FitchRatings

Public Finance
Global

Public Sector, Revenue-Supported Entities Rating Criteria

Master Criteria

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This criteria report updates and replaces the criteria report titled "Public Sector, Revenue-Supported Entities Rating Criteria," dated Sept. 1, 2021.

Related Criteria

U.S. Public Finance Tax-Supported Rating Criteria (May 2021)

Government-Related Entities Rating Criteria (September 2020)

Public-Sector Counterparty Obligations in PPP Transactions Rating Criteria (April 2022)

International Local and Regional Governments Rating Criteria (September 2021)

National Scale Rating Criteria (December 2020)

Analysts

Dennis Pidherny
+1 212 908-0738
dennis.pidherny@fitchratings.com

Karen Fitzgerald
+1 415 796-9959
karen.fitzgerald@fitchratings.com

Emily Wadhwani
+1 312 368-3347
emily.wadhwani@fitchratings.com

Kevin Wu
+1 212 908-0217
kevin.wu@fitchratings.com

James Batterman, CFA (PAM)
+1 212 908-0385
james.batterman@fitchratings.com

Scope

Public Sector Revenue-Supported Entities: This report sets out Fitch Ratings' criteria for rating public sector or not-for-profit entities that provide or support essential public or social services and activities, and whose debt is intended to be repaid from the entity's own revenues and resources. Such entities include, but are not limited to, essential public utilities, educational institutions, healthcare-related entities, and affordable housing providers (including U.S. housing finance agencies), social services providers, charitable/cultural institutions, public transportation agencies, state revolving funds, community development financing institutions, government-owned urban development entities and strategic investment holding companies. Issuer revenues and resources may be derived from various sources, including charges for services or goods sold, public grants, subsidies, endowment funds, and related income and tax support.

The criteria are used to assign both Issuer Default Ratings (IDRs) and ratings on individual debt instruments (issue ratings). IDRs and issue ratings under these master and related sector criteria are international scale ratings. The ratings do not incorporate recovery prospects given a default. Issue ratings are, except in limited circumstances described herein, set at the entity's IDR or Standalone Credit Profile (SCP). These criteria apply to both new ratings and the surveillance of existing ratings.

For issuers and debt instruments in local markets that require national scale ratings, Fitch will apply the "National Scale Rating Criteria" in conjunction with these master criteria.

Standalone Ratings and SCPs: Where a standalone rating or SCP assessment is to be determined for U.S. enterprises related to a municipal government or when applying the "Government-Related Entities Rating Criteria" outside the U.S., such standalone rating or SCP assessment would be considered under this master criteria and any related sector criteria. However, these criteria are typically not used to assess SCPs for non-U.S., government-owned financial institutions rated in conjunction with the "Government-Related Entities Rating Criteria" and other applicable criteria.

Transportation Revenue Bonds: The criteria do not apply to transportation revenue bonds issued to fund airports, ports, roads and bridges rated under Fitch's "Rating Criteria for Infrastructure and Project Finance" and associated sector criteria.

Key Rating Drivers

Fitch explicitly does not weigh the assessments of individual key rating drivers in coming to an overall rating conclusion. There is no standard formula to link the following inputs into an exact rating: the individual assessments inform but do not dictate the final rating outcome.

Revenue Defensibility: Fitch's analysis addresses the entity's ability to generate cash flow based on its legal framework and fundamental economics. Fitch will evaluate demand and pricing characteristics that influence revenue volatility and the tools available to the entity to respond to fluctuation in demand.

Operating Risk: Fitch's analysis considers the entity's operating profile, including predictability and volatility of costs, life-cycle/capital renewal risks, key resource cost risks and the ability to manage growth in costs over time.

Financial Profile: Fitch assesses the level of financial flexibility that an entity can sustain as it encounters stresses expected to occur over the relevant forecast period. The assessment considers the entity's liquidity profile and overall leverage metrics in the context of its overall risk profile.

Asymmetric Risk Factors: Risk factors such as debt structure, management and governance, legal and regulatory, and country risks are also considered when assigning a rating. These risk factors are not scaled, and only weaker characteristics affect the rating assigned (i.e. asymmetric in nature). In rare circumstances, other matters could affect the final rating/SCP, such as a counterparty risk or other supportive structural features.

Framework

This master criteria report is used by Fitch in conjunction with any relevant sector-specific criteria. Sector-specific criteria provide indicative metrics and stress levels, additional factors, attribute expectations or specific methodologies. This master criteria report assesses attribute rankings of "stronger", "midrange" or "weaker". Sector criteria may provide refinements and group assessments into categories aligned to rating categories such as 'aaa', 'aa' and 'a' (stronger), 'bbb' (midrange), and 'bb' and 'b' (weaker), for example.

The ranking of attributes in this report represents Fitch's analytical views for a wide range of entities. The lists are not exhaustive and some attributes may not be relevant to a specific entity. The attribute tables are not checklists but qualitative guidance in assessing the risk profile of the entity and are only part of the rating process. Specific metrics for the master criteria are identified but, where relevant, additional metrics may be used. Furthermore, as Fitch's analysis supports a forward-looking view, rather than a single point in time, assessments may reflect the consideration of metrics based on historical averages, estimates and trends,

Not all rating factors in these criteria may apply to each individual rating or rating action. Each specific rating action commentary or rating report will discuss the factors most relevant to the individual rating action.

For credits covered under the scope of the master criteria but not covered under the scope of specific sector criteria, the master criteria may be solely used.

Issuer Default Ratings and Issue Ratings

Ratings under this master criteria are generally IDRs (or SCPs as noted) and are used to inform instrument ratings generally. An entity is assigned an IDR where it is a distinct legal entity. An IDR generally reflects all of an entity's financial obligations, whether or not they have distinguishing security features. In assigning an IDR, Fitch considers the entity's entire liability structure to form a view on risk of insolvency, and then takes into account any legal framework that may reduce the risk of default associated with any specific debt instrument, even when the entity is in bankruptcy or receivership proceedings. Such protections exist but are not the norm. See the *Debt Structure and Contingent Liabilities* section below.

In the U.S., Fitch will assign an IDR to enterprises that are determined to be separate municipal entities for purposes of filing bankruptcy under Chapter 9 of the U.S. Bankruptcy Code (the Code), as well as an issue-specific rating for each Fitch-rated security. Enterprises that are related to municipalities will instead be assessed an SCP. Assigning IDRs or assessing SCPs aligns default risk ratings in this sector to those assigned by other groups across Fitch's global rating platform. Conduit issuers, including issuers that benefit from balanced, pass-through contractual frameworks, will not be assigned IDRs or assessed SCPs. In addition, certain entities are established solely or primarily for the purpose of financing or accounting for infrastructure or facilities. Fitch will generally not assign an IDR or assess an SCP to such entities where an assessment of revenue and operating profile would not provide additional insight into credit risk.

An IDR reflects our assessment of an entity's relative vulnerability to default on its financial obligations. The SCP similarly represents the credit profile of the relevant entity on a standalone basis irrespective of its relationship with, and the credit quality of, its related

IDR/SCP Derivation Steps

1	**Risk profile** Potential volatility of the entity's cash flow evaluated through assessment of revenue defensibility and operating risk key risk factors assessment (Stronger, Midrange or Weaker)
2	**Financial profile assessment** Expected trajectory and resilience or sensitivity to stress evaluated through appropriate Fitch-developed scenarios in the context of entity's risk profile
3	**Rating/SCP positioning table** Combine risk profile with a financial profile assessment into a suggested analytical outcome
4	**Asymmetric risk and other matters** Refine suggested analytical outcome to notch-specific positioning based on appropriate peer analysis, additional supportive factors, asymmetric additive risk factors and counterparty ceiling, if appropriate
	↓
5	**IDR/SCP**

Source: Fitch Ratings

municipality. Typically, all of an issuer's individual securities will be assigned the same rating as the IDR/SCP. However, where an SCP has been assessed, issue-specific ratings may be constrained by the IDR of the related municipality as outlined in Fitch's "U.S. Public Finance Tax-Supported Criteria."

IDRs/SCPs and issue ratings do not incorporate any assessment of recovery prospects, and distinctions between default risk in securities by seniority in this sector will only be made where there is a basis in the finance documentation and legal framework to support a conclusion that a default on one tranche will not result in a payment default on other senior tranches. A specific debt structure may include additional security devices, such as a mortgage. However, these protections are not effective at preventing default in bankruptcy and are not a basis to distinguish the instrument rating from the IDR or SCP.

Where issuers have been assigned an IDR and rating distinctions can be made based on the seniority of debt, the rating of the most junior tranche will be commensurate with the IDR. Similarly, where issuers have been assessed an SCP and rating distinctions can be made based on the seniority of debt, the rating of the most junior tranche will be commensurate with the SCP (or the constraint set by the related municipality's IDR, where applicable). Where conditions appropriate to making distinctions between securities based on seniority do not exist, all securities will be rated at the same level as the IDR/SCP.

Determining the Relationship to General U.S. Municipal Government

For certain enterprises that are not considered separate entities, issue ratings will be capped by the credit quality of the general government or other related entities. In determining whether or not an entity is separate, Fitch evaluates whether the enterprise constitutes a municipality under state law for purposes of the Code. Fitch will also consider whether the enterprise:

- has a separate governing body (separation may exist even if that body is appointed by members of the related government);
- presents separate financial statements (although its financial operations may also be reported on another unit's financial statements);
- has its own employees and revenue-raising powers not subject to approval by a related 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; and
- transfers residual revenues to a related government once debt service and operating expenses are paid.

If Fitch determines the enterprise is not clearly a separate municipality under Chapter 9, issue ratings are almost always capped at no more than three notches above the IDR of the related broader government of which it is a part or its related municipality. Fitch generally does not assign an IDR or cap issue ratings relative to related entities that exist solely or primarily as financing, accounting or pass-through entities, and are not general governments. While an entity's SCP is not explicitly capped by the credit quality of the general government or other related entities, all the enterprise's ratings may be closely tied to these entities where significant legal, financial or operational connections exist — for example, where credit agreements cross-default or if one fund is drawing upon the cash of the other, regardless of internal policies.

Healthcare-Related Entities

Certain healthcare-related entities do not provide sufficiently broad services to be rated as an acute care hospital or life plan community under those sector criteria, but are covered under the scope of the "Public Sector, Revenue-Supported Entities Rating Criteria." These entities are generally providers of healthcare services that have agreements to participate in Medicare, but do not receive inpatient acute care admissions. Such entities could include a skilled nursing facility, a comprehensive outpatient rehabilitation facility, a home health agency, a hospice, a clinic, a rehabilitation agency or a public health agency that participates in Medicare but does not offer full hospitalization services.

Government-Owned Strategic Investment Holding Companies

Government-owned strategic investment holding companies are covered under the scope of the master criteria instead of the sector-specific "Investment Holding Companies Criteria." This type of holding company is typically majority or wholly owned by governments directly or indirectly, and exists to undertake important public policy objectives such as fostering local economic growth, maintaining local financial stability and containing systemic financial risk. Activities of held companies may include upgrading local industrial bases, providing funding for key urban infrastructure projects and managing government-led investment funds, and the strategic holding company itself may carry out shareholder duties on behalf of the government for held entities. In addition to regular dividend income as the main operating revenue sources, these holding companies may receive capital injections and other forms of support from governments due to their policy mission. The track record and magnitude of such government support is evaluated under the "Government-Related Entities Rating Criteria."

Fitch uses individual financial statements rather than group consolidated statement for SCP assessment of government-owned strategic investment holding companies and assumes that this type of holding company is ring-fenced from its subsidiaries (i.e. revenue of the parent cannot be used for the group debt servicing, and vice versa).

Key Risk Factors' Assessment Informs Issuer Risk Profile

The issuer's overall risk profile, assessed through revenue defensibility and operating risk key rating factors, is the starting point in the rating analysis; however, the relative influence on a rating of qualitative and quantitative factors varies between entities in a sector as well as over time. As a guideline, where one key rating factor is significantly weaker than others, this weakest element tends to carry a greater weight in the analysis. Fitch notes that revenue and operating risk characteristics in the U.S. tend toward stronger attribute assessments generally for government entities, and midrange to weaker for not-for-profit sector entities. Outside the U.S., there is a wide range of characteristics, and these may tend toward midrange and weaker attribute assessments. Moreover, outside the U.S., ratings are more likely to be affected by other factors. As an example, in developing markets, asymmetric corporate governance factors, the country's general economic condition, or heightened uncertainty regarding the dependability of a legal or regulatory regime may be negative to the rating, resulting in a lower rating than suggested by the *Rating Positioning Table*. Counterparty ratings may cap revenue source quality and be reflected in the assessment of revenue defensibility, and, ultimately, the ratings may be limited by application of sovereign ceiling or sovereign ratings cap.

Financial Profile Placed in Context of Key Risk Factor Assessments

Fitch's analysis addresses the entity's ability to generate predictable cash flow. This requires an evaluation of the fundamental characteristics of the underlying entity, considering related key rating factors such as the revenue and operating risks that drive its fundamental economics.

The opinions formed on the drivers of cash flow stability are expressed in revenue defensibility and operating risk attribute assessments. These assessments are presented in these criteria as stronger/midrange/weaker, reflecting a judgment of relative vulnerability to the risk assessed. The entity's resulting risk profile is a key element considered in an evaluation of its financial profile.

Fitch will consider historical information, entity forecasts and third-party data when available to evaluate future performance. The use of historical information will depend on its quality and Fitch's judgment of its relevance to an evaluation of future performance. Historical information is likely to be most relevant for established entities and markets where issuer-specific performance data are available. Fitch views assumptions or estimates based on such performance information as more reliable than general market studies and related forecasts of future price and demand dynamics. Relevancy of historical information may be challenged where changes in the sector or the entity's operating environment suggest uncertainty of future performance.

Ratings are through the cycle and consider a scenario that reflects changes in the financial profile of an entity as it encounters stresses that can be expected over the relevant forecast period. These stresses may include cost, revenue or operating stresses, and are incorporated in scenarios considered in the rating process. Exposures to financial risks that are material as noted in the evaluation of the debt structure, such as currency, refinance or interest rate risks, will be incorporated where relevant in scenarios.

The ability of the entity to make timely payments takes into account its full resources and capacity as captured in metrics measuring its liquidity profile. Fitch considers the debt service coverage ratio, day's cash on hand and coverage of maximum annual debt service (MADS), as well as metrics measuring the entity's overall financial and operational flexibility, such as net adjusted debt and other liabilities to cash flows available for debt service (CFADS)/EBITDA or other measures of overall leverage.

The correspondence of risk profile, financial profile and suggested outcomes for ratings and SCPs are presented in the *Rating Positioning Table* *(page 18)*. The suggested outcome is not formulaic or model driven but requires qualitative judgment to place metrics in an overall context for each entity. Factors may be present that support a higher rating/SCP than indicated by the table and the metrics, such as exceptionally strong contractual protections, a benign operating or competitive environment, or market dynamics that reduce potential price or cost volatility. By contrast, factors may be present that suggest a lower rating/SCP than indicated by the table and the metrics, such as a limited base of demand or significant constraints on supply of key resources.

Key Risk Factor Attributes Considered in Stress Levels

Most key risk factors discussed in the master criteria or the sector-specific criteria will help frame the types and levels of stresses that Fitch will apply in its analysis, notably through the assumptions underlying the scenarios. The revenue and cost volatility used in a scenario should align generally to the assessment of the key rating attribute of the entity. As an example, strong revenue defensibility would suggest a lower assumed volatility in the scenario, and weaker revenue defensibility would suggest a scenario with higher volatility.

Asymmetric Risk Assessments

The analysis will consider whether certain additional risk factors may affect the rating/SCP conclusion. These additional risk factors work asymmetrically, where only below-standard features are factored into the final rating levels, while more credit-positive features are expected to be the rule, and would have a neutral impact on the rating. These risk factors include debt structure, capital planning and development, management and governance, legal and regulatory matters, information quality, country risk and the dependability of the legal regime. In applying these additional risk assessments, it will be noted how the assessment has affected the rating/SCP positioning suggested when assessing the entity's financial profile.

The agency forms an opinion on the effects of the terms of the debt on the solvency of the entity. These effects include risks, such as unexpected rise of interest or principal, and protection, such as deferrable debt service or compulsory cash sweep. The analysis considers debt structure, including priorities, amortization, maturity, interest rate risk and associated hedging, liquidity, reserves, and financial covenants and triggers in the context of the entity's operating environment. See the *Debt Structure and Contingent Liabilities* section below.

The rating of an entity and its debt instruments inevitably is placed in the context of the environment, political, legal and economic, in which it operates. The effect may be to constrain ratings to a Country Ceiling as discussed below under the *Macro Risks* section— *Country Ceiling and Dependability of Legal Regime*.

Counterparty Risks and Other Matters

Where relevant to the sector, the analysis will consider other material risks that could affect the ratings, including treatment of covenants and consequence of breach of covenants; the potential event risks that may adversely affect the entity's ability to repay the debt; or counterparty risk. The latter means that the rating of the entity may be constrained by the rating of the weakest counterparty if the financial resources or cash flow of the entity are heavily dependent on this counterparty. See *Other Matters* section for details.

Revenue Defensibility

Fitch evaluates an entity's relative ability to defend and maintain its revenue profile despite challenges in its operating environment.

Gross revenue of an entity is generally driven by a combination of availability, price and volume. Risk arises if output or service cannot be adequately provided or if demand for the output or service does not exist at a price at which the entity is able to meet its operating expenses and service its debt. An entity may have revenues not directly connected to usage or output, such as dedicated taxes assessed on activities unrelated to its functions or from income from and withdrawal of capital from investments, and these will supplement operating revenues, mitigating price and demand risks. Risks associated with these other sources of revenues, which may affect the financial profile of the entity, are also considered.

The sources of revenue vary by sector. There may be one or a few payers such as government or private health insurance providers in the healthcare sector, or contractually obligated power purchasers in the energy sector; earnings from substantial endowment or similar investment funds in the higher education and non-profit healthcare and charitable activities sectors; rents paid in housing projects and proceeds from residential housing or other sales; fees and charges paid by a significant number of users such as students, patients, visitors, and water and power customers; tariffs paid for transportation and other public services provision; or dedicated tax revenues.

Fitch will evaluate the relative stability and predictability of material sources of cash flow to the entity when considering its ability to service its debt. The analysis considers the entity's revenue framework, the effects of any performance requirements on revenues, and exposure to demand for its services, which shape the overall revenue profile. Where an entity has meaningful reliance on tax revenues to supplement operating performance, volatility of that revenue stream will be considered consistently with approaches under Fitch's "U.S. Public Finance Tax-Supported Rating Criteria" and "International Local and Regional Governments Rating Criteria."

There are also certain not-for-profit enterprises, such as endowed foundations, that do not rely on output or services for their revenues and, therefore, do not experience demand or pricing risk. For these entities, revenue defensibility may not be a relevant rating factor and, therefore, not assessed. Consideration of revenues for these entities is addressed in the assessment of their financial profile.

Attribute Guidance Table — Revenue Defensibility

	Stronger	Midrange	Weaker
Demand Characteristics		Fully contracted revenues[a]	
	Fully contracted (lease or “take-or-pay” contracts) with stronger financial strength counterparties equal to or exceeding rated debt life	Fully contracted (lease or “take-or-pay” contracts) weighted with midrange financial strength counterparties equal to or exceeding rated debt life	Fully contracted (lease or “take-or-pay” contracts) weighted with counterparties with weaker financial strength
		OR demand-based revenues	
	Demonstrated and expected lower-volatility user-based demand; expected to decline marginally in an economic downturn or decline marginally on a countercyclical basis (less than the change in corresponding macro variable)	Demonstrated user-based demand expected to fluctuate with changes in the macro economy generally, including countercyclical change (e.g. generally tracks with a change in GDP)	Demonstrated user-based demand expected to contract materially more than a corresponding change in the macro environment, including countercyclical change of demand (e.g. generally declines as a multiple of a GDP change)
	Diverse customer base with no meaningful concentration of customers or some concentration on fully contracted (lease or “take-or-pay” contracts) with stronger financial strength counterparties.	Diverse customer base but some customer concentrations (top 10 customers account for a moderate proportion of demand)	Diverse customer base but mixed with high customer concentrations (top 10 customers account for a significant proportion of demand)
	Demand growth in service area expected to be strong due to strong economic growth prospects in the region	Demand growth in service area expected to be marginally positive due to solid economic growth prospects in the region	Demand growth in service area is expected to be flat to slightly negative due to limited or negative economic growth in the region
	Stronger	**Midrange**	**Weaker**
Pricing Characteristics	Entity has independent ability and full flexibility to collect revenues sufficient to cover all costs through increases in charges/tariffs/taxes	Legal or contractual framework establishes ability to collect revenues sufficient to recover at least inflationary increases in costs through increases in charges/tariffs/taxes and recover commodity price volatility	Legal or contractual framework constrains ability to collect revenues sufficient to recover costs through increases in charges/tariffs/taxes to levels likely below inflationary price increases or constrains the ability to recover volatile commodity costs
	OR	OR	OR
	Highly supportive regulatory regime aims to maintain compensation for services at a level consistently beyond solvency of not-for-profit or public authority providers of an essential public service	Supportive regulatory regime aims to maintain compensation for services at a level consistently supporting solvency of not-for-profit or public authority providers of an essential public service	Regulatory regime maintains compensation for services at levels that may challenge solvency of not-for-profit or public authority providers of an essential public service, requiring other resources such as gifts, grants or extraordinary supports for balance
	Change in charges/tariffs unlikely to materially affect demand	Change in charges/tariffs may marginally affect demand but within limits will provide increased revenues	Change in charges/tariffs likely to materially affect demand
	Market dominance provides negotiating strength on key revenue contracts	Market position as a significant competitor supports bargaining position on key revenue contracts	Below-average or weak position in the market environment
	Revenues collected by or on behalf of the entity exhibit growth in line with rate of inflation	Revenues collected by or on behalf of the entity exhibit growth generally below rate of inflation	Revenues collected by or on behalf of the entity exhibit flat or negative growth
	If applicable	If applicable	If applicable
	Subsidy regime, with a long, stable history and not politically sensitive, and other revenue sources are highly supportive	Subsidy regime, with long, stable history and not politically sensitive, and other revenue sources are supportive	Subsidy regime is often subject to changes /politically sensitive or is not well established; other revenue sources are not supportive
	Revenues sufficient to support operating margins that require periodic draws from investment funds (e.g. “endowments”) but at levels well below expected annual long-term investment returns	Revenues sufficient to support operating margins that require periodic draws from endowment funds at levels approximating expected long-term investment returns	Revenues sufficient to support operating margins that require draws from endowment funds at levels expected to exceed long-term investment returns

[a]For entities with fully contracted revenues, the assessment of the remaining demand characteristic factors is typically not applicable.
Source: Fitch Ratings

Evaluate Demand Risk

Volatility of Demand Evaluated

Fitch considers the degree of exposure to volatility of demand for goods and services, including whether demand is stabilized by contract, how demand may vary due to change in the economic environment and the extent to which the underlying economic environment supports growth in demand. Many entities will be exposed to demand risks, although there can be significant differences in the volatility of demand as well as elasticity. For example, local public utilities can experience demand shifts due to weather as well as changes in economic activity within the service area. Demand for critical care services in a hospital is less likely to be affected by changes in the economy, although the mix of reimbursement sources may shift to rely more heavily on government payment sources, and self-pay in times of economic distress and demand for elective procedures not reimbursed through insurance may diminish. Demand for higher education can be countercyclical and increase when there is less opportunity in the labor market.

Competitive Position Evaluated

For entities where marketplace competition may have a strong influence on revenue generation, an organization's position relative to its competitors is a major area of analytical focus. For example, demand for education and healthcare services, although broadly stable, may be affected by an entity's overall position in a competitive market. Colleges and universities operate in a tiered market, both nationally and regionally, in which prestige institutions have little to no risks of demand fluctuation and institutions at the lowest tier may need to rely on relaxed admission standards and price discounting to maintain a stable enrollment base. Healthcare providers may face competition in local markets across all or selective service lines.

In such cases, Fitch's analysis considers available information on market share trends, price competitiveness, industry reputation, geographic coverage or footprint, and product differentiation. Aspirations to achieve higher industry standing or ranking; support service area economic development; or significantly change in market share concentration are evaluated in conjunction with the practical realities of the organization's current competencies and ability to secure additional resources to support such initiatives.

Regulatory and Contractual Mechanisms Considered

Some entities have fully contracted revenue streams that provide cash flow conditioned only on their meeting a contractual standard for availability for use or readiness for dispatch. Because entities with fully contracted revenues, such as energy or water facilities with take or pay agreements, are less exposed to demand risk, analysis of other risks becomes more important when assigning a rating. These include risks relating to performance against contract terms (availability, throughput and efficiency), cost risk and counterparty risks associated with the off-takers. Fitch also considers whether mechanisms for determining revenues are clear and objective, reducing potential for dispute. There are also mixed models, variations that require further assessment of volume or price risk, such as energy utilities with partially contracted and partially merchant-based revenues. These combine usage or dispatch risk.

Evaluation of Pricing Characteristics

Legal and Contractual Frameworks for Price-Setting

Monopoly and quasi-monopoly providers of essential public services generally operate under a legal or contractual framework establishing the basis upon which prices are set and revenues are generated. As examples, utility providers operate under laws that vary in approach to rate setting. Some laws allow subject utilities to independently set charges; others establish regimes for cost recovery and returns on capital investments with caps. Public universities may face tuition constraints imposed by a regulatory body or by legislative action. Healthcare providers are generally subject to the reimbursement regimes imposed under contracts with insurers or mandated by publicly funded healthcare schemes. Fitch will evaluate the factors mitigating demand and price risks present in any such contractual or legal framework, taking into account the entity's competitive position. Some entities have a monopoly on the provision of essential public services and face limited competition. Others may face competition from nearby competing facilities or entities, even though a local monopoly exists.

Regulated Entities Usually Price Takers, but Protected

In many jurisdictions, essential services such as higher education, healthcare, social housing and transit are provided almost exclusively through not-for-profit entities or designated public authorities. Where a sector is organized along these lines, it is typically accompanied by a regulatory oversight and special solvency administration regime. Rates and charges and compensation for services are established as part of that regime, and are generally outside the control of the service provider. Although providers in such systems are effectively price takers, Fitch considers the history and trend of revenue growth and margin stability when evaluating revenue defensibility for entities in such sectors.

A supportive integrated system is considered a midrange pricing attribute where its features foster solvency while managing cost growth through regulatory oversight. Where such a regulatory framework maintains compensation for services at levels that may challenge the solvency of not-for-profit or public authority providers of an essential public service, requiring other resources such as gifts, grants or extraordinary supports for balance, Fitch will consider this a weaker pricing attribute but consider the extent and dependability of such other resources in the overall assessment.

Other Revenue Sources

An entity may have revenues derived from sources distinct from its operations. These may include dedicated taxes collected by or on behalf of the entity to support debt service, operations, or both. Tax revenues will be evaluated for volatility in the same manner as revenues derived from demand-sensitive usage fees. An entity may benefit from subsidy payments from a sponsor government that are intended to support capital development or operations, and buttress affordability of the entity's services or output. A qualitative assessment of the predictability of subsidy is made where this is a material portion of revenue. A subsidy that requires periodic appropriation by a legislative body is inherently more susceptible to a change in budget cycles than dedicated taxes assessed by or on behalf of an entity, and, therefore, its characteristics are considered at best midrange.

Endowment Distributions

Certain not-for-profit enterprises may be unable to produce positive operating margins based on patronage (admissions and memberships) alone and look to investment earnings from endowment funds to sustain operating solvency. In these instances, the relative rate of draws against earnings will be evaluated, with drawings at levels that potentially diminish the corpus of the fund considered a weaker attribute, absent demonstrated and expected fund-raising capacity that will maintain the fund at levels consistent with a midrange or stronger profile.

Other Considerations

Assessment Applied to Gross Revenues

An entity's gross revenues may be subject to deduction in the form of a levy, royalty payment or securitization claim ahead of all other costs and expenses. This should be reflected in the cash flow analysis through the use of net revenues and can result in higher sensitivity to change in the operating environment. See the *Financial Profile* section.

Dependability of Framework

When gross revenues are determined under a contractual or regulatory framework, Fitch will consider the relative dependability of any legal and regulatory incentives necessary to sustain the revenues. See the *Macro Risks section — Country Ceiling and Dependability of Legal Regime*.

Dividends to Government-Owned Strategic Investment Holding Companies

Government-owned strategic investment holding companies typically derive gross revenues from upstream dividend payments from held entities. For these holding companies, geographic diversification, asset concentration and the diversity of business models of held entities, along with the track record and volatility of upstream dividend payments, will be evaluated. Greater diversity in enterprise models, more robust histories of timely payments and less volatile streams will be considered stronger attributes.

Use of Sector Criteria Revenue Defensibility Characteristics

An entity may have revenue characteristics closely aligned with entities covered under separate sector criteria and other operating characteristics that place it outside the scope of those sector criteria. For example, certain healthcare-related entities do not provide sufficiently broad services to be rated as an acute care hospital or life plan community, but share revenue risk characteristics substantially similar to those set out in respective sector criteria — risks related to payor mix, market position and service area characteristics. In these cases, the use of the sector-specific attribute assessments is more appropriately referenced rather than the more general characteristics set out in the master criteria.

Projections in Demand and Price Considered in Sensitivities

When evaluating entities fully or partially exposed to price and/or demand risk, Fitch will consider historical information and entity forecasts, including those supported by third-party reviews, and Fitch internal forecasts and assumptions.

In addition, demand and price projections furnished by the entity's management will be reviewed. As part of this analysis, Fitch will request and review any reports or studies conducted by a third-party expert on behalf of the entity or lenders. Such studies, together with historical price and volume trends, market and macroeconomic forecasts, and peer analysis, where available and appropriate, are used to assess the likelihood of price and demand/usage combining to achieve expected revenues and to form views on potential volatility and stresses.

Fitch may also use internal forecasts and assumptions (e.g. oil and gas price forecasts, and macