a credit will perform through economic cycles, given both exposure to economic downturns and the issuer's demonstrated capacity to take offsetting action that maintains credit quality. By highlighting financial resilience through downturns and budget management at times of economic recovery, the operating performance assessment is meant to focus analysis on the issuer's fundamental financial profile rather than variable performance in a particular year.

Given the significance of these considerations to overall credit quality — Fitch's rating definitions distinguish credits primarily based on relative vulnerability to adverse business or economic conditions — the assessment of operating performance is particularly important to determining the final rating. Strong financial decision making can result in a high rating for a credit with a comparatively higher underlying risk profile if Fitch judges that adequate steps have been taken to

mitigate risks. On the other hand, weak financial decision making can result in a lower rating than a credit's underlying risk profile would suggest.

Financial flexibility is of primary credit importance because it allows an issuer to address periods of volatility without eroding credit quality.

The financial resilience subfactor highlights the relative ability of a government to manage through a revenue downturn, with a focus on the level of financial flexibility through the cycle. The financial resilience assessment is primarily informed by scenario analysis (*discussed in further detail on page 20*).

## Financial Resilience Through Downturns

### Metrics to Support Assessment

- Interpretation of scenario analysis results, discussed in Scenario Analysis on page 20, is the primary driver of the financial resilience assessment for both state and local governments.

Scenarios consider how a given issuer may be affected by a specified hypothetical downturn that is applied consistently across credits. The analyst then makes the financial resilience assessment based on the issuer's capacity to manage through that scenario.

Interpretation of scenario analysis results necessarily reflects and is consistent with the prior assessments of revenue control and expenditure flexibility and factors in the issuer's cushion against unexpected events. Together, these elements — inherent budget flexibility on the revenue and spending side and the level of reserves available to support operations — represent an issuer's gap-closing capacity.

Scenarios do not dictate a particular assessment or rating outcome. Analysts consider the totality of the government's financial profile when evaluating the results and forming an assessment. For example, a government with a significant amount of pass-through monies in its budget may show a reserve funding as a percentage of expenditures metric that understates the government's true financial cushion against cyclical downturns.

Fitch notes that outside parties can have a positive impact on operations, such as when a state control board or state oversight improves prospects for a local government's financial position. Most states have some formal mechanism for assisting distressed local governments. Fitch does not assume in its ratings that such mechanisms will be invoked and, once invoked, will be effective. However, once an entity becomes sufficiently distressed for a state-sponsored remediation plan to be put in place, Fitch incorporates the revealed benefit of that relationship in the standard factor assessments.

## Budget Management at Times of Economic Recovery

### Metrics to Support Assessment

#### State Governments

Consideration of historical and expected budgeting practices

#### Local Governments

Consideration of historical and expected budgeting practices

Dollar difference between pension ADC and actual pension contribution as a percentage of spending

- States have extensive flexibility to manage their budgets in ways that could present future budget challenges.

Local governments have more limited opportunities to defer spending. Away from fund balance draws and idiosyncratic one-time actions, the biggest area of potential deferral for local governments is reducing annual pension contributions. Therefore, an assessment of actual annual pension contributions compared to actuarially calculated annual contribution levels is one factor in considering the sustainability of local government budget decisions, although its benefit is tempered by the numerous variable assumptions that go into calculation of an ADC and the widely ranging magnitude of pension contributions in relation to the size of the budget. Even though discretion over the level of pension contributions in many cases is out of the control of local government decision makers because many provide pension benefits through statewide cost-sharing plans, Fitch sees the inadequacy of contributions as a risk for the local government and considers it to have the same credit impact as underfunding a locally managed plan.

An issuer's budget management during periods of economic recovery is a key determinant of its resilience at times of decline and, therefore, critical to the operating performance assessment. In addition, Fitch notes that a government's reported balanced budget figures can mask sometimes extensive use of nonrecurring measures, making explicit examination of this point critical in credit analysis.

Credit quality can be weakened when budget decisions made in a downturn — such as underfunding/deferral of liabilities — weaken an issuer's financial cushion or create future obligations that may be difficult to meet even once the economy recovers. This risk is magnified when such actions are undertaken even during economic recoveries, and the consequent increase in a government's risk profile will be revealed in a reduced capacity to address a future downturn.

State government powers and functions provide extensive abilities to underfund obligations. Local governments have more limited options. One option available to both is the underfunding of pension liabilities. Due to the labor-intensive nature of local governments, pension contributions are more significant as a percentage of local budgets.

Fitch does not expect government budgets to be truly balanced in downturns; for practical and policy reasons, in many cases, reserves will be drawn on and operating spending deferred to a point at times of cyclical decline. However, reserves built by an issuer at times of economic growth build resilience in preparation for the next downturn.

### ***Asymmetric Rating Factor Considerations***

The operating performance assessment could be negatively affected in cases of the following:

- Liquidity concerns (see below).
- Risk of an outside party (e.g. another level of government) having a negative impact on operations (see below).
- Evidence of a high degree of taxpayer dissatisfaction, particularly in environments with easy access to the voter-initiative process.
- Demonstrated market access concerns.

### ***Consideration of Reserves in Fitch's Rating Analysis***

Fitch considers the level of a government's reserves to be an important credit consideration and evaluates the adequacy of such reserves through scenario analysis. Fitch's reserve expectations are credit and rating specific, recognizing that governments have three broad categories of financial flexibility to react to deteriorating conditions: revenue increases, expenditure cuts and use of reserves. Fitch recognizes that reserve levels fluctuate through the economic cycle and does not set static expectations for reserves.

In Fitch's view, the value of incremental reserves above a certain level — related to an issuer's budget volatility, budget control and liquidity profile — is limited from a rating perspective but may be significant to the government for other reasons. The appropriate level of reserves is very specific to an individual government's circumstances, a function of both credit-relevant and broader policy considerations.

One government may choose to maintain sizable reserves to avoid the need for disruptive and pro-cyclical budget cuts or revenue increases in a downturn, while another may choose to rely more on other budget management tools to maintain balance. As Fitch's IDRs communicate the distance from default and likelihood of rating transition, the key consideration is how choices made affect expectations for financial flexibility through economic cycles.

***Liquidity***

U.S. state and local governments generally have demonstrated ample liquidity to meet financial obligations through economic cycles.

As part of the operating performance assessment, Fitch considers a government's liquidity needs and internal and external liquidity resources. The analysis focuses on resources that could be expected to be available to a government in a downturn, when liquidity is most likely to be strained. State governments have extensive tools to support liquidity, both explicit (e.g. cash balances) and implicit (e.g. the ability to delay distributions to local governments). As such, the analysis of a state's liquidity position is holistic and cannot be expressed in a single number.

For local governments, which have more limited tools, Fitch believes that a government-wide cash analysis adequately captures an issuer's liquidity position. In general, liquidity becomes a concern and warrants additional consideration if the government-wide days cash on hand metric has or is expected to fall below 60 days. In such cases, Fitch considers tax collection cycles, which are often the cause of temporarily weak liquidity figures on the reporting date.

***Impact of Outside Parties on Operating Performance***

Fitch includes as an asymmetric consideration the risk of an outside party, such as a higher or related government or court, having a negative effect on an issuer's financial position. This is meant to highlight unusual situations that may not already be incorporated in the assessment. For example, in some jurisdictions, elected law enforcement or judicial officials may present budgets that cannot be modified by the taxing authority. Similarly, in some cases, school budgets adopted by independent school boards are by law included in the general government budget. This results in uncertainty that may warrant additional consideration in the operating performance assessment.

**Scenario Analysis Addresses Rating Tolerance**

Scenario analysis considers potential performance under a common set of assumptions, thereby illustrating how cycles affect individual issuers differently.

Fitch's scenario analysis framework for state and local governments utilizes the Fitch Analytical Sensitivity Tool — States & Locals (FAST), which highlights how an issuer's financial position can change through an economic cycle and what level of change can be considered consistent with the existing rating. FAST supports Fitch's through-the-cycle analysis but does not create a forecast. It does not generate a rating but provides analytical information used in the rating process.

Fitch's overarching philosophy is that ratings should not change due to normal cyclical variations. Economic downturns are inevitable, and even if an issuer's revenue stream has not evidenced a high correlation to the broader economy, significant year-to-year variations in revenue performance in many cases can be observed. Fitch believes that ratings should account for this. On the other hand, broad shifts different from the ebb and flow of a normal economic cycle are also inevitable. Scenario analysis helps make the distinction between the two and communicate what rises to the level of a credit event and what is already anticipated in the current rating.

Once general expectations for the issuer's performance through the cycle are established, a rating would change only when performance is outside of these expectations. For example, deterioration of the issuer's financial cushion during a revenue downturn would not trigger a rating change as long as the cushion remains above minimum expectations for that point in the

cycle, adjustments are under way if that threshold is approaching, and Fitch believes it is reasonable to assume that the cushion will be rebuilt to higher levels in a recovery.

FAST provides an objectively derived and empirically based starting point for assessing how a government's revenues may be affected in a consistently defined downturn and gauging the ability of an issuer to manage the decline. It allows for uniformity in the input variable being stressed and provides a means for analysts to better understand how revenues historically have evolved over the cycle and relative to peers.

### ***Revenue Sensitivity Analysis***

Revenue sensitivity analysis considers an issuer's historical revenue performance and uses that information to estimate possible future revenue behavior in a downturn.

FAST incorporates a model in which inputs and outputs are formulated from a consistent set of decision rules, using national GDP as a key scenario input. The model scales the revenue impact of a cyclical decline for a given issuer based on the GDP scenario being considered. For issuers where the change in revenues has evidenced a strong correlation to changes in GDP, the use of GDP connotes a reaction in revenues to the general business cycle. For those issuers where a strong correlation has not been evident, GDP is utilized as more of a pure scaling factor; for example, an assumption of a historically large GDP decline would result in the generation of "expected" issuer revenue performance that is weaker than the issuer has experienced historically.

More specifically, in response to a user-specified scenario for GDP (or another macro variable), the model generates both a point estimate and feasible range of percentage change in revenues. Analysts generally use the point estimate in the scenario analysis but may deviate from this should there be a sufficient rationale for doing so. In such cases, the analyst will typically stay within the range produced by revenue sensitivity analysis, although in compelling cases, it may be possible to select a scenario level outside these bounds, which would be disclosed in rating commentary.

Time series information is adjusted for the estimated impact of tax policy changes in all cases for state governments, using data reported annually by the National Conference of State Legislatures. For local governments, consistent adjustments generally are not possible, but analysts incorporate such factors into the interpretation of results. Fitch adjusts the data for clearly identifiable and material accounting changes, such as the consolidation or disaggregation of operating funds, and significant one-time events that can be tracked by reviewing audited financial reports and have a notable impact on reported revenue trends.

