

U.S. Public Finance Tax-Supported Rating Criteria

Master Criteria

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 criteria can also support the assessment of tax-supported hospital districts, water and/or sewer utilities, or other enterprises with tax support, in conjunction with relevant sector criteria. The Fitch Analytical Stress Test Model – States & Locals (FAST), discussed on page 16 and in Appendix A, and the rating approach for appropriation-backed bonds discussed on page 23 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 macroeconomic and structural strengths 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.

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.

Ratings Reflect Recessionary Scenario: 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

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This report updates and replaces *U. S. Public Finance Tax-Supported Rating Criteria*, dated April 3, 2018.

Applicable Criteria

[Public Sector, Revenue-Supported Entities Rating Criteria \(November 2019\)](#)
[Public-Sector Counterparty Obligations in PPP Transactions Rating Criteria \(May 2019\)](#)
[Rating Criteria for Infrastructure and Project Finance Criteria \(July 2018\)](#)

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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 IDR.

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 may be rated above an issuing government’s IDR as a result of structural elements and security interests that provide additional bondholder security.

Summary of IDR Rating Framework

Overview of Issuer Default Rating Framework

Sector Risk Profile					
AAA	AA	A	BBB	BB	
Normal Rating Range Given Overall U.S. Tax-Supported Sector Profile					
↓					
Economic Base					
An analysis of the issuer's economic base serves as the foundation for all key rating driver assessments:					
Revenue Framework	Expenditure Framework	Long-Term Liability Burden	Operating Performance		
Expectations for growth prospects for revenues	Expectations for pace of spending growth	Expectations for affordability of liabilities	Expectations for ability of revenues to support spending needs through economic cycles and over time		
In addition, in outlier cases where the nature of the economic base makes the issuer susceptible to an unpredictable change in profile (e.g. industry concentration, remote location), this aspect of the economy can be a negative asymmetric additional risk consideration.					
↓					
Key Rating Driver Assessments					
Revenue Framework	aaa	aa	a	bbb	bb
Expenditure Framework	aaa	aa	a	bbb	bb
Long-Term Liability Burden	aaa	aa	a	bbb	bb
Operating Performance	aaa	aa	a	bbb	bb
Scenario Analysis					
Informs operating performance assessment and communicates where the rating would be expected to remain stable through the economic cycle.					
Asymmetric Additional Risk Considerations					
These risk factors are not scaled but are considered and, when present, can negatively impact the rating.					
↓					
Final Issuer Default Rating (IDR) Outcome					
The ultimate rating outcome is the result of consideration of issuer-specific qualitative and quantitative factors. There is no standard weighting of factors.					

Source: Fitch Ratings.

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' are the primary guide for 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.

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.

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 Resource Base

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

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.

Economic and Demographic Analysis – Key Considerations

Growth trend in	Population
	Employment
	Home prices
Growth trend and level of	Population aging
	Poverty rate
	Educational attainment

Unemployment Rate

Note: The following trends differ slightly for states and local governments because of varying natures of revenue and spending frameworks and data availability.

State Governments	Local Governments
Growth trend and level of personal income	Growth trend and level of median household income
Growth trend in GDP	Market value per capita

Source: Fitch Ratings.

Four Key Rating Drivers

The four key rating drivers are assessed using the guidance table on the following pages, 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 Growth in line with or above the level of U.S. economic performance (GDP)	Solid Growth below U.S. economic performance but above the level of inflation	Slow Growth approximately in line with the level of inflation	Stagnant Growth below the level of inflation or flat performance	Negative Declining revenue trajectory
Independent Legal Ability to Raise Operating Revenues Without External Approval (In Relation to Normal Cyclical Revenue Decline)	High Maximum revenue increase at least 300% of the scenario revenue decline	Substantial Maximum revenue increase at least 200% of the scenario revenue decline	Satisfactory Maximum revenue increase at least 100% of the scenario revenue decline	Moderate Maximum revenue increase at least 50% of the scenario revenue decline	Limited Maximum revenue increase less than 50% of the scenario revenue decline
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	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 Liabilities less than 10% of personal income	Moderate Liabilities less than 20% of personal income	Elevated but still in the moderate range Liabilities less than 40% of personal income	High Liabilities less than 60% of personal income	Very high Liabilities 60% or more of personal income
Asymmetric Rating Driver Considerations	The liability burden assessment can 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)	Superior 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.

Key Rating Drivers (Continued)

Asymmetric Rating Driver Considerations	The operating performance assessment can 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.
Source: Fitch Ratings.

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. However, given that 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.

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.

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	Local Governments
Historical performance of tax revenues (adjusted for the estimated impact of changes in tax policy) in comparison to growth in national GDP and inflation.	Historical performance of general fund revenues (adjusted for the estimated impact of changes in tax policy when applicable and available) in comparison to growth in national GDP and inflation.

Note: Alternatively, or in conjunction with the above, Fitch may compare key economic and demographic trends exhibited by the issuer relative to national levels. Historical performance is used as a factor for consideration of future performance. Fitch may incorporate different historical periods in its analysis, including the use of five-year, 10-year and/or 20-year CAGRs, to provide a broader perspective. 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 approximately in line with the level of inflation, 'a'; growth below the level of inflation or flat performance, 'bbb'; and a declining revenue trajectory, 'bb'.
Source: Fitch Ratings.

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. Transfers into the general fund from other funds are typically not included as operating revenues as they tend to be non-recurring or unpredictable. However, if transfers in from other funds, such as utility enterprises, are a consistent and material source of operating resources, those transfers may be included in the analysis of operating revenues.

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, tax base revaluation cycles 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.

While the assessment of revenue growth prospects is informed by a metric reflecting historical growth, the assessment can differ from what the metric implies based on the analyst’s knowledge of the circumstances that led to historical performance. For example, many areas saw a pronounced peak followed by a significant decline in their tax base prior to the Great Recession. Using the peak year as a base for a 10-year revenue trend may yield a negative growth trend, while using the following year, after a drop in values, might yield a significantly positive trend. Therefore, longer or shorter time periods may be evaluated to inform expectations for future growth. Any variation from the most recent 10-year period that affects the overall rating will be discussed in rating commentary for the associated rating action.

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%.

Source: Fitch Ratings.

The second component of the revenue framework assessment is the government’s independent legal ability to increase operating revenues. This involves consideration of the 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.

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 provides 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. This concern can be offset to some degree by a consistent record of voter approval for re-authorization.

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.

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.

Source: Fitch Ratings.

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. Fitch notes that the demands of certain expenditure items, such as Medicaid, tend to rise at times of economic and revenue decline; however, this assessment is meant to consider expected performance on average over time.

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	Local Governments
Carrying cost: Governmental debt service + pension ADC + OPEB actual payment/governmental expenditures (most recent year).	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.
<ul style="list-style-type: none"> 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. ADC – actuarially determined employer contribution. 	

Source: Fitch Ratings.

In assessing expenditure flexibility, Fitch evaluates 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 workforce evaluation provides an indication of the relative flexibility to adjust spending on labor, which generally represents a large majority of local government spending. This evaluation focuses on legal restrictions such as collective bargaining laws and minimum staffing requirements, as well as the practical ability to reduce the workforce or its compensation.

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. The debt service component includes payments on all tax-supported debt repaid by the issuer's resources, including debt of special purpose entities to whom the government has sold a portion of its general operating revenues to create a secured credit structure (see section on *True Sale/Municipal Securitization Structures* on page 31). Fitch will modify reported government-wide contributions if possible to exclude those associated with the pensions and OPEB of self-supporting enterprises such as utilities.

Fitch uses the actuarially determined contribution (ADC) 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 determined 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. To calculate the ADC for participants in a cost-sharing multiple-employer plan, Fitch looks at the plan's actual contribution relative to its ADC and applies that

percentage to each participant. For example, if a plan's ADC is 25% above the actual contribution, Fitch will increase the participant's actual contribution proportionally to estimate an ADC attributable to the participant in the calculation of the carrying cost metric.

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% (although the actual borrowing rate may 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, if available, compared to the actual contribution. However, this concern can be offset by the capacity to make benefit changes as needed. If the OPEB plan does not report an ADC and the OPEB contribution is a material contributor to carrying costs, Fitch will look at changes in the liability over time to gauge whether efforts are being made in reducing it.

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. Fitch will also consider in its evaluation of the impact of carrying costs on operations whether a dedicated or restricted revenue source for debt service offers slightly more flexibility than the metric suggests. A tax restricted for debt and capital indicates that debt service is not being paid from the pool of resources used for general operations, and inclusion of the debt service levy in the carrying costs somewhat overstates the budgetary impact of carrying costs.

Fitch considers consistent, sizable use of pay-as-you-go capital to be a source of expenditure flexibility, as capital projects can often be postponed or eliminated in the event of a revenue decline or in some cases financed with debt.

Asymmetric Rating Factor Considerations

The analysis of an issuer's expenditure framework also considers indications of 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 can 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.

Long-Term Liability Burden

Metrics to Support Assessment

State Governments	Local Governments
Direct debt + Fitch-adjusted net pension liability as a percentage of personal income.	Overall local governmental debt + Fitch-adjusted direct net pension liability as a percentage of personal income .
<ul style="list-style-type: none"> The liabilities as a percentage of resident personal income metric indicate the burden on the economic base and is the primary metric for analysis in most cases. 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'. Using current metrics as a base, analysis focuses on expectations for the future, incorporating expectations of capital plans/needs and the pace at which debt is paid down, the adequacy of current pension contribution policies and economic expectations. 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. Fitch also considers the liability burden as a percentage of property value for local governments for which personal income does not fully reflect the resource base. For these governments, Fitch 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'. 	

Source: Fitch Ratings.

Fitch considers the combined governmental debt and Fitch-adjusted 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.

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 except in limited cases, as described below. 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. However, Fitch recognizes that there are often practical limitations to an entity's ability to adjust OPEB.

Fitch incorporates concepts from the workforce evaluation (*see expenditure framework section*) in its consideration of management's ability to reduce OPEB without providing an enhancement to compensation in return. OPEB influence the assessment of the long-term liability burden key rating driver in cases where the estimated liability is exceptionally large and unlikely to be reduced due to legal or practical considerations. 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.

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.

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, as a secondary metric, the measurement method typically used in analyzing self-supporting enterprises. Specifically, the long-term liability burden is compared to both 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.

Fitch reviews the rate at which the debt is repaid in developing expectations for the trajectory of the issuer's liability burden. 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 governmental obligations of the issuer, excluding debt fully supported by user charges such as those generated by utilities. Debt that has been defeased, either legally or economically, is also excluded. The calculations include debt secured by pledged special revenues and revenues sold to special purpose vehicles (*see sections on Special Revenues on page 30 and True Sale/Municipal Securitization Structures on page 31*). 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, for example) 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.

Local government liability calculations include debt issued by overlapping entities. Fitch attempts to obtain the same level of debt detail for overlapping entities as for the issuer being evaluated, but such data are sometimes not readily available. In these cases, Fitch estimates overlapping debt based on the types of entities included and any information available. For instance, if only overlapping general obligation debt information is provided in a state in which most debt is backed by either appropriation or dedicated taxes, Fitch will assume that total debt exceeds reported debt by a significant margin. Rather than calculating an alternate metric, Fitch considers whether total debt would move the metric from one assessment category to another.

Outstanding debt for which the issuer may be obligated in the future, but which is not directly incurred by the issuer, 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 utility user fees, tolls and other entities' moral obligations. The exception is cases where the issuer's resources have been relied on to cover more than a minimal portion of 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. Fitch recognizes that many assumptions go into an actuarial analysis of pension obligations and imposes additional assumptions of its own. The resulting metric is not meant to be precise but to estimate the magnitude of the burden the entity faces.

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. Fitch will be less concerned about a sizable pension liability if it is for a long-closed plan with few remaining participants, as current annual contribution requirements are likely to be stable and more predictable, allowing for the steady elimination of the remaining liability.

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 governmental pension liabilities for which the entity has direct funding responsibility. This usually excludes liabilities associated with enterprises that make contributions from user fees or other resources not derived from the tax base. Some governments may report some or all of the liabilities associated with another entity's employees, reflecting explicit legal and funding responsibility for the pensions of these employees; this is most commonly the case when states assume responsibility for some or all of the pensions associated with local school teachers. Fitch's assessment incorporates these shifts as reported, consistent with our expectations for how these pensions will be managed over time, including how they will resolve funding challenges.

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. Fitch does not adjust the liability if it is already calculated based on an investment return assumption lower than 6%.

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; and
- 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 16*).

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.

Financial Resilience Through Downturns

Metrics to Support Assessment

- Interpretation of scenario analysis results, discussed in Scenario Analysis on page 16, is the primary driver of the financial resilience assessment for both state and local governments.

Source: Fitch Ratings.

Budget Management at Times of Economic Recovery

Metrics to Support Assessment

State Governments	Local Governments
Consideration of historical and expected budgeting practices	Consideration of historical and expected budgeting practices
	Dollar difference between pension ADC and actual pension contribution as a percentage of spending
<ul style="list-style-type: none"> 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. 	

Source: Fitch Ratings.

An issuer's budget management during periods of economic recovery is a key determinant of its resilience at times of cyclical 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 consideration 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; and
- 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 revenue 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 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.

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. Fitch considers historical patterns to identify potential points of liquidity pressure, incorporating expectations for available internal and external liquidity resources.

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. Fitch reviews trends in payments due from other funds or governments to determine whether assets whose conversion to cash may be uncertain are becoming an increasing component of reserves.

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 FAST to highlight 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. The selection of a scenario level and/or the interpretation of scenario results will take into account any event in the historical period being considered that affected revenues, which Fitch views as unlikely to recur, such as a severe decline related to a segment of the tax base that is no longer a significant contributor to revenues.

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 accounting changes that have a notable impact on reported revenue trends, such as the consolidation or disaggregation of operating funds, and significant one-time events. Adjustments are made if the data can be tracked by reviewing audited financial reports or confirmed through the analyst's review with management. Adjustments that affect the rating will be disclosed in associated rating commentary.

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 as 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

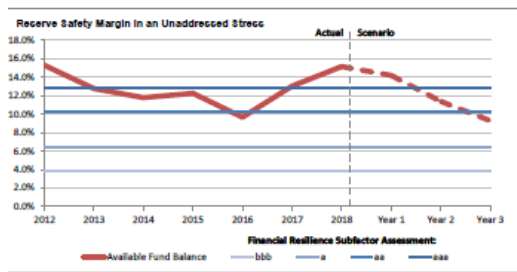
Local scenario analysis begins with consideration of the impact of the three-year scenario revenue estimate (generated by FAST) on an issuer's general fund position in the absence of any offsetting policy action. In cases where the issuer accounts for core operations or maintains reserves outside the 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



Analyst Interpretation of Scenario Results:

Scenario Parameters:	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)	(2.6%)	0.1%	2.7%
Inherent Budget Flexibility	Midrange		

Revenues, Expenditures, and Fund Balance	Actuals							Scenario Output		
	2012	2013	2014	2015	2016	2017	2018	Year 1	Year 2	Year 3
Total Revenues	223,151	232,891	243,666	251,284	257,667	262,924	270,018	263,125	263,327	270,436
% Change in Revenues	-	4.4%	4.6%	3.1%	2.5%	2.0%	2.7%	(2.6%)	0.1%	2.7%
Total Expenditures	231,896	241,746	254,192	258,126	261,008	262,243	265,776	271,092	276,513	282,044
% Change in Expenditures	-	4.2%	5.1%	1.5%	1.1%	0.5%	1.3%	2.0%	2.0%	2.0%
Transfers In and Other Sources	4,234	4,428	3,174	5,761	5,014	5,129	6,310	6,149	6,154	6,320
Transfers Out and Other Uses	40	-	-	281	29	-	-	-	-	-
Net Transfers	4,194	4,428	3,174	5,480	4,985	5,129	6,310	6,149	6,154	6,320
Bond Proceeds and Other One-Time Uses	-	-	-	-	-	-	-	-	-	-
Net Operating Surplus(+)/Deficit(-) After Transfers	(4,551)	(4,427)	(7,353)	(1,362)	1,665	5,810	10,552	(1,818)	(7,032)	(5,268)
Net Operating Surplus(+)/Deficit(-) (% of Expend. and Transfers Out)	(2.0%)	(1.8%)	(2.9%)	(0.5%)	0.6%	2.2%	4.0%	(0.7%)	(2.3%)	(1.9%)
Unrestricted/Unreserved Fund Balance (General Fund)	35,495	30,860	29,963	31,664	25,230	34,185	40,319	38,501	31,469	26,202
Other Available Funds (GF + Non-GF)	-	-	-	-	-	-	-	-	-	-
Combined Available Funds Balance (GF + Other Available Funds)	35,495	30,860	29,963	31,664	25,230	34,185	40,319	38,501	31,469	26,202
Combined Available Fund Bal. (% of Expend. and Transfers Out)	15.3%	12.8%	11.8%	12.3%	9.7%	13.0%	15.2%	14.2%	11.4%	9.3%
Reserve Safety Margins	Inherent Budget Flexibility									
	Minimal			Limited		Midrange		High		Superior
Reserve Safety Margin (aaa)	40.8%			20.4%		12.8%		7.7%		5.1%
Reserve Safety Margin (aa)	30.6%			15.3%		10.2%		6.4%		3.8%
Reserve Safety Margin (a)	20.4%			10.2%		6.4%		3.8%		2.6%
Reserve Safety Margin (bbb)	7.7%			5.1%		3.8%		2.6%		2.0%

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. Inherent budget flexibility is the analyst's assessment of the issuer's ability to deal with fiscal stress through tax and spending policy choices, and determines the multiples used to calculate the reserve safety margin. For further details, please see Fitch's US Tax-Supported Rating Criteria.

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.

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. As noted above, Fitch may select a scenario different from the point estimate or range indicated by the FAST model, in cases in which historical events that affected revenues are unlikely to recur. Alternatively, these events may be considered in the interpretation of scenario results.

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.

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 the FAST model’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^a

		Flexibility of Main Expenditure Items					
		Factor Assessment	aaa	aa	a	bbb	bb
Legal Ability to Raise Revenues	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

^aBased on prior assessments.
Source: Fitch Ratings.

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%.

		Financial Resilience Assessment				
Inherent Budget Flexibility	Margin	aaa	aa	a	bbb	bb ^a
	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.

^aNot applicable 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. N.A. - Not applicable.

Source: Fitch Ratings.

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.

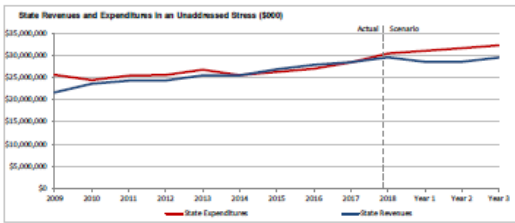
Therefore, Fitch does not set a minimum reserve level for state governments, in contrast to the expectations for local governments laid out above. This reflects not only states' strong inherent budget flexibility but also that states can take action very quickly to respond to events; the tools available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



Analyst Interpretation of Scenario Results:

Scenario Parameters:	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)	(3.5%)	(0.0%)	3.5%

Revenues, Expenditures, and Net Change in Fund Balance	Actuals										Scenario Output		
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Year 1	Year 2	Year 3
Expenditures													
Total Expenditures	40,151,725	40,513,281	41,823,979	43,940,159	43,210,023	41,720,774	42,992,112	43,465,798	45,285,409	47,395,947	48,343,754	49,310,839	50,296,852
% Change in Total Expenditures	3.1%	0.9%	3.0%	(0.2%)	3.3%	(3.4%)	3.0%	1.2%	4.1%	4.7%	2.0%	2.0%	2.0%
State Expenditures	25,599,440	24,432,926	25,443,085	25,563,893	26,783,200	25,525,401	26,273,370	26,973,202	28,389,829	30,408,326	31,016,493	31,636,822	32,269,559
% Change in State Expenditures	(4.6%)	(4.6%)	4.1%	0.5%	4.8%	(4.7%)	2.9%	2.7%	5.9%	7.1%	2.0%	2.0%	2.0%
Revenues													
Total Revenues	36,186,595	39,674,294	40,777,711	40,633,171	41,822,046	41,963,848	43,578,873	44,398,317	45,371,119	46,551,635	48,859,598	48,203,290	47,549,592
% Change in Total Revenues	(2.9%)	9.6%	2.8%	(0.4%)	3.2%	(0.4%)	4.6%	1.9%	2.2%	2.6%	(1.5%)	0.7%	2.9%
Federal Revenues	14,552,205	16,060,355	16,460,894	16,285,266	16,426,823	16,204,773	16,718,794	16,522,596	16,896,580	16,987,521	17,327,271	17,679,837	18,027,293
% Change in Federal Revenues	20.3%	10.3%	2.5%	(1.2%)	0.9%	(1.4%)	3.2%	(1.2%)	2.3%	0.5%	2.0%	2.0%	2.0%
State Revenues	21,634,310	23,593,939	24,396,817	24,347,905	25,495,223	25,459,075	26,860,139	27,875,721	28,474,539	29,564,114	28,532,326	28,523,473	29,522,299
% Change in State Revenues	(14.1%)	9.2%	3.0%	0.2%	4.7%	(0.1%)	5.5%	3.8%	2.2%	3.8%	(3.5%)	(0.0%)	3.5%
Excess of Revenues Over Expenditures	(3,965,130)	(838,987)	(1,046,268)	(1,215,988)	(1,287,977)	(65,926)	586,761	899,519	84,730	(844,212)	(2,484,166)	(3,107,549)	(2,747,260)
Total Other financing Sources	1,073,191	1,289,696	1,547,482	1,095,525	1,601,119	466,930	998,769	602,132	1,087,548	1,052,942	941,664	916,811	900,179
Net Change in Fund Balance	(2,892,139)	450,699	401,214	(120,463)	315,192	401,004	1,585,530	1,501,651	1,172,258	208,730	(1,642,502)	(2,190,738)	(1,847,081)
% Total Expenditures	(7.2%)	1.1%	1.0%	(0.3%)	0.7%	1.0%	3.7%	3.5%	2.6%	0.4%	(3.4%)	(4.4%)	(3.7%)
% State Expenditures	(11.3%)	1.8%	1.0%	(0.3%)	1.2%	1.0%	6.0%	5.8%	4.1%	0.7%	(5.3%)	(6.9%)	(5.7%)
% Total Revenues	(8.2%)	1.1%	1.0%	(0.3%)	0.7%	1.0%	3.0%	3.4%	2.6%	0.4%	(3.6%)	(4.7%)	(3.2%)
% State Revenues	(13.4%)	1.9%	1.7%	(0.5%)	1.2%	1.6%	5.9%	5.4%	4.1%	0.7%	(5.8%)	(7.7%)	(5.3%)

Note: Scenario analysis represents an unstressed 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 four 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 affect 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. Fitch assumes state and local government leaders have the capacity to manage through the risks to which they might be exposed, inducing economic downturns, changes in policy by higher levels of government, environmental risk and cyber-attacks. Evidence of weak management in these areas may cause the rating to be lower, all other things being equal.

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. Lack of transparency, usually noted through habitually delayed publication of audited financial results (beyond 270 days of the end of the fiscal year), can also indicate management weakness.

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. Fitch generally views a tax base with the top payer comprising 10% or more of the total, or the top 10 payers comprising 35% or more, as highly concentrated; at 50% or more the tax base is very highly concentrated. In addition, Fitch believes an entity whose economy is dominated by a single industry may present concentration risk.

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), with respect to the peer group. The rating category expectations for each key rating driver and subfactor continue to be the primary driver of KRD assessments and the rating outcome; however, peer analysis can be used to identify outliers and sector/regional trends.

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.

General Obligation Bonds

Ratings on GO bonds are generally the same as the issuing government's IDR. 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 GO ratings make no distinction between entities in states that allow for local government bankruptcies and those that do not as Fitch does not believe the ability to file for bankruptcy affects general credit quality.

Appropriation-Backed Bonds

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 source 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.

If Fitch identifies project completion as a notable risk, the potential impact of delays or abandoning the project on timely debt repayment will be evaluated. Concerns about project completion arise if the project has a high level of complexity or scale or uses unproven technology. If Fitch believes that there is real risk that a project may not be completed and if failure to complete the project could jeopardize debt repayment, Fitch will analyze completion risk under the "Global Infrastructure & Project Finance Criteria," dated July 2018.

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 related government as expressed in its IDR. The stand-alone analysis may result in a rating lower than the issuing or related entity's IDR. Alternatively, it may suggest a rating higher than the issuing or related 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 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 growth prospects for the dedicated revenue stream, its sensitivity to cyclical decline and the resilience of the security through such declines. Sensitivity and resilience typically drive the rating, with growth prospects a secondary factor, unless Fitch believes the pledged revenue is on a declining trend or if debt service is ascending.

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 is structured to be flat (e.g. a fixed per-parcel assessment), Fitch will evaluate the growth prospects for the base from which pledged revenues are generated. In the fixed per parcel assessment example, Fitch will consider the growth prospects for assessed value as an indication of the ability of the tax base to continue make assessment payments.

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 historical 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 (a minimum of 10 years) 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.

Fitch views an ABT based on coverage of annual debt service (ADS) by projected revenues as more permissive than the more typical test of MADS coverage by historical revenues. Such projections typically incorporate growth and are inherently uncertain. As such, the resilience assessment for a structure featuring an ABT based on projected revenues may be lower than the coverage cushion table below implies.

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 in the sidebar, 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 consecutive 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.

As current revenues form the basis for assessment of 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.

If the obligor has the mandate to raise the tax rate, if needed, this can positively affect the resilience assessment. Conversely, if the obligor can diminish the tax rate or base, Fitch incorporates this into the analysis and considers the issuer's past actions to maintain a sufficient coverage cushion as well as protections provided through non-impairment covenants.

Fitch rates certain bonds secured by an unlimited tax rate using dedicated tax analysis because they are judged to have less exposure to operating risk than general, unsecured debt. 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

Expectations for MADS Coverage Cushions by Rating Level

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

Source: Fitch Ratings.

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.

For fixed per-parcel payments such as special assessments, Fitch considers historical collection rates in its evaluation of the structure's resilience, as this isolates the primary risk of a revenue shortfall.

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 20*), because in the majority of dedicated tax bond securities, there is no ability to raise tax rates or reduce 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.

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.

Asymmetric Additional Risk Considerations

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.

Step 2: Analysis of Exposure to Related Government'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 direct exposure, the rating on the dedicated tax bond security is capped at the related government's IDR. In other cases, the dedicated tax bond security rating can be above the related government's IDR, but with notching limitations. In limited cases, the dedicated tax security can be rated above and without regard to the related government's IDR.

This security analysis is more prescribed for dedicated tax bonds issued by local governments, which can declare bankruptcy under Chapter 9 of the U.S. Bankruptcy Code, than is the case for states. States cannot declare bankruptcy; 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 limits the amount of credit Fitch gives to most state security structures. 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. Fitch will rate local government dedicated tax bonds in states that expressly prohibit local governments from filing for bankruptcy using the same methodology as for other entities without a bankruptcy regime, such as states.

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 with limited notching above the state's IDR.

For a state dedicated tax bond security to be rated above the state IDR, 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 reflects 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 Distinct from the IDR

For a state dedicated tax bond to be rated distinct from and without regard to 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 more limited 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 generally precludes local government tax-supported bonds from being rated higher than the related government's IDR, regardless of the strength of the security. However, in specific situations Fitch considers structural elements and security interests sufficiently strong to warrant a rating above the related government's IDR. In order for Fitch to assign a rating above the IDR, the dedicated tax revenues supporting the bond must be directly deposited into a fund distinct and separate from the related government's general fund.

The table below summarizes Fitch's approach to rating local government bond structures above the IDR of the related local government. The exception is in states with statutory prohibitions on Chapter 9 filings. Fitch treats default risk for local government dedicated tax bonds in those states in the same manner as it does for other entities without a bankruptcy regime, such as states, as outlined above.

Security Protections	Maximum Notches Above IDR of Related Municipality
Continuation of the lien on revenues post-bankruptcy petition	2
+	
Not subject to the automatic stay under section 922(d)	3
+	
Legal barriers to the issuer's ability to divert revenues away from bondholder repayment:	4-6
a. Strong state statutory or constitutional restrictions on use of revenues, limiting their ability to be used for general operations.	
OR	
b. Legal provisions that require physical separation of the revenues from the issuer (e.g. revenues collected and debt service paid by a different unit of government).	
OR	
c. State law expressly prohibits local governments from choosing not to pay bondholders during a Chapter 9 bankruptcy.	
d. Any one of the above (a-c)	4
e. Any two of the above (a-c)	5
f. All three of the above (a-c)	6

True sale structures, commonly referred to as municipal securitizations, involving the isolation of assets in an issuing entity that has no significant operating risk of its own. Most commonly, these securitizations involve sales of personal income or sales tax revenue streams.

6

Source: Fitch Ratings.

If Fitch determines that there is a reasonable basis to conclude that a lien on pledged revenues will continue following a bankruptcy petition, Fitch will rate the bonds up to two notches higher than the related government's IDR. One such circumstance is a statutory lien, defined in Section 101(53) of the Code as a lien arising automatically by force of statute on specified

circumstances or conditions, as it preserves bondholder rights to pledged tax revenues received by the municipality after it enters bankruptcy court. Fitch's evaluation of the statute provides a reasonable basis to conclude that the bonds are supported by a statutory lien. Fitch's U.S. tax-supported ratings generally address only default risk and do not incorporate any measure of recovery given default. The uplift for a statutory lien is an exception, as Fitch believes the statutory lien provides clear enhancement of recovery prospects that should be reflected in security ratings.

If the pledged revenues are special revenues within the meaning of the Code, the consensual lien created by agreement of the parties will continue following the filing of a bankruptcy petition. Such revenues will also not be subject to the automatic stay in a bankruptcy. Fitch recognizes this additional feature with a further maximum one-notch distinction from the related government's IDR, resulting in a total of three notches above the IDR. Special revenue debt with additional protections, typically found in property tax-supported bonds, may benefit from further notching above the IDR, as indicated on the table on page 29 and discussed under Special Revenues below.

Dedicated tax debt with either a statutory lien or pledge of special revenues is first evaluated under Step 1 - Stand Alone Analysis on page 25 to determine if it warrants a rating above the IDR.

Fitch believes true sale structures provide a somewhat clearer separation from the related government's operations, meriting ratings up to six notches above the IDR. This is indicated on the table on page 29 and discussed further in True Sale/Municipal Securitization Structures on page 31.

Special Revenues

Section 902(2) defines five types of special revenues. Three of the five types are relatively straight-forward: (A) receipts from operation of a utility or transportation system; (C) tax increment revenues; and (D) revenues or receipts from particular functions of the debtor (such as vehicle license and deed recordation fees).

Definition 902(2)(B) -- "special excise taxes imposed on particular activities or transactions" -- is somewhat more ambiguous. As such, Fitch will rate bonds supported by special excise taxes (such as hotel or fuel taxes) above the IDR only if a state statute unambiguously limits the authority to levy a specific tax to the financing of a particular project or activity. Ratings on bonds secured by pledged excise tax revenues that are intended for general government purposes will be capped at the issuer's IDR, regardless of how clearly the revenues fit the literal definition under 902(2)(B).

Less direct structures such as revenue-sharing programs based on excise taxes created at the state level may be considered special revenues. 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 revenues as special revenues, although they can result in other limits such as capping the rating at the level of state appropriation-backed debt.

The fifth definition of special revenues in the Code — section 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, as it is ambiguous as to both the source and the use of the revenue 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.

For Fitch to provide a rating based on pledged revenues' status as special revenue under 902(2)(E) in a bankruptcy, all of the following elements must be present:

- 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 basis 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.
- 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.

True Sale/Municipal Securitization Structures

True sale structures, commonly referred to as municipal securitizations, are built on legal principles involving the isolation of assets in an issuing entity that has no significant operating risk of its own. Several states have adopted statutory frameworks that expressly authorize municipal revenue sales and securitizations. Most commonly, these transactions have involved sales of personal income or sales tax revenue streams. These structures are intended to transfer the property interest in the revenue stream away from the seller (the related government that is the sponsoring entity) and, therefore, place the revenues beyond the claims of the seller's creditors in a bankruptcy proceeding.

Fitch may rate debt issued under a true sale/municipal securitization structure above the IDR of the sponsoring entity if state law enables the creation of the special purpose issuing entity (SPE) and allows the sponsoring entity to transfer its property interest in the pledged revenues securing the bonds to the limited purpose entity that issues the bonds. The analysis must be supported by reasoned legal opinions stating that the sponsoring entity has sold all of its right, title and interest in the dedicated revenue stream to the issuing entity.

Residual revenues will typically flow to the sponsoring entity as part of the true sale; the receipt of residual revenue by the sponsoring entity does not affect Fitch's analysis of the true sale. To assign a rating to a true sale transaction, Fitch requires a true sale legal opinion. Fitch also considers whether the issuing entity may reasonably be considered independent from the sponsoring entity. If a significant portion of the sponsoring entity's revenues were needed to pay the SPE's debt service, questions might arise about the issuing entity's independence and the structure as a whole.

If the SPE's maximum allowable annual debt service under its bond indenture constitutes more than 20% of the sponsoring entity's revenues, Fitch may not rate the issuing entity as an independent unit of government. The 20% threshold is calculated by dividing maximum annual debt service — based on the security's additional bonds test or other constraint on leverage — by the previous audited fiscal year's total governmental revenues at the time of issuance. The remainder of revenues are typically released to the sponsoring entity for general operating

purposes. The credit value of pledged revenues that are subject to appropriation before being transferred to the issuing entity is limited to one notch below the transferring entity's IDR.

As indicated in the table on page 29, the rating on bonds issued pursuant to a true sale/municipal securitization structure can be no higher than six notches above the IDR of the related government. Although Fitch believes that the risk of successful challenge is remote, the local government's rating is relevant to the extent that the local government could be incited to challenge the securitization structure at times of fiscal distress. Officials of the related government typically control the securitization corporations, highlighting this risk and limiting notching above the government's IDR.

Standalone Governmental Entities

Some local governments are established solely or primarily for the purpose of financing infrastructure or facilities. Fitch rates the debt of such entities by applying the step 1 stand-alone dedicated tax bond analysis. Fitch does not assign IDRs to such entities, believing that an analysis of budgetary flexibility and operating performance would not provide additional insight into credit risk. For example, in these cases, a very high fixed cost burden reflects the entity's intended purpose rather than a sign of fiscal distress.

For entities that may be related to a broader government such as a library, utility or park district, Fitch evaluates whether the special district's rating should be limited by a related, broader local government's IDR. Tax-supported enterprises that constitute separate municipalities will be rated on the basis of their independent characteristics.

To determine separation, Fitch evaluates whether the entity constitutes a municipality under state law for purposes of the Code. Fitch will also consider whether the entity:

- has a separate governing body (separation may exist even if that body is appointed by members of the related local government).
- presents separate financial statements (although its financial operations may also be reported on another unit's financial statements).
- the entity has its own employees and revenue-raising powers not subject to approval by a related local government, if it provides general governmental operations. Approval may be required by voters, the state or a regulatory body and still be considered a separate unit of government by Fitch.
- transfers residual revenues to a related government once debt service and operating expenses are paid.

If Fitch determines the entity is not clearly a separate municipality under Chapter 9, the rating is typically 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. If most but not all elements listed above are met, Fitch will consider whether a rating relationship with the broader government is appropriate. For example, in the case of SPEs created using a true sale structure, the issuing entity's rating will be capped at six notches above the related government's IDR as discussed on page 31.

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 VRDBs, bank bonds whose security is on parity with their corresponding VRDBs carry the same underlying long-term rating as those VRDBs. 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.

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 rating 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. If the information falls below an acceptable level, for any reason, Fitch will withdraw any affected ratings.

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*). Specifically Fitch will disclose the following in associated rating action commentary:

- factors influencing a rating outside of the key rating drivers described in this report;
- use of a longer or shorter historical revenue trend than the most recent 10-year period in the assessment of revenue growth prospects, if it affects the overall rating; and
- adjustments to reported accounting data that have a notable impact on reported revenue trends and affect the overall rating.

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.

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 the state education framework, 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

As discussed in Section 1, 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 state funding, as dictated by 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 funding framework; however, since state funding is usually determined by formula on a per-pupil basis, the district's enrollment trends and any projections are almost always the most important consideration related to a school district's local economy. This analysis incorporates 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.

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 other 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. 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.

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 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 state 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-backed debt outlined on page 23, 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 government-wide 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.

Appendix E - Short-Term Debt Rating Criteria

Scope

This methodology describes the criteria applicable to derive short-term ratings for entities rated using the "U.S. Public Finance Tax-Supported Rating Criteria."

Rated instruments with an original maturity of 12 months or less will be assigned a short-term rating. For obligations with maturities between 12 months and 36 months, Fitch Ratings can, upon request, provide a long-term rating in addition to, or instead of, a short-term rating.

Key Rating Drivers

Long-Term Rating Remains Fulcrum: Credit risk remains asymmetric in a number of dimensions, including across varying time horizons. An entity with relatively weak long-term risk but a better short-term risk profile may survive in the short term, whereas an entity with a relatively strong long-term risk but an acutely weaker short-term risk profile will see short-term risk take precedence. As such, Fitch's long-term rating scale places significant emphasis on deficiencies in the short-term profile and thus is the strongest driver of short-term ratings. Short-term ratings are linked to long-term ratings according to Fitch's Rating Correspondence table below.

Liquidity Factors Apply at Margin: Fitch will apply discriminatory tests allowing us to distinguish between short-term risks when specific factors apply. Themes for positive distinctions on liquidity can be summarized as the combination of stronger liquidity-generation capacity (including support) with less-vulnerable capital structures. These factors allow us to choose between short-term ratings within broader parameters driven by the correspondence table with long-term ratings.

For the long-term ratings where one of two short-term ratings can be assigned, the anticipated source of repayment and structure of the debt, together with specific liquidity factors, will be the main determinant of which of the two short-term ratings will be assigned.

Short-term debt with a rating directly linked to a third-party liquidity provider is evaluated using Fitch's "U.S. Public Finance Structured Finance Rating Criteria," available at www.fitchratings.com.

Rating Correspondence

Long-Term IDR	Baseline Short-Term IDR/Rating	Higher Short-Term IDR/Rating
From AAA to AA-	F1+	N.A.
A+	F1	F1+
A	F1	F1+
A-	F2	F1
BBB+	F2	F1
BBB	F3	F2
BBB-	F3	N.A.
From BB+ to B-	B	N.A.
From CCC to C	C	N.A.
RD	RD	N.A.
D	D	N.A.

IDR - Issuer Default Rating. N.A. - Not applicable.
Source: Fitch Ratings.

Cash Flow Borrowings

For ratings on cash flow borrowings, including revenue anticipation notes (RANs), tax anticipation notes (TANS) or tax and revenue anticipation notes (TRANs), short-term ratings will be differentiated based on a metric measuring the anticipated coverage. Transactions where the ratio of projected cash balances (including borrowable resources in other funds) at maturity divided by the note repayment amount is above 150% will be assigned the higher short-term rating where a short-term rating is required. For notes with multiple maturities, this threshold must be met for all maturities to qualify for the higher short-term rating.

Borrowable resources include funds belonging to the note issuer but restricted in use and outside the normal cash flow. Typically, such assets include revenues restricted for specific programs, capital reserves, special revenue fund balances and trust funds. These assets should be subject to the issuer’s investment guidelines for operating funds. Fitch reviews the identified funds to determine the legal and practical restrictions for the borrowing, repayment timing requirements and these funds’ vulnerability to fluctuation.

Interim Financing

Since bond anticipation note (BANs) and floating-rate note (FRNs) repayment is based on access to long-term debt markets, baseline short-term ratings will always be assigned to these transactions where a short-term rating is required.

Internal Liquidity Borrowings

Ratings for short-term instruments to be repaid with internal liquidity will be driven by the table below. The financial resilience factor broadly reflects a minimum ability of government credits to manage through a revenue downturn, consistent with the long-term rating and also supportive of the higher short-term rating. The minimum coverage ratio specifies the level of available liquidity relative to the amount of borrowing needed to qualify for the higher short-term rating. Both thresholds would need to be met for the assignment of the higher short-term rating. Otherwise, the baseline rating will be assigned.

Thresholds for Higher Rated Short-Term Rating – Tax-Supported

Higher Short-Term Rating	Minimum Financial Resilience Assessment	Minimum Coverage Ratio ^a
A+/F1+	aa	1.25x
A/F1+	aa	1.25x
A-/F1	a	1.1x
BBB+/F1	a	1.25x
BBB/F2	bbb	1.1x

^aCoverage Ratio – (Unrestricted cash, investments [as discounted pursuant to Fitch’s Internal Liquidity Worksheet] and liquidity facilities)/Maximum potential liquidity requirement for the following 90-day period.
Source: Fitch Ratings.

Fitch calculates the maximum potential liquidity requirement as total outstanding VRDBs, maximum authorized CP and other debt puttable within 90 days. As part of its analysis, Fitch also considers any circumstances that limit an obligor’s CP issuance to an amount below the maximum authorized and notes other mitigating factors that might affect the ratio. Interest accrued at the maximum rate is not included in the calculation.

Available resources include cash, highly liquid investment-grade securities (*as discounted in the Internal Liquidity Worksheet table linked below*) and liquidity facilities that the issuer may directly access.

Available liquid resources held by an obligor should be discretionary funds that, if tapped in full, would not disrupt normal business operations. In addition, Fitch only credits those resources that are relatively stable.

Fitch analyzes the potential seasonality or cyclical nature of core funding streams to determine if available resources have been inflated by surges in such revenues. Only cash and investments available consistently through the year are considered liquid resources. However, the segregation of such funds is not necessary.

Fitch requests reports detailing the marked-to-market value of available liquid resources. These reports are typically requested quarterly but may be requested more or less frequently as determined by Fitch, depending on market volatility or the interest rate mode. The associated worksheet is available by [clicking here](#).

Fitch measures resource sufficiency relative to the maximum potential liquidity requirement over the 90-day period prior to the date of such potential need.

Applying Asset Discounts

Fitch discounts the market value of certain asset classes when evaluating an obligor's liquid resources (see the Internal Liquidity Worksheet table linked above). Investment classes with greater price volatility, less market liquidity or poorer credit quality are discounted more heavily. These discounts are principally derived from Fitch's "Structured Finance and Covered Bonds Counterparty Rating Criteria: Derivative Addendum," and were developed based on a study of historical volatility in government bonds, in addition to its "Closed-End Funds and Market Value Structures Rating Criteria." Both reports are available on Fitch's website at www.fitchratings.com.

Since many alternative investments are difficult to value or have restricted liquidation policies, they are not considered as available liquidity. Investments in traditional equities can exhibit severe price volatility and are also excluded from consideration. Even for VRDBs where tenders may be infrequent and dates of when funds must be available are determinable, only those investments with minimal risk to principal are credited as part of available liquid resources.

Structural Importance of Liquidity Facilities

Liquidity facilities structured to ensure a reliable, timely transfer of funds from the bank to the obligor are generally included as part of an obligor's available liquid resources. Fitch focuses on the structural elements of these facilities, including timing provisions among bond, bank and other relevant documents, to ensure that the obligations under the agreements are coordinated. Termination provisions being limited to major credit events and the availability of the facilities to the obligor alone are additional considerations. These facilities differ from those considered in structured municipal finance transactions, which are dedicated, third-party facilities available to the trustee and paying agent for the benefit of noteholders and exclusively for the repayment of specified short-term debt.

Where VRDBs or CP notes are partially supported by a liquidity facility or facilities, the ratings of banks providing the facilities, along with the structural elements of the facilities, are additional considerations. If the bank providing the liquidity facility is rated at least 'F1', the full amount of the facility counts toward an obligor's available liquid resources. The availability of additional liquid resources becomes more important if contractual elements of the facility are structurally weak or if one or more participating banks has a short-term rating of 'F2' or is not rated by Fitch. Liquidity support provided by banks with short-term ratings below 'F2' is generally excluded from available liquid resources.

Timing Is Key

Regardless of the type of debt obligation, the availability of liquid resources should coincide with the timing of the maximum potential liquidity requirement. Settlement periods are a consideration in this analysis.

For example, an obligor should ensure that liquid funds are available every 30 days if liquidity is needed monthly. The need for an obligor to produce weekly or monthly liquidity would be unnecessary with a one-year put. Nonetheless, Fitch will evaluate the process taken at least 90 days in advance of the put to ensure the sufficiency of available liquid resources.

Significance of Codified Procedures

Fitch considers each obligor's experience in treasury, debt management and investment functions. Upon a failed remarketing of VRDBs or a failed rollover of CP notes, the obligor must act swiftly to ensure timely payment to bondholders or noteholders. To that end, specific asset liquidation procedures ensure that an obligor is prepared to transfer required funds to a paying agent as needed.

A detailed liquidation procedures plan (LPP) is evidence of management's commitment to ensuring timely payment to holders of VRDBs or CP notes. At a minimum, the LPP should include the names or positions of responsible parties at the obligor, as well as counterparts at relevant banking and other financial institutions. The sequence of events to ultimately pay off outstanding debt obligations, including specific days and times, is likewise important to ensure the LPPs are coordinated with the various bank agreements. The LPP should be updated and submitted to Fitch as necessary.

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