The revenue sensitivity analysis theoretically has the capacity to consider any revenue stream, subject to careful interpretation of the results. As an input to the rating process, Fitch evaluates tax revenues for state governments and total general fund revenues for local governments. Fitch believes those revenue streams highlight the main sources of operating fund revenue volatility for each. (For more information on revenue sensitivity analysis, see Appendix A.)

### ***Scenario Analysis***

Scenario analysis places the results generated by the revenue sensitivity analysis into a framework that allows Fitch to consistently consider and compare issuers' ability to navigate through a downturn. It incorporates consideration of both an issuer's inherent budget flexibility and its available reserves.

Fitch uses a three-year scenario, wherein U.S. GDP falls 1% in year one, followed by growth of 0.5% and 2% in years two and three. This is a less significant stress than experienced in the

Great Recession. That downturn was particularly severe compared to historical norms, and Fitch does not believe it an appropriate basis for a rating scenario.

The 1% decline scenario is designed to represent a moderate economic downturn. Fitch may temporarily modify this scenario in a period of actual economic decline when it would not be meaningful to additionally stress an issuer's financial position. Any such change would be communicated publicly and applied consistently from that point.

Fitch uses a revenue decline of no less than 1% as an input into the scenario analysis regardless of the actual revenue sensitivity results (some issuers will show a revenue increase in the scenario due to consistently strong performance in the time period that is the base for revenue sensitivity results). This recognizes the limits of the tool and the overarching goal of analyzing an issuer's capacity to manage downturns.

The scenario analysis framework differs for local and state governments, with each discussed in more detail below. As noted, governments have three broad categories of financial flexibility to react to deterioration in economic conditions: revenue increases, expenditure cuts and use of reserves. States have substantial control over revenue raising and spending, while local governments have less control but in general a higher level of available reserves. As such, local scenario analysis is focused more on the maintenance of financial cushion in the form of reserves, whereas state scenario analysis is more oriented to comparisons of the level of budget shortfall that may need to be addressed in a downturn.

Despite differences in the specifics, both state and local scenario analyses are focused on expectations for how an issuer will manage through economic downturns and what effect that will have on the level of fundamental financial flexibility. This incorporates an assessment of both the tools that the government has to respond to downturns and which of these tools they are more or less likely to use.

In considering an issuer's range of possible actions in the downturn scenario, Fitch recognizes that an issuer's prior policy actions may, to varying degrees, be embedded in the historical results that inform the analysis. For example, if a local government's revenue history reflects regular adjustment of property tax rates to offset declines in the base, historical revenue performance and revenue sensitivity results will show less downside risk than would exist in the absence of those actions. Analysts will take this into account in their assessments to avoid "double counting" policy alternatives.

## Local Scenarios

Local scenario analysis begins with consideration of the impact of the three-year scenario revenue estimate (generated by FAST) on an issuer's general fund position in the absence of any offsetting policy action. In cases where the issuer accounts for core operations or maintains reserves outside the general fund, adjustments will be made to the scenario, for example by replacing general fund data with combined operating fund data or adding reserves outside the general fund into fund balance figures.

For the purposes of the scenario, expenses are assumed to rise at a common rate (2%) meant to approximate inflation. Fitch notes that certain expenditures, such as those for social services, rise during economic downturns but believes this consistent and transparent assumption is adequate for purposes of the analysis.

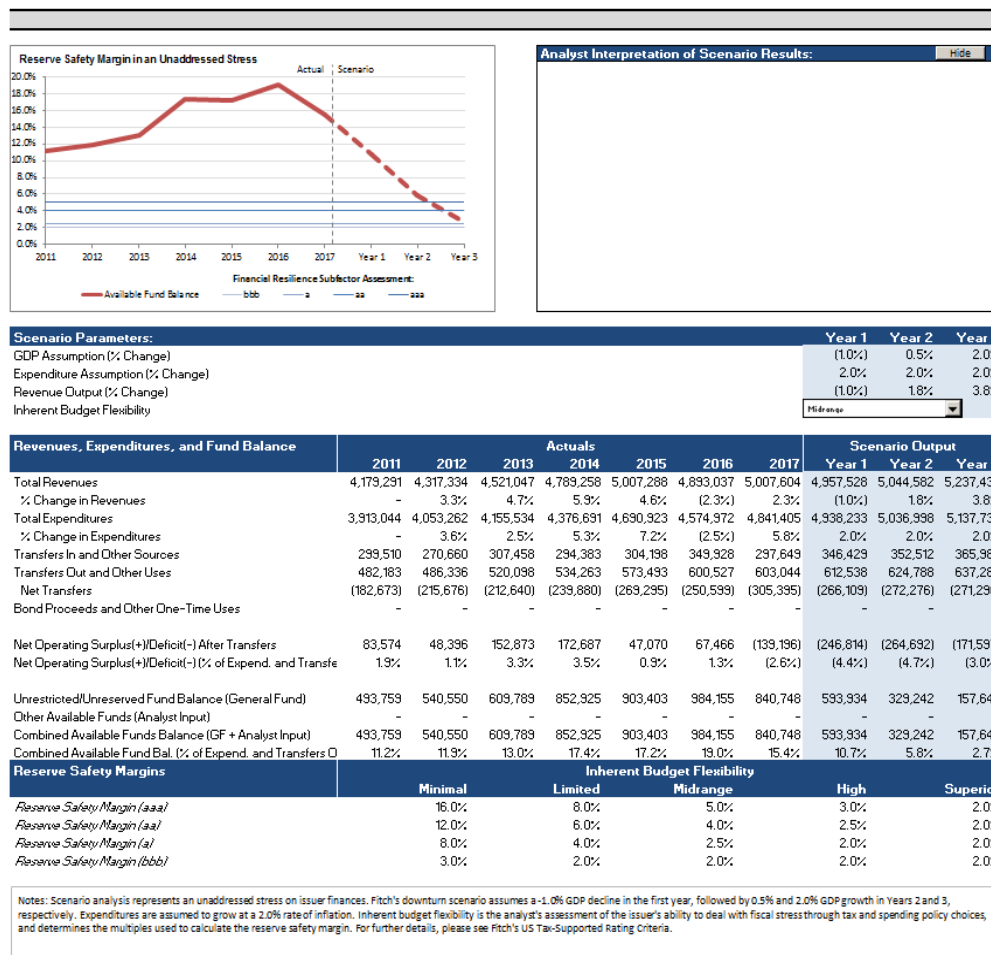
FAST then puts the scenario-estimated change in revenues in context. Based on the issuer's specific budget flexibility profile, the local scenario shows the amount of reserves that Fitch

would consider a minimum financial cushion for a given financial resilience assessment level in the context of the scenario. This is referred to as the reserve safety margin.

### Local Government

#### Scenario Analysis

v.2.0 2017/03/24



Using the unaddressed scenario output as a base, the analyst considers how the issuer is likely to respond in such a scenario — whether through revenue increases, spending cuts, reserve drawdowns, or, most commonly, a combination thereof — with a focus on whether that response would allow the issuer to maintain a reserve position consistent with the current financial resilience assessment level. The answer guides the financial resilience assessment.

The reserve safety margin is not a recommendation or a reflection of Fitch's expectation of where reserves should or will be; it is merely a base level at which Fitch's rating is expected to remain stable. Given the high level of resilience of most local governments' reserves during the Great Recession, it is likely that actual reserve levels will often be far higher than the minimum indicated to keep the assessment stable.

Of note, FAST's unaddressed scenario output may show available financial cushion, in the form of fund balance, dropping below the reserve safety margin; however, the analyst may determine that, given the issuer's budget management tools and demonstrated willingness to use them, the balance in fact would be maintained at the higher level. Expectations for what the issuer would do, as opposed to what they legally could do, are key to the analysis of financial resilience.

Fitch uses the unrestricted general fund balance as a starting point in calculating an issuer's financial cushion. For tax-supported entities whose operations are reported as enterprises rather than governmental funds, such as community college districts and transit districts, Fitch uses unrestricted cash and investments as a proxy for unrestricted fund balance. Reserves outside the general fund are added if they are readily available for general use and the issuer is not required to repay them.

In addition, restricted general fund balance may be considered available if the restriction is beyond the typical definitions under GASB Statement 54. For example, the state of North Carolina requires local governments to categorize most receivables as restricted fund balance, whereas in other states those items would be considered unrestricted. Conversely, the unrestricted fund balance may be reduced if there are other funds with accumulated deficits (most commonly internal service funds) that will eventually be eliminated with general fund resources.

Interpretation of scenario results will include consideration of policies that provide a cushion against revenue underperformance (e.g. budgeting only 95% of projected revenues).

#### ***Calculation of Reserve Safety Margin***

Fitch's reserve expectations are credit specific and recognize that reserve levels fluctuate through the economic cycle. To calculate the minimum financial cushion that Fitch considers sufficient for a given issuer and rating level in the context of the scenario, Fitch evaluates both the revenue decline that an issuer might experience in an economic downturn (in the form of FAST's revenue sensitivity analysis output) and the issuer's inherent budget flexibility to deal with that revenue decline through tax and spending control rather than reserves. Step 1 determines inherent budget flexibility based on the prior assessments of legal ability to raise revenues and flexibility of main expenditure items. Step 2 then determines a reserve safety margin consistent with a given assessment level based on this inherent budget flexibility and the scenario revenue decline, with the reserve level a multiple of the revenue decline.

To maintain the same level of financial flexibility, an issuer that is more likely to experience a steep drop in revenues in a downturn and/or one with less ability to respond through policy changes requires more cushion than one with less economically sensitive revenues and/or more budget control.

For example, if the revenue sensitivity analysis indicates a 4% scenario revenue decline, an entity with superior inherent budget flexibility will typically be expected to maintain an 8% unrestricted fund balance through the economic cycle to be consistent with a 'aaa' assessment (i.e. 2.0x multiple in step 2 multiplied by the 4% revenue sensitivity analysis result), but one with only midrange gap-closing capacity would need a 20% cushion for the same assessment (i.e. 5.0x multiple in step 2 multiplied by 4%).

## Step 1: Determining Inherent Budget Flexibility<sup>a</sup>

Legal Ability to Raise Revenues	Flexibility of Main Expenditure Items					
	Factor assessment	aaa	aa	a	bbb	bb
	aaa	Superior	Superior	High	Midrange	Midrange
	aa	Superior	High	Midrange	Midrange	Midrange
	a	High	Midrange	Midrange	Limited	Limited
	bbb	Midrange	Midrange	Limited	Minimal	Minimal
	bb	Midrange	Midrange	Limited	Minimal	Minimal

<sup>a</sup>Based on prior assessments.

## Step 2: Determining Reserve Safety Margin

*Multiples of the scenario revenue decline generated by revenue sensitivity analysis; the minimum reserve safety margin generated for the analysis is 2%.*

Inherent Budget Flexibility	Financial Resilience Assessment					
	Margin	aaa	aa	a	bbb	bb <sup>a</sup>
	Superior	2.0	1.5	1.0	0.5	N.A.
	High	3.0	2.5	1.5	1.0	N.A.
	Midrange	5.0	4.0	2.5	1.5	N.A.
	Limited	8.0	6.0	4.0	2.0	N.A.
	Minimal	16.0	12.0	8.0	3.0	N.A.

<sup>a</sup>Not applicable (N.A.), because credits rated below investment grade are assumed to be in a situation in which either fund balance is already minimal to negative or any amount of fund balance in itself would be insufficient to keep the rating stable.

## State Scenarios

The state scenario considers the impact of the three-year scenario on an issuer's revenues and spending in the absence of any offsetting policy action, using the most recent available year as the starting point. Federal revenues, which are programmatic in nature, are isolated to better focus on areas under the states' control.

As with the local scenarios, the revenue impact is estimated from the revenue sensitivity analysis, while expenses are assumed to rise at a consistent 2% rate. As noted, certain expenditures, such as those for social services, naturally rise during economic downturns, but Fitch believes this consistent and transparent assumption is adequate for purposes of the analysis.

The inherent budget flexibility of U.S. states is exceptional. U.S. state governments have extensive flexibility to control their finances at times of economic stress. In addition to unilateral authority to make structural revenue and spending decisions, states generally have extensive abilities to delay spending and/or accelerate revenues as well as broad access to one-time resources. As such, the level of reserves for most states is an important policy decision but not a key differentiating factor from a rating transition or probability of default perspective.

Therefore, Fitch does not set a minimum reserve level for state governments, in contrast to the expectations for local governments laid out above. This reflects not only states' strong inherent budget flexibility but also that states can take action very quickly to respond to events; the tools available to local governments are less flexible and generally need more time to effectuate.

With this backdrop, the main purpose of state scenario analysis is to provide a relative sense of the risk exposure of a particular issuer compared to other states. State scenario analysis conveys the net change in fund balance in an unaddressed scenario and communicates how Fitch would expect the issuer to address the scenario gap between revenues and expenditures.

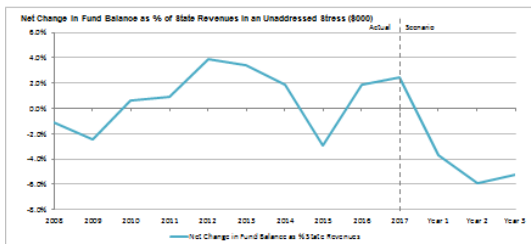
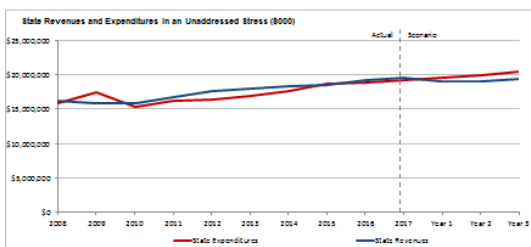
If actual issuer performance is materially different from those assumptions, the financial resilience assessment could change.

Interpretation of scenario results will include consideration of the state's explicit financial cushion readily available for budget balancing and any other policies that provide a cushion against revenue underperformance (e.g. budgeting only 95% of projected revenues). Although budget-basis analysis is a key focus for state assessments, in the interest of consistency the scenarios are based on GAAP-basis CAFR information.

#### State Government

##### Scenario Analysis

2.12.2017/10/14



##### Analyst Interpretation of Scenario Results:

##### Scenario Parameters:

GDP Assumption (% Change)

Expenditure Assumption (% Change)

Revenue Output (% Change)

	Year 1	Year 2	Year 3
GDP Assumption (% Change)	(1.0%)	0.5%	2.0%
Expenditure Assumption (% Change)	2.0%	2.0%	2.0%
Revenue Output (% Change)	(3.0%)	(0.3%)	2.4%

in Fund Balance	Actuals										Scenario Output		
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Year 1	Year 2	Year 3
<b>Expenditures</b>													
Total Expenditures	22,516,875	26,132,049	25,630,334	26,629,946	26,018,900	26,201,525	27,006,805	28,312,713	28,285,654	28,415,592	28,383,904	29,563,582	30,154,854
% Change in Total Expenditures	2.6%	16.1%	(1.9%)	3.3%	(2.3%)	0.7%	3.1%	4.8%	(0.1%)	0.5%	2.0%	2.0%	2.0%
State Expenditures	15,860,687	17,431,503	15,352,189	16,312,428	16,483,172	16,354,654	17,689,303	18,774,007	18,311,529	19,228,403	19,612,371	20,005,230	20,405,335
% Change in State Expenditures	2.6%	9.3%	(11.9%)	6.3%	1.0%	2.9%	4.3%	6.1%	0.7%	1.7%	2.0%	2.0%	2.0%
<b>Revenues</b>													
Total Revenues	22,375,878	24,554,737	26,147,794	27,088,534	27,172,763	27,215,266	27,688,707	28,158,868	28,533,619	28,874,456	28,467,582	28,601,530	29,255,446
% Change in Total Revenues	3.4%	6.3%	6.5%	3.6%	0.3%	0.2%	1.7%	1.3%	1.3%	1.2%	(1.4%)	0.5%	2.3%
Federal Revenues	6,656,188	8,700,546	10,278,145	10,317,518	9,535,128	9,246,811	9,316,302	9,538,706	9,374,125	9,187,159	9,370,333	9,558,351	9,749,518
% Change in Federal Revenues	3.2%	30.7%	18.1%	0.4%	(7.6%)	(3.0%)	0.8%	2.4%	(1.7%)	(2.0%)	2.0%	2.0%	2.0%
State Revenues	16,319,690	15,854,191	15,869,649	16,771,016	17,637,041	17,968,337	18,371,805	18,620,162	19,159,494	19,687,297	19,096,649	19,043,178	19,505,928
% Change in State Revenues	3.5%	(2.3%)	0.1%	5.7%	5.2%	1.3%	2.2%	1.4%	2.3%	2.8%	(3.0%)	(0.3%)	2.4%
<b>Excess of Revenues Over Expenditures</b>	459,003	(1,577,312)	517,460	458,586	1,153,869	1,013,743	681,902	(153,845)	247,365	458,864	(516,322)	(962,052)	(839,407)
<b>Total Other Financing Sources</b>	(635,318)	1,182,282	(423,091)	(306,039)	(467,140)	(336,271)	(336,092)	(384,106)	109,349	16,129	(198,198)	(158,584)	(123,082)
<b>Net Change in Fund Balance</b>	-176,315	-395,030	94,369	152,549	686,729	617,472	345,810	-537,951	357,314	474,993	-714,520	-1,120,636	-1,022,489
% Total Expenditures	(0.8%)	(1.5%)	0.4%	0.6%	2.6%	2.4%	1.3%	(1.9%)	1.3%	1.7%	(2.5%)	(3.8%)	(3.4%)
% State Expenditures	(1.1%)	(2.3%)	0.6%	0.9%	4.2%	3.6%	2.0%	(2.9%)	1.9%	2.5%	(3.6%)	(5.6%)	(5.0%)
% Total Revenues	(0.8%)	(1.6%)	0.4%	0.6%	2.5%	2.3%	1.2%	(1.9%)	1.3%	1.6%	(2.5%)	(3.9%)	(3.5%)
% State Revenues	(1.1%)	(2.5%)	0.6%	0.9%	3.3%	3.4%	1.9%	(2.9%)	1.3%	2.4%	(3.7%)	(5.9%)	(5.2%)

Notes: Scenario analysis represents an unaddressed stress on issuer finances. Fitch's downturn scenario assumes a -1.0% GDP decline in the first year, followed by 0.5% and 2.0% GDP growth in Years 2 and 3, respectively. Expenditures are assumed to grow at a 2.0% rate of inflation. For further details, please see Fitch's US Tax-Supported Rating Criteria.

### Asymmetric Additional Risk Considerations

In addition to the key rating driver assessments discussed above, the final rating assigned will also consider certain additional risk factors that may affect the rating conclusion. These additional risk factors work asymmetrically, where only below-standard features are factored into the final rating levels. For U.S. state and local governments, these risk factors are management and economic characteristics that are significantly outside the U.S. norm. These risk factors are not scaled but are considered and, when present, can negatively impact the rating.

**Management**

The quality of management is an important consideration when assessing the potential performance of an issuer. Fitch considers this attribute to be asymmetric. Weak management may cause the rating to be lower, all other things being equal. In contrast, the presence of adequate management will be assumed when evaluating the impact of the downturn scenario and the ability of the issuer to manage through that stress. Demonstrated management weakness can include repeated failure to adopt budgets on a timely basis due to absence of consensus in the governing body or the resistance of key stakeholders. Official allegation of corruption involving financial reporting law or regulation is also a negative rating consideration.

**Economic Considerations**

In the vast majority of cases, the credit relevant elements of the issuer's economic base can be fully incorporated in the key rating driver assessments. However, in unusual cases, the issuer may have an economy that is very concentrated or small or remote, such that the issuer is susceptible to a sudden and unpredictable change in profile. Similarly, the issuer could have an unusually concentrated revenue base that results in the same vulnerability — for example, a single taxpayer could represent a notably large share of a government's revenues.

In addition, Fitch notes that in unusual cases the issuer's economy may be characterized by longer term structural deterioration risk that is beyond the assumptions underlying the factor assessments. This is also a negative rating consideration.

**Peer Analysis**

Where information on appropriate peer issuers for which a rating has been assigned is available to Fitch (usually for the same sector, region and structure), this will be used for comparative analysis of individual risk factors (both qualitative and quantitative) or in establishing the rating, with respect to the peer group.

**Section 2: Determining Ratings for Specific Securities**

The first part of the criteria covers how Fitch establishes the general credit quality, as expressed through the IDR, for a U.S. state or local government. This section details how ratings are assigned to specific securities based on the legal structure and relationship to the IDR of the related government.

The vast majority of tax-supported debt is backed by GO, appropriation or dedicated tax pledges. Fitch's approach to rating each of these is discussed in more detail below.

**General Obligation Bonds**

Ratings on GO bonds are generally the same as the issuing government's IDR. The GO full faith and credit commitment is supported by the general resources of the entity and therefore reflective of the government's fundamental creditworthiness. In cases where the government issues both ULTGO and LTGO bonds, Fitch generally assigns the same rating, equal to the IDR, to each security. In Fitch's opinion, the presence of an unlimited tax pledge may provide modest additional expenditure flexibility compared to a limited tax pledge in cases where operating tax rates are limited but in and of itself does not increase the likelihood of full and timely payment of debt service.

Fitch's local government ratings make no distinction between entities in states that allow for local government bankruptcies and those that do not. Fitch believes that, if a state deemed an

entity's best option to be a filing, the state would make the legal provisions necessary for that entity to file.

### **Appropriation-Backed Bonds**

Lease and other appropriation-supported obligations require appropriation by the governing body for debt service to be paid. The three most common debt structures associated with lease/appropriation debt rated by Fitch are: covenant to budget and appropriate debt in which the covenant is an ongoing and enforceable obligation of the issuer (covenant to budget and appropriate [CB&A]); debt secured by obligor payments subject to annual appropriation (annual appropriation debt); and lease debt in which lease payments can be reduced if the leased assets are not fully available for use (abatement lease debt).

Appropriation-backed bonds are generally rated one notch below the obligor's IDR, reflecting the slightly higher degree of optionality associated with lease/appropriation payments compared to the IDR. Fitch believes the incentive and propensity to repay lease/appropriation debt is closely linked to an obligor's incentive and propensity to repay all debt. Most creditworthy issuers/obligors view lease/appropriation debt as part of their debt portfolio and have strong incentives to pay to preserve overall credit quality and maintain cost effective access to the capital markets despite the inherent option for non-appropriation.

This reasoning applies as well to abatement leases, which allow for but do not require offset to rent in certain circumstances. Fitch does not apply additional notching from the IDR for abatement. Fitch assumes that the issuer will repay such debt even if it technically has the option not to do so, whether through non-appropriation or abatement. Abatement rises to an additional rating consideration that could warrant additional notching from the IDR in the event that the issuer is expressly barred from making debt service payments during an abatement event. In those cases, mitigants to abatement risk, such as reserve funds and insurance protections, will be evaluated in the legal structure.

Ratings more than one notch below the IDR may be assigned when Fitch identifies additional risk features. The most common examples of this are:

- The debt service is payable solely from the appropriation of a narrow or volatile revenue source. In such cases, analysis will likely focus on expectations for underlying revenue performance and less on the appropriation risk.
- The obligor's budgets and financial plans reflect the expectation that debt service will be repaid by a source that Fitch regards as uncertain, such as revenue generated by an enterprise or project that has not proven self-sufficiency, even if a broader pool of revenues is legally available.
- Bond proceeds fund economic development or entertainment projects where attainment of the issuer's expected benefits has yet to be realized or is otherwise precarious.

In the latter two cases, if the size of the speculative project is so large in relation to the size of the obligor's budget that the feasibility of funding debt service through general appropriations is questionable, Fitch may judge the debt to be unratable by appropriation debt methodology. In these cases, Fitch would evaluate the debt based on the project-related revenues alone under other applicable criteria.

Lease obligations for lower rated credits ('BBB' or lower) may also be rated multiple notches below the IDR when the incentives to opt out of the lease obligation are heightened.

In contrast, if the incentive for appropriation is judged to be significantly enhanced (e.g. through a statutory mechanism that traps substantial funds if appropriation is not made), the appropriation debt can be rated on par with the obligor's IDR. However, Fitch is likely to make

a rating distinction even in such cases for lower rated credits when competition among interests may develop. In addition, the rating would consider the appropriation history of the obligor in relation to debt structured with such mechanisms.

Certain bonds are not directly issued by a given government as appropriation-backed debt but are supported by payments by that government subject to annual appropriation, either directly for debt service or to replenish a deficiency in the debt service reserve fund (DSRF). If the structure provides for full and timely payment of debt service pursuant to the appropriation, Fitch considers these securities similar to annual appropriation/lease bonds.

The rating approach for appropriation-backed bonds, in conjunction with the general government's IDR, can be used to support the assignment of ratings to PPP counterparty obligations by allowing the determination of implicit IDRs for divisions of government or other public-sector entities, government agencies or authorities. For example, the approach can be applied to a U.S. state department of transportation entering into a PPP obligation.

For the appropriation rating methodology to apply in such cases, Fitch looks for a high degree of integration into the general government structure, a record of financial support by the general government, general government control over the entity's activities and a core public-sector mission. The degree of notching from the general government's IDR is based on consideration of the nature of the relationship between the entity and the sponsor government; the more integrated, the less notching down from the general government IDR, all else being equal. Given the degree of linkage that Fitch would look for to apply the appropriation-backed approach to such entities, a difference of no more than three notches would be expected.

## **Dedicated Tax Bonds**

Dedicated tax bonds are defined by Fitch as bonds payable from a specific pledged tax revenue stream but not covered by a GO pledge. These include bonds backed by sales, income, transportation and hotel tax revenues, as well as tax increment financing (TIF) or tax allocation bonds and bonds supported by property-based special assessments or payments in lieu of taxes. They can also include property tax-supported bonds if the rate of the tax pledged is limited or if Fitch is analyzing the bonds as being secured by pledged special revenues, as described below.

Dedicated tax bonds are evaluated in a two-step process, both on a stand-alone basis and for their exposure to the operating risk of the obligor as expressed in its IDR. The stand-alone analysis may result in a rating lower than the issuing entity's IDR. Alternatively, it may suggest a rating higher than the issuing entity's IDR, but this is subject to a cap where appropriate pursuant to the step 2 analysis.

This approach is also used for non-tax revenues that support revenue bonds of local governments when the revenue stream is part of the entity's general operating structure. For example, student fee revenues that support community college district bonds are analyzed using the dedicated tax framework. It does not apply to enterprise funds such as utilities or transportation systems that operate on a stand-alone basis distinct from general operations and are rated under separate criteria.

### ***Step 1: Stand-Alone Analysis***

The stand-alone analysis builds on the foundation of the IDR framework outlined in Section 1 but considers only those factors that are relevant to the specific dedicated tax security. As the direct credit risk for a dedicated tax bond relates to the performance of the revenue stream

over time, Fitch evaluates: the drivers of and growth prospects for the dedicated revenue stream, its sensitivity to cyclical decline and the resilience of the security through such declines.

### **Growth Prospects for Revenues**

The analysis of growth prospects for revenues is consistent with the approach used for IDR analysis. Historical performance compared to national economic growth is the starting point, with additional consideration of factors that may influence future behavior of the revenue system. In instances where the revenue stream does not grow (e.g. a fixed per parcel assessment), the absence of growth is considered in the context of the security's structure. In the fixed per parcel assessment example, if debt service is level, the absence of growth is a neutral factor.

If the obligor has the mandate to raise the tax rate, if needed, this can positively affect the assessment. Conversely, if the obligor can diminish the tax rate or base, Fitch incorporates this into the analysis and considers the protections provided through non-impairment covenants. For Fitch to rate a dedicated tax bond, the tax authorization must extend at least to the final bond maturity date, unless the issuer agrees to put sufficient funds in an irrevocable trustee-held escrow prior to the bond closing to cover debt service after the tax expiration date.

### **Sensitivity and Resilience**

To evaluate the sensitivity of the dedicated revenue stream to cyclical decline, Fitch considers both revenue sensitivity results (using the same 1% decline in national GDP scenario that supports assessments in the IDR framework) and the largest aggregate decline in revenues over the period covered by the revenue sensitivity analysis.

If a pledged revenue stream is recently authorized, there may be no or insufficient historical data with which to perform these analyses. In these cases, Fitch seeks to use a proxy such as revenues from an existing tax levied on a similar base or data on the economic activity that directly generates the pledged revenue. For example, if a new sales tax is authorized in an area that has an existing sales tax levied on a substantially equivalent base, Fitch will evaluate the history of the existing tax. If no sales tax previously existed, Fitch might use historical taxable retail sales if they provide a reasonably direct relationship to pledged revenue behavior. In cases where no reasonable proxy for historical revenues exists, Fitch may not be able to provide a dedicated tax bond rating.

General expectations for coverage against both the scenario decline and the worst performance over the period being evaluated provide a consistent basis for assessing the resilience of the security through economic declines. To achieve the same rating, a bond secured by a dedicated revenue stream that displays significant volatility through the economic cycle must provide bondholders with greater protection against downturns, in the form of debt service coverage, than a bond secured by a comparatively stable revenue stream.

Analysis focuses on coverage of maximum annual debt service (MADS), incorporating Fitch's expectations for issuance under the bonding program over time, rather than on current coverage levels that may be materially higher. This may assume issuance up to the minimum coverage required by the additional bonds test (ABT), which is the legal leverage protection provided to bondholders. If Fitch is confident that coverage will be maintained at a higher level (e.g. due to operating requirements funded from residual dedicated tax revenues), the rating will reflect that higher level of expected coverage.

As in the IDR framework, the level of coverage cushion that Fitch considers consistent with a given assessment level is a function of the risk profile of the dedicated revenue stream. Fitch has established expectations, summarized in the table above, for coverage cushion at different rating levels. The first represents a multiple of the scenario revenue decline indicated by the revenue sensitivity analysis. The second represents a multiple of the largest single actual revenue decline (whether in a single fiscal year or across fiscal years). Fitch considers both levels of cushion when assigning ratings. For a given assessment level, Fitch would look for coverage to meet both thresholds.

These expectations are for the level of cushion that current revenues provide for expected MADS. For example, if the revenue sensitivity analysis for a given revenue stream shows a 5% decline in the downturn scenario, Fitch would look for the structure to be able to withstand a decline of 40% at the 'aaa' level (i.e. 5% revenue sensitivity output multiplied by the 8.0x coverage multiple in the table above), 30% at 'aa' (5% multiplied by 6.0), 20% at 'a' (5% multiplied by 4.0), and 7.5% at 'bbb' (5% multiplied by 1.5). A security with 2.0x debt service coverage can withstand a 50% drop in revenues and still cover debt service.

In the same example, if the largest actual revenue decline was 15%, Fitch would look for a cushion of at least a 45% for 'aaa' (i.e., 15% multiplied by 3.0), dropping to 18.75% for 'bbb' (15% multiplied by 1.25).

For revenue streams demonstrating a consistently declining trajectory that appears likely to continue throughout the economic cycle, the break-even rate of annual decline that would still allow for coverage of expected debt service for the life of the bonds is considered in relation to historical experience.

Fitch rates certain bonds secured by an unlimited tax rate using dedicated tax analysis because they are judged to have no exposure to operating risk. Unlimited tax bonds do not lend themselves to a coverage cushion analysis. Expected cyclical tax base variations are evaluated more qualitatively than for bonds backed by a tax with a fixed rate, as the ability to offset declines with rate increases is a core credit strength for these bonds. Fitch's assessment of the growth prospects for revenues is similar to the analysis for taxes with a fixed rate, but considers the entity's overall economy and tax base. The analysis also incorporates taxpayer concentration and the burden the repayment of the dedicated tax bonds place on taxpayers.

As we are interpreting results based on current revenues to assess the resilience of the security, the analysis considers the current point in the economic cycle. Analysis also incorporates the debt service schedule and the difference in both the dollar amount and time between the current year and the year of MADS. A structure where MADS is far in the future and the nature of the revenue stream makes it likely to grow over time, including due to the benefit of inflation for a revenue such as a sales tax, requires comparatively less coverage from current revenues. The analysis of all historical data also incorporates consideration of whether non-recurring events in the time series skew results; in such cases, this informs Fitch's assessment of the strength of the financial cushion.

Coverage expectations linked to revenue sensitivity results are consistent with Fitch's reserve safety margin expectations for a general government issuer that has minimal inherent budget flexibility (discussed further on page 22), because in the majority of dedicated tax bond securities, there is no ability to raise tax rates or reduce

### Expectations for MADS Coverage

*Multiples of decline from –1% GDP revenue sensitivity analysis*

Aaa	aa	a	bbb
8.0x	6.0x	4.0x	1.5x

*Multiples of the largest actual revenue decline in review period*

Aaa	aa	a	bbb
3.0x	2.5x	2.0x	1.25x

expenditures (i.e. debt service). In the same way, the coverage cushion need only cover revenue risk rather than operating risk, resulting in coverage expectations that are half of those in the reserve safety margin calculation.

As in the IDR framework, in outlier cases a dedicated tax base that is susceptible to an unpredictable change in profile (e.g. due to industry concentration or very small size) is considered an asymmetric additional risk consideration. This can result in a rating multiple notches below what would be suggested by the revenue growth prospects and the resilience of the security structure. Fitch also considers the outstanding variable-rate debt of a dedicated tax security as part of the rating process, with credit concerns primarily focused on the potential for liabilities related to unexpected termination of any related swap agreements.

Rating distinctions between senior and subordinate lien dedicated tax bonds, when they exist, are generally based on notably weaker debt service coverage and legal protections for subordinate bonds provided by the indenture. Fitch only makes such distinctions in cases where there are no cross-default provisions between the liens.

Fitch does not have specific expectations for the funding of a DSRF but considers whether there is liquidity within the structure commensurate with the rating assigned to the bonds. A DSRF may be important in situations where liquidity is a concern based on the fundamentals and performance of the revenue stream and/or the level of debt service coverage. Where relevant, credit will only be given to a DSRF funded with a surety bond if Fitch rates the surety provider.

### ***Step 2: Analysis of Exposure to Obligor's Operations***

The second step of the dedicated tax bond analysis considers the extent to which bondholder security can be threatened by the operating risk of the related government as expressed in its IDR. If Fitch believes that there is exposure, the rating on the dedicated tax bond security is capped at the IDR. This analysis is more prescribed for bonds issued by local governments, which can declare bankruptcy under Chapter 9 of the U.S. Bankruptcy Code. States do not have this option; therefore, the legal considerations for a dedicated tax bond issued by a state are more limited, although the uncertainty inherent in the absence of a bankruptcy regime can limit the amount of credit Fitch gives to the security structure. For purposes of dedicated tax bond analysis, the District of Columbia is treated as a state, while U.S. territories are treated as local governments.

### **State Government Issuers**

The rating of a dedicated tax bond issued by a state may be higher than the state IDR, although this is uncommon because, due to states' inherent credit strengths, their IDRs tend to be at or above the level that a stand-alone analysis of a dedicated tax bond would support. The absence of an established bankruptcy regime for states creates more uncertainty around how various bond securities would perform in a fiscal distress scenario than is true for local governments.

Absent a bankruptcy framework, the primary limit on state action and source of protection for state bondholders is the contract clause of the U.S. constitution and equivalent clauses in state constitutions. Although contract clause protections under federal and state constitutions restrict the ability of a state government to impair its obligation to pay bondholders from dedicated tax revenue, the judicial interpretations of the contract clause indicate that it does not impose an absolute constraint where a state confronts a fiscal emergency.

Due to this inherent uncertainty, Fitch limits the extent to which it considers a structure that segregates dedicated funds from state operations to be protected from the state's operating risk. In the strongest cases, the nature of the revenue stream or the legal structure allow for a dedicated tax bond rating distinct from and potentially higher than the state's IDR. In other cases, Fitch believes that the structure enhances the prospects for full and timely payment but does not have a sufficiently strong non-impairment argument to allow for a rating determined without regard to the issuer's general credit quality; this comparative strength is recognized by allowing for a rating notched up from the state's IDR. As discussed below (see: Local Government Issuers), the presence of the automatic stay under Chapter 9 that applies with limited exceptions to tax-backed debts issued by a municipality results in a different approach for local government debt. An assessment of the likely outcome of state fiscal distress scenarios is by necessity judgmental.

For either approach to be applicable, dedicated revenues must be structurally protected from the government's general operations, with a dedication of pledged revenues for payment of debt service before other uses or diversions and express language or covenants stating the state will not take actions that would impair the security provided to bondholders. If appropriation of revenues is required, the rating incorporates the guidelines for rating appropriation-backed debt discussed above. In no event will the rating on the dedicated tax bonds be above what the step 1 stand-alone analysis discussed above would support.

### ***Rating without Regard to the IDR***

For a state dedicated tax bond to be rated distinct from the state's IDR, the security must be very clearly segregated from state operations and have no nexus with general state functions. This can be accomplished either through the nature of the revenue stream or the legal structure. Where separation is based upon the revenue stream, it must be related to a system or function that is clearly distinct from general state activity. For example, a state can issue worker's compensation or unemployment compensation system bonds backed by employer assessments related solely to those systems. Alternatively, the segregation can be accomplished through a legal structure alone; however, in such cases the revenue dedication must be accomplished through something stronger than statutory provisions. To satisfy this test, Fitch would look for the revenues to be dedicated pursuant to a vote of the electorate and/or state constitutional change. In addition, the dedicated revenues must only be available for debt service in a "closed loop" structure, with no residual use for general state operating purposes.

### ***Rating Linked to the IDR***

A state dedicated tax bond rating may be linked to, but still above, the state's IDR in cases where the flow of dedicated revenues is clearly segregated from general government operations but where Fitch considers protection in a fiscal emergency to be more vulnerable to impairment. Given the degree of uncertainty that Fitch believes exists in these cases, a rating no more than three notches above the state's IDR would be expected.

To allow for a rating above the IDR in these cases, Fitch looks for structural protection that is clearly laid out in statute and any relevant bond documentation. The degree of notching above the state IDR is informed by the following considerations:

- **Breadth of the Dedicated Revenues:** The narrower the dedicated revenue stream, the better the case that impairment would not be necessary or reasonable in the context of broader financial distress and the more enhancement provided. In making this assessment, Fitch considers both the nature of the tax and the degree of allowable leverage in relation to the state's overall resource base. Fitch notes that some state general obligation structures provide bondholders with a first claim on much or all of the

state's operating revenue. Given that one of the key legal tests of whether a contract can be impaired is whether the impairment is necessary and reasonable, Fitch does not consider these provisions to provide enhancement above the state's IDR. In Fitch's opinion, there would be a strong argument that violating such broad pledges is necessary and reasonable in a fiscal emergency.

- **Nature of the Borrowing Program:** A dedicated tax security that is created to fund a specific program or purpose has a stronger segregation argument than one that is used for general operating and/or capital needs, allowing for greater notching above the state's IDR.
- **Use of Residual Revenues:** Maintaining residual dedicated revenues within the specific security structure or program being funded bolsters the separation from operating risk, while the use of residual dedicated revenues for state operations links the security more closely to the state's general credit.

### Local Government Issuers

Bankruptcy risk to local governments generally precludes dedicated tax bonds issued by that government from being rated higher than the entity's IDR, regardless of the strength of the security. Fitch considers four exceptions where a dedicated tax bond rating above the IDR is possible: (1) bondholders are granted a lien on and pledge of revenue that Fitch concludes would be considered special revenues under Chapter 9 of the U.S. Bankruptcy Code; (2) the debt is issued pursuant to a specific state intercept program (see Appendix C); (3) the debt is structured as a securitization specifically authorized by state law; or (4) Fitch can identify the likelihood of enhanced recovery prospects. The legal structure supporting a rating above the IDR will also provide that the dedicated tax revenue is directly deposited into a fund distinct and separate from the entity's general fund, although it may be collected by the local government (with exceptions noted below).

Some local governments are established solely or primarily for the purpose of financing infrastructure or facilities. Fitch will not assign IDRs to such entities, as an analysis of budgetary flexibility and operating performance would not provide additional insight into default risk beyond a dedicated tax analysis. For example, in these cases, a very high fixed cost burden reflects a lack of operational responsibilities rather than an inflexible budget that could contribute to fiscal distress.

For special taxing entities that are related to a broader government, such as a library or park district, Fitch evaluates whether the special district would constitute a separate "municipality" distinct from the broader government for purposes of the Code. Where Fitch believes that the entity may be a unit or department of government but not clearly a separate "municipality" under Chapter 9, the rating applied to debt of the entity is capped at the IDR of the broader government of which it is a part unless the pledged revenue is clearly "special revenue" under Chapter 9 of the Code. Tax-supported enterprises that constitute separate municipalities will be rated on the basis of their independent characteristics.

### Special Revenues

Bonds backed by pledged special revenues, as defined in section 902(2) of the Code, offer the following unique protections to bondholders. These support ratings that are distinct and potentially higher than the IDR and ratings on bonds backed by the issuer's general revenues.

- A simple consensual lien on special revenues would be permitted to survive post-bankruptcy.

- Exemption from the automatic stay provisions of the Code would allow continuous payment on special revenue-backed obligations uninterrupted by a bankruptcy filing by a municipality.

Under Chapter 9, “municipalities” include general purpose local governments as well as operating entities such as school districts, transit districts and other limited scope governmental units.

Section 902(2) defines five types of special revenues. The first four types are relatively self-evident: (A) receipts from operation of a utility or transportation system; (B) special excise taxes on particular activities (such as liquor and hotel taxes); (C) tax increment revenues; and (D) revenues or receipts from particular functions of the debtor (such as vehicle license and deed recordation fees). Fitch does not believe specific legal opinions are generally required to evaluate the application of these provisions and rate the special revenue debt distinct from and potentially higher than IDR of the related municipality.

Less direct structures such as revenue-sharing programs based on excise taxes created at the state level may be considered special revenues under Section 902(2)(B) of the Code as they originate as an excise tax. Programs vary by state, and the transfer to the municipality may be subject to revision and appropriation. Those features do not change the nature of the excise taxes as special revenues, although they can result in other limits on the rating as state appropriation-backed debt.

The fifth definition of special revenues — 902(2)(E) — attempts to distinguish between property, sales and income taxes supporting project debt and such taxes funding the general purposes of the municipality. Fitch sets a high bar for recognizing special revenue status under this final definition, which is ambiguous and could be interpreted as covering many tax-supported bonds.

To rate debt above the general credit of a related municipality, Fitch believes the case for special revenue status must be very clear. The boundaries of the special revenue designation under Section 902(2)(E) have rarely been subject to adjudication, and the stakes of misclassification are high. Legal opinions serve as the foundation for rating such bonds above the IDR and Fitch analyzes the overall legal framework to ensure it robustly supports the legal conclusion.

Fitch believes the following elements must be present to sufficiently reduce the incentive to challenge a bond's special revenue status under 902(2)(E) in a bankruptcy. Each of these elements is necessary for Fitch to have sufficient comfort to provide a rating based on the pledged revenues' status as special revenues:

- A statutory scheme limiting the authority to levy a specific tax to the financing of capital projects.
- An express statutory prohibition on use of any revenues from the taxes for operations of the municipality, unless Fitch has a reasonable legal basis by which to determine that the pledged revenues would not be subordinated to operating expenses in a bankruptcy. If any residual revenues can be used for the entity's operations and are at risk of being subject to netting, Fitch will consider them to be general revenues and rate the issue as unsecured debt.
- An identification of specific capital projects in a ballot initiative or in a resolution limiting the use of proceeds of the debt to those capital projects; for refunding bonds, it should be clear that the bonds being refunded meet this criterion.
- A structure in which bondholders do not have a claim on general revenues of the municipality, where the bonds are solely secured by a dedicated tax (general obligation bonds supported by the entity's full faith and credit will typically not meet this criterion).

- A statutory requirement that a governmental official outside the municipality (e.g. the county) collects and remits the tax revenues to the paying agent, placing the funds outside the control and direction of the municipality. A statutory lien on the pledged revenues reduces the incentive to challenge special revenue status sufficiently to substitute for this requirement.
- Clarity that the pledged taxes are property of the municipality and would not be considered at any point the property of the entity collecting and remitting the tax revenues; absent this, the rating would be capped at the collector's rating.

In cases where the dedicated tax revenues need to be appropriated by the issuing entity or another level of government to be available for debt service, Fitch places a rating cap on the dedicated tax bonds based on the appropriation-backed debt rating methodology discussed above.

### **Bank Bonds**

In conjunction with or subsequent to a borrower's issuance of variable-rate demand bonds (VRDBs), Fitch may be asked to assign a long-term rating to the borrower's corresponding bank bonds, e.g. VRDBs that have been tendered and not remarketed, and then purchased by the liquidity provider in accordance with the liquidity support agreement. Fitch bases this rating on its analysis of the underlying credit strength of the issue, taking into consideration the potential negative effects of a purchase of the bonds by the bank, which may include a ramp-up in the interest rate and an accelerated repayment of principal.

Since these factors are considered in Fitch's analysis of the underlying rating of all parity debt, including any VRDOs, bank bonds whose security is on parity with their corresponding VRDOs carry the same underlying long-term rating as those VRDOs. Similarly, an obligation arising from commercial paper being purchased by a liquidity provider would be assigned the same rating as the issuer's parity obligations.

### **Recovery and Fitch's U.S. Tax-Supported Ratings**

Fitch's U.S. tax-supported ratings consider an obligation's relative vulnerability to default and generally do not incorporate any measure of recovery given default. However, there are two discrete circumstances in which Fitch believes the likelihood of enhanced recovery prospects can be reliably identified and should be reflected in local government security ratings above the IDR as additional information to investors when considering relative risks.

#### ***Statutory Liens***

The first case where Fitch accounts for recoveries in its ratings is a municipal security that benefits from a substantial preferential right in a bankruptcy proceeding as a result of a statutory lien being granted under state law.

A statutory lien is defined in Section 101(53) of the Code as a lien arising automatically by force of statute on specified circumstances or conditions. This lien is in contrast to a consensual lien (or security interest [defined in Section 101(51) of the Code]), in which a lien is created by agreement, where both parties to a financing agree to a certain security structure and document that agreement in an indenture or loan document. Some state laws also provide that a consensual lien agreed to by a municipality can be perfected or becomes enforceable without further actions or filings. Such laws govern perfection of security interests and are not statutory liens that Fitch would consider when evaluating enhanced recovery prospects.

The statutory lien preserves bondholder rights to tax revenues securing the tax-backed bond received by the municipality after it enters bankruptcy court. In contrast, the security interest of bondholders that have a consensual lien in pledged general revenues of a municipality, but no statutory lien, ends with respect to subsequently collected tax revenues once the bankruptcy proceeding begins.

Although the automatic stay provisions of the Code preclude enforcement of the statutory lien when the municipality files, the holder of a statutory lien is entitled to recover the value of the lien in the bankruptcy proceeding. Moreover, the property subject to the lien may not be diverted to general use by the municipality unless the holder of the statutory lien is given adequate protection against the erosion of the value of the lien and the holder can seek relief from the stay if the value of the lien is being diminished. Although the determination of value is not detailed in the Code and discount methodology can result in recovery below 100%, recovery values will be substantially higher than an unsecured credit that competes with other general claimants, including pensioners and employee benefit plans, for a claim on the municipality's revenues.

As a result of the robust protection afforded bondholders benefiting from a statutory lien in a bankruptcy, Fitch will rate bonds backed by revenues with a statutory lien for bondholders one to two notches higher than the equivalent stream without the statutory lien.

Fitch will provide notching above the IDR where an evaluation of the statute by counsel provides a reasonable basis to conclude that it clearly applies to the particular revenues and the related obligation. Fitch assumes that broad-based laws that cover issuers of a defined type of debt in a state will allow for recovery enhancement to be applied to ratings of such issuers generally, once the agency is provided with the necessary legal evaluation of the broad-based statute and its effects in a Chapter 9 proceeding.

In addition to the validity of the statutory lien, Fitch will consider the point at which the lien attaches. The lien should apply to the specified revenue at or near the point of collection to be considered for rating uplift. If the lien does not attach until the revenues are deposited by the municipality with a trustee shortly before the bond repayment date, the lien may not provide rating enhancement because it might only benefit bondholders if the issuer happens to file for bankruptcy within the window between the deposit and the bond repayment. These are state law issues that are addressed on a case-by-case basis.

### ***Extent of Notching***

The determinant of the notching above the IDR depends on the strength and level of coverage provided by the pledged revenues. ULTGO bonds with a statutory lien will be rated two notches above the IDR, because the strength of the pledge provides inherently greater pledged revenues than other types of tax-supported bonds.

A statutory lien is sometimes provided to support a limited obligation debt such as a dedicated tax bond. In some cases, the revenue supporting such debt will constitute special revenues under Chapter 9 of the Code. Ratings on special revenue bond debt do not incorporate a notching for recovery, as they are not limited by the IDR. The typical dedicated tax bond will not constitute special revenues. Such debt will have pledged revenues that are nearly always subject to a rate limitation, providing somewhat weaker debt service coverage than the ULTGO debt.

When the general characteristics of a dedicated tax bond with a statutory lien are strong and the municipality's IDR reflects a modest to moderate level of operating risk, the bond may be rated one notch above the IDR based on recovery considerations. When the municipality's IDR reflects

more than a moderate level of operating risk, the dedicated tax bond rating may be two notches above. For example, if a municipality whose IDR is 'BBB+' has dedicated tax bonds outstanding with a statutory lien on broad-based pledged revenues, a sound additional bonds test and solid actual and projected coverage, the rating on the dedicated tax bonds would likely be 'A,' the same as for the issuer's ULTGO bond with a statutory lien.

The approach to rating appropriation-backed debt is not affected by this statutory lien analysis.

### ***Visibility During Bankruptcy***

The second set of circumstances in which recovery can be identified and reflected in ratings includes those securities for which there is sufficient visibility on the potential recovery prospects during the pendency of a bankruptcy proceeding. Unlike the equivalent approach in corporate ratings, no analysis of liquidation values will be considered as the municipality will always emerge as a going concern with adjusted liabilities. Fitch does not expect to come to an independent opinion on the recovery value of a pledged municipal asset under a lease transaction.

Initial filings and response in a municipal bankruptcy are unlikely to provide sufficient visibility to allow for recovery rating enhancement as these often will express opening negotiating positions not considered assessments of value. Visibility would likely come in a plan of adjustment, which would be informed by discussions with creditors.

Individual filings can be complex and idiosyncratic, with outcomes subject to negotiation with multiple parties. Fitch will evaluate individual cases as they occur rather than developing general rules for notching if bankruptcy becomes a reality.

### **Variations from Criteria**

Fitch's criteria are designed to be used in conjunction with experienced analytical judgment exercised through a committee process. The combination of transparent criteria, analytical judgment applied on a transaction-by-transaction or issuer-by-issuer basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their impact on the rating where appropriate.

A variation can be approved by a ratings committee where the risk, feature, or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

### **Data Sources**

Fitch's analysis, rating decisions and criteria assumptions are based on relevant information available to its analysts. The sources are the issuer and/or the obligor, public domain and the financial advisor if a financial advisor has been engaged. This includes relevant publicly available information on the issuer, such as financial statements and regulatory filings. The rating process can incorporate information provided by other third-party sources. If this information is material to the rating, the specific rating action will disclose the relevant source.

## Disclosure

Fitch expects to disclose, as part of its rating action commentaries or new issue reports: any factors in addition to the key rating drivers laid out in these criteria that are significant to the rating outcome for a given issuer, any non-standard scenario parameters used in the evaluation of financial resilience, and any variation to criteria (as mentioned in the Variations from Criteria section above).

## Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in Fitch's Ratings Definitions and available at [www.fitchratings.com](http://www.fitchratings.com).

## Rating Sensitivities

**Revenue Framework:** Ratings will be sensitive to changes in attributes of the government's revenue framework that affect the overall key rating driver assessment. Changes in expectations for revenue growth or the issuer's independent ability to control revenues can change the final assessment.

**Expenditure Framework:** Ratings will be sensitive to changes in attributes of the government's expenditure framework that affect the overall key rating driver assessment. Changes in expectations for expenditure growth as it compares to revenue growth, in the absence of policy action, or in Fitch's assessment of the issuer's ability to control costs, can change the final assessment.

**Long-Term Liability Burden:** Ratings will be sensitive to changes in attributes of the government's long-term liability burden that affect the overall key rating driver assessment. Changes in expectations for the size and nature of the government's combined debt and pension burden can change the final assessment.

**Operating Performance:** Ratings will be sensitive to changes in attributes of the government's operating performance that affect the overall key rating driver assessment. Changes in expectations for the government's financial resilience through downturns and management of finances at times of economic growth can change the final assessment.

## Appendix A: Revenue Sensitivity Analysis/Scenario Revenue Estimates

The purpose of the revenue sensitivity analysis (RSA) estimates generated by FAST is to provide broad order of magnitude guidance of how state and local governments' revenues may be affected in relation to the general macroeconomic/cyclical scenario specified. FAST then allows for scenario analysis based on the revenue output. FAST is not a forecasting tool, but rather provides a plausible range of outcomes that can be evaluated in a through-the-cycle analysis. The RSA generates a revenue estimate that is empirically based, objective and intuitive and allows for uniformity/consistency in terms of the input variable being stressed (e.g. GDP). It also provides a means for better understanding how an issuer's revenues have evolved over the cycle and relative to peers.

For the majority of states, changes in the broader economy alone can explain a very large part of the changes in tax revenues for a given year. Relatively few local issuers evidence a strong correlation of changes in revenues to the economy, though a considerable majority of the largest single-year and multiyear declines in local government revenues over the past two decades occurred during or shortly following recessions or cyclically weak periods.

Given the relatively low correlation of the change in issuer revenues to the change in broad economic indicators for many local issuers especially, as well as the significant percentage of low revenue years that occurred during the comparatively moderate downturn of 2001–2002, the RSA utilizes a multipronged approach that incorporates both a basic econometric approach, when a significant correlation for that issuer is evident, and an alternative methodology.

Although some forecasting techniques are used to derive the scenario estimate, this exercise is definitively not that but rather a sensitivity analysis designed to produce a meaningful approximation of the impact on revenues for the specific scenario chosen, with a qualitative overlay. For any particular issuer, where a significant correlation to the broader economy is not evident, the revenue estimate relies exclusively on the alternative approach, which relaxes the statistical assumptions embedded in econometrics. In such instances, GDP should be thought of more as simply a scaling factor rather than indicating a significant tie to the broader economy.

Additionally, underlying data can present challenges. For all issuers, the RSA controls for extreme outliers, and analysts perform a qualitative review of the historical data used in the generation of output. Available history, coverage, general quality and incorporation (or not) of tax-policy change effects all must be considered when interpreting the output generated by the RSA.

### Methodologies Utilized

The following methodologies are used to gauge the percentage change in revenues for a given scenario assumption.

#### *Econometric Approach*

This approach utilizes a regression model unique to each issuer, where the change in GDP (or another macro indicator, if selected) is the independent variable, and the percentage change in annual government revenues is the dependent variable. The optimal GDP lag or lead is determined, with the best fit model subjected to various tests to assess statistical validity, including utilizing cutoffs with regard to minimum explanatory power, coefficient significance, data normality and other factors such as serial correlation. Should the specific issuer model meet the requisite hurdles, the results (percentage change in revenues) for the specified GDP

level are utilized in the analysis; otherwise, they are discarded. (Current model parameters (subject to change): macro series = US GDP; macro level = -1%, +0.5%, +2% for scenario years 1, 2 and 3, respectively; scenario inflation = 2%; upper/lower tail % outlier control = 1%; minimum correlation = 0.60; minimum t statistic = 2.0; skew limit +/- vs. 0 = 1.5; excess kurtosis limit +/- vs. 0 = 1.5; DW limit +/- vs. 2 = 1.5; range width (SE) = 0.32.)

Fitch believes this approach is well suited to gauging the approximate order of magnitude impact of an economic downturn through application of a uniformly applied stress across the portfolio.

### ***Interpolation Approach***

In some ways, the interpolation approach can be thought of as a short-cut version of the econometric approach, where only two key data points are utilized to form a “best fit” line and statistical assumptions have been relaxed. The higher point (x, y) in this analysis is defined by the average year experience (average percentage change in GDP, compound annual average percentage change in issuer revenues) over the calibration period (period of data utilized to determine model parameters), while the lower point represents the worst year experience (low year percentage change in GDP, low year percentage change in specific issuer revenues, regardless of whether these occurred the same year or not) over the calibration period. Determining the scenario change in issuer revenues is a simple interpolation exercise between these two points using the scenario GDP change as the x coordinate. (Note that a through-the-cycle analysis would generally be expected to utilize a cyclical decline between the worst and average year experience.)

### ***Point Estimate/Range Determination***

While this is definitively not a forecasting exercise, the range around the point estimate (average of the interpolation and econometric approaches if the latter is available, otherwise just the interpolation approach) is calculated in the same manner as an ordinary confidence interval utilizing the standard error of estimate (SE) from the econometric approach. The objective of the interval is to give a reasonable, but not excessive, degree of latitude to the analysts in a systematic way rather than capturing, for example, the vast majority of the outcomes expected for a given change in GDP. Consequently, the range generated would likely be relatively narrow, typically less than +/- 1 SE from the point estimate.

## Appendix B: School Districts

Fitch's IDRs for school districts are derived using the framework outlined in Section 1. This appendix provides additional information on how the framework is applied to school districts, as they have certain features that differ from general purpose governments.

### State Context

Education is fundamentally a state responsibility that is provided at the local government level. As such, Fitch considers state constitutional and statutory requirements, policies, practices, regulations and oversight, as well as the state's overall financial position and expectations for school funding, as a common starting point for the analysis of all school districts in a given state. With this as the base, the credit quality of an individual school district is then determined by analyzing the impact of the state on the district and financial decisions by the school district within the state context.

There is no direct relationship between the state's IDR and the ratings of school districts within the state, although the latter are informed by Fitch's expectations for state school funding and policy.

### Economic Base

Fitch believes that analysis of an issuer's economic base is critical to the assessment of prospects for revenue growth, spending demands, the affordability of liabilities and the ability of an issuer to balance revenue and spending over time. A school district's revenues generally come from a combination of its own economic resources and the state's school funding regime. A district's spending and liability position also can be heavily influenced by the state. As such, the analysis of school district credit involves more directed consideration of the local economy than is the case for general purpose governments.

Aspects of the local economy that are significant to the analysis of a school district credit will be influenced by the specifics of the state; however, since state funding is usually determined by formula on a per pupil basis, the district's enrollment trends and projections are almost always the most important consideration related to a school district's local economy. This analysis incorporates actual and potential competition from alternatives including private and charter schools, which can influence expectations for the district's revenue and/or expenditure framework depending on the nature of the financial relationship between the district and the alternative options.

States typically dictate a certain amount of per-pupil funding for operations (from combined state and local sources). The aggregate per-pupil amount may vary from year to year but is usually not affected by changes in the local tax base's ability to generate property tax revenue. Such equalization efforts reduce the analytical importance of a weak, less affluent local economy, as districts in such locations benefit from larger amounts of state financial support, and can reduce the ability of a wealthier district to benefit from its affluent base.

### Revenue Framework

For school districts, the assessment of growth prospects for revenues is heavily influenced by the state-level analysis and district-specific enrollment trends and expectations. Expectations for state per-pupil funding levels are informed by both Fitch's assessment of the state's overall revenue growth prospects and state school funding trends in relation to that growth. For example, a state may be experiencing strong revenue growth but choosing to direct revenue

growth to other needs or tax reduction while keeping per-pupil funding levels relatively flat; in these cases, the actual trends in school funding are more significant in analyzing the revenue growth prospects of school districts in that state than are the state's overall revenue trends.

Fitch's analysis also incorporates broader changes in state education funding policy and distribution methods. For example, a state may change its funding policy to direct increased allocations to poorer and urban districts or charter schools.

State-determined funding is typically a district's primary revenue driver, even if the majority of revenue is derived from the local tax base. Fitch recognizes that K-12 education is fundamentally a state responsibility and has observed that the resulting strong foundation of support for this activity provides a measure of stability and predictability that is significant to rating determinations. For districts with weaker and/or narrow local economies, the existence of state funding provides a boost and adds diversity to the resource base, whereas for districts with wealthy and/or very stable economies, reliance on state funding formulae can be a limiting resource factor.

Most school districts have limited, if any, independent ability to raise revenues materially without external approval. In some states, school districts can raise operating revenues only through a voter referendum, and in some cases, districts do not even have that option. This limitation is not as significant a factor in the assessment of a school district's revenue framework as would be the case for a general purpose government given the state funding dynamic discussed above.

## **Expenditure Framework**

Enrollment and salary and benefit costs related to teachers are the main drivers of school district expenditures. Special education can also be a significant cost driver. As with general governments, school districts generally provide a base level of service that is well above legal requirements, if any.

In some ways, the distance between current spending and minimum requirements is easier to assess for school districts than for other types of government due to the districts' limited purpose. Examples of legal service-level requirements include a specified number of school days (or hours) and class size maximums by grade level set at the state level. Fitch considers a district's proximity to such requirements as well as other areas of service-level flexibility.

A distinguishing feature of school district operations compared to those of general purpose governments is that, in numerous cases, states provide support for debt service costs. Fitch does not include debt service that is subsidized by the state in the analysis of the district's carrying costs, as it places no burden on the district's budget. Similarly, school districts in some states benefit from state contributions to state-sponsored pension and OPEB programs on their behalf. This reduces the budget demands associated with long-term liabilities at the school district level.

As with other areas of state support, Fitch notes that districts face exposure to increasing costs if state budget challenges or policy changes shift more of the debt service or post-employment benefit burden to districts. Fitch acknowledges this possibility when evaluating both the expenditure framework and long-term liability burden for school districts; however, given the state responsibility for education, Fitch believes it is unlikely states will make changes that meaningfully increase districts' burdens without offset.

### Long-Term Liability Burden

School capital needs tend to be funded by school districts directly using their own resources. As such, Fitch's analysis of a district's long-term liability burden includes affordability metrics using the school district's economic data rather than those of the state.

Long-term debt burdens and expectations for future issuance vary widely among school districts, depending on the age and condition of facilities, enrollment patterns and community priorities. Demographics can also play a more pronounced role in determining school districts' new debt issuance than is the case for a general purpose government, as the capital requirements are more specific. Unlike roads or police stations where there is no per capita requirement, for schools, each student needs a seat and policy mandates can include things like maximum class sizes.

Fitch notes that certain states participate in local district capital programs by directly funding facility construction, providing assistance with district debt service payments or providing credit enhancement that allows for less expensive borrowing, often in the form of a state aid intercept program (see *Appendix C*). If there is optionality to the commitment (e.g. if the payment is subject to state appropriation), the debt is included in the district's debt metrics. This is true even though the debt service is not included in the analysis of the district's carrying costs.

Like many cities and counties, school districts typically participate in state-sponsored pension and post-employment benefit programs. In many cases, states provide money to the school district to cover all or a portion of pension-related costs; if the liability remains the responsibility of the school district, it is treated as such in Fitch's analysis. In cases where the state is responsible for directly paying pension and OPEB benefits, there is no associated liability for the district. In those cases, the liability is considered a state liability and is included in the state's long-term liability analysis.

### Operating Performance

The considerations that distinguish school district analysis from that of a general purpose government affect analysis of each fundamental rating factor, as discussed, but do not influence the assessment of operating performance. The operating performance assessment addresses how an issuer functions within its operating framework; as such, an assessment of a school district is no different than an assessment of a general purpose government.

## Appendix C: State Credit Enhancement Programs

Many states have programs designed to enhance the credit quality of local borrowers with the goal of broadening market access and lowering the cost of capital. The enhancement programs most commonly support school districts but have been developed for other types of local borrowers as well.

The rating approach discussed below covers programs that provide enhancement linked to a state's general credit quality (i.e. state guaranties, other direct state payment programs, intercept programs). The enhancement provided by permanent funds, for which ratings are unrelated to the state's general credit quality, is not assessed using these criteria.

### Timely Payment Expectation Critical

As the first step in considering the value of a state credit enhancement program, Fitch evaluates the ability of the enhancement program to provide for full and timely payment of debt service. Fitch's state credit enhancement program criteria are not applied in cases where payment would most likely be delayed until after bond payment dates.

For a program to provide enhancement, procedures should be set forth under state law, regulations and/or administrative guidelines so state payments can be directed to bondholders by debt service payment dates. Notification requirements by paying agents should allow the state sufficient time after a borrower deficiency has been reported to transfer necessary funds to bondholders on or before bond payment dates.

### Revenue Adequacy and Stability Key

A second condition for the credit enhancement program criteria to apply is that state funds must be sufficient to pay bond debt service. To make this evaluation, Fitch considers the historical and prospective adequacy of state funds.

For local bonds backed by a state's GO guaranty, the power of the state's full faith and credit pledge, as expressed in its IDR, reflects the adequacy of revenue. For other direct payment programs, the general fund or other specific state resources that are dedicated to debt service are evaluated for adequacy.

With intercept programs, the focus is on debt service coverage by state funding for a local borrower. For the issuer's bonds to earn the enhancement program rating, annual state funding flows to the issuer must meet minimum coverage levels from historical revenues.

The level of MADS coverage that Fitch considers adequate for a given program varies based on the nature and historical performance of the revenue source that would be intercepted if needed. The most common state credit enhancement programs would intercept appropriated state aid to a participating school district. State school aid is a historically solid revenue source due to the states' responsibility for funding education (see Appendix B). Therefore, Fitch generally would consider coverage of 1.25x sufficient for a program rating to apply.

For borrowers that are more exposed to the potential for significant state funding reductions, coverage ranging from 1.75x–2.0x or higher would be expected. In some cases, Fitch may consider the state funding flows to be not sufficiently reliable to allow for a program rating, regardless of the coverage level, due to greater potential volatility in the state funding environment. This includes situations where there is risk to the ongoing viability of the entity receiving the state funding, such as a charter school with charter renewal risk.

The characteristics of a participating borrower could warrant higher coverage requirements than would otherwise be needed for the program rating to be applied. One example could be a school district that receives state aid on a per-pupil basis and shows a trend of declining enrollment.

In addition to annual calculations, Fitch reviews the timing of state funding receipts during the year when considering whether sufficient coverage by interceptable funds will be available on each debt service payment date. For pooled financings, concern where annual or interceptable period coverage levels are not met by a portion of borrowers can be mitigated by the involvement of and issuance through a state bonding authority, which Fitch assumes would act to avoid a default; however, the additional risk presented by the more limited coverage for some participants may be reflected through additional notching below the state's IDR.

### **Program Rating Replaces that of Borrower**

Once Fitch confirms that the state credit enhancement program criteria can be applied, the credit quality of the program replaces the underlying credit quality of the borrower. When assigning ratings pursuant to these criteria, Fitch does not conduct underlying credit analysis of the local government borrowers.

### **Program Rating Linked to State IDR**

The state's general credit condition as expressed through the state IDR is a key consideration in rating an enhancement program, since the same factors that inform the IDR affect the state's ability to support the payment of local debt.

The relationship between the state IDR and the program rating for various types of enhancement programs is discussed in more detail below.

#### ***State GO Guaranties***

Under GO guaranty programs, states pledge their full faith and credit to the payment of certain local government bonds if the issuer fails to meet its obligation. Therefore, the state's GO bond rating (IDR) also applies to the enhanced debt of the issuer, as long as timeliness and legal considerations have been satisfied.

#### ***Direct Payment Commitments***

Some states commit themselves to paying borrower debt service from all or part of their general funds or another specific funding source in the event the local borrower's payment is insufficient. Fitch evaluates the breadth and strength of the state funding commitment pursuant to relevant criteria to determine the enhancement program rating. Depending on the nature of the commitment, this generally involves application of either the appropriation-backed bond or dedicated tax bond rating methodologies outlined in Section 2 of this report.

#### ***Intercepts***

Intercept programs require states to divert to bondholders appropriated but not yet disbursed state funds otherwise due to a local borrower when needed to cover that borrower's payment deficiencies. Intercept programs that provide an enforceable mechanism for state monies to flow directly to bondholders and adequate coverage and timing provisions to ensure on-time debt service payments will typically be rated one notch lower than the state's IDR, consistent with the rating methodology for appropriation-backed debt. Fitch can maintain a rating at this level even when interceptable funds are temporarily unavailable due to a budget impasse in

cases where it is comfortable that the state remains committed to providing the credit enhancement and is actively involved in ensuring the adequacy of funds for bond repayment during the impasse period.

Fitch reviews intercept program mechanics — as expressed in state statute, interagency agreements or through constitutional provisions — to understand how appropriated state funding not yet disbursed to the local borrower would be channeled to bondholders on a timely basis if needed to pay debt service. As noted, the mechanism should include notice of a deficiency to the state by a third-party such as a paying agent by a date that gives the state time to provide the necessary funds for debt service.

For an intercept rating to be applied to variable-rate debt, it must be established that the intercept mechanism works with the provisions and remedies of any third-party bank credit enhancement or liquidity-support agreements. Fitch also reviews details of each state's finance and budgeting structures to determine whether and how the intercept would function in the event the state is late in adopting its budget.

## Appendix D: Moral Obligations

The term moral obligation (MO) is used widely in the U.S. tax-exempt debt markets and covers a variety of structures. The most common form of MO is via a DSRF replenishment. Under this structure, a DSRF is established and used if the underlying security is insufficient to make the debt service payment. The MO provider then is notified of the DSRF draw and is requested to appropriate funds to replenish the reserve to the specified level. This lasts for the life of the bonds.

An MO is a legislative statement of intent but a nonbinding mechanism provided by a governmental entity (the MO provider) to support debt separately secured by a pledged revenue stream issued either by the MO provider or a different issuer. While bondholders are at risk that the MO provider will choose not to provide support in the event the pledged revenue stream proves inadequate, an MO provides evidence of implicit support by an entity that benefits from or otherwise has an interest in the success of the financed project or program.

For Fitch to provide a rating based on an MO, it must be a formal, stated intent detailed in bond documents or other public records and cover the full amount of debt service.

If Fitch judges the moral obligation to provide credit enhancement, this is reflected by notching downward from the MO provider's IDR. This is an extension of the approach to rating appropriation debt outlined on page 25, which is based on the optionality associated with lease/appropriation payments compared to the IDR. The notching for MO debt is wider than is the case for most appropriation-backed bonds to reflect the greater degree of optionality inherent in MO commitments.

### Mechanism for Timely Payment Needed

To provide a rating based on an MO, the timing of an MO must ensure that funds can be appropriated before a debt service payment is missed. Fitch's moral obligation criteria are not applied in cases where payment would most likely be delayed until after bond payment dates.

Specific timing directives within the MO mechanism, including the number of days allowed for each step, provide comfort that the MO can be fulfilled in time to avoid a bond payment default.

For Fitch to provide a rating based on reserve replenishment or any other MO mechanism, the process to notify the MO provider, seek appropriation for the payment and have the payment made to the bond trustee should be clearly detailed in legal documents, such as legislation authorizing the MO provision and documents related to the specific bond issue. The process described should identify the government officials responsible for each step, and with the exception of the actual decision to appropriate, the actions should be mandatory, not discretionary. Also, all officials to be called upon to seek appropriation of funds should have the clear authority to do so.

Furthermore, for Fitch to provide a rating based on a reserve replenishment mechanism, the DSRF must be fully funded, or Fitch must rate the surety provider if the reserve requirement is met via a surety policy.

### Determining Value of Moral Obligation

Fitch considers the factors discussed below to determine whether the rating can be based on the MO provider's credit quality and, if so, the number of notches the rating will be below the MO provider's IDR. In most cases, MO ratings are three notches below the MO provider's IDR. The strongest MO pledges can result in a rating only two notches below the MO provider's IDR. These are cases where the MO: is provided to an entity that serves a broad governmentwide or

core purpose; funds an ongoing program rather than a specific project and relates to essential or core governmental operations; and comes from an MO provider that demonstrates further evidence of its involvement in the program, such as a commitment to intercept for the benefit of bondholders state aid that would otherwise be used for the ultimate borrowing entity's operations.

A rating more than three notches below the MO provider's IDR will likely be assigned if the underlying project is built for tangential government purposes, including but not limited to economic development projects benefiting a narrow area. Conversely, if the credit quality of the underlying project is equal to or higher than one notch below the MO provider's IDR, the rating will be based solely on the project's credit quality.

In certain cases, Fitch may determine that the scope and/or nature of the project call into question the feasibility of funding debt service through general appropriations. In these cases, Fitch would likely give no credit to the moral obligation pledge.

### ***Moral Obligation Provider's Understanding, Interest, and Involvement***

For the bond rating to be linked to the MO provider's IDR, the provider should demonstrate that decision makers, both executive and legislative, are aware of the risks and obligations involved in the project or program, that it may be responsible for the full debt service payment, and that the liability can last for the remaining life of the bonds. Such evidence can include a vote approving the MO action, plans showing the project or program financed to be part of a larger effort with broad public benefit, and public awareness, as demonstrated by disclosure of the plans and MO in public forums. Transparent disclosure of a government's MOs in its financial reports and official statements provides additional confidence that the government recognizes these contingent liabilities.

### **Consequences of Not Honoring a Moral Obligation**

A decision by a government entity acting as an MO provider not to honor a well-vetted MO in a timely manner would cause Fitch to discount or disregard that government's MOs in its rating analysis and likely affect Fitch's view of the MO provider's own ratings. Other Fitch-rated credits to which that MO provider has assigned its MO would be reviewed and may be downgraded, possibly to the levels of the underlying securities, to reflect a weaker view of the MO and its provider.

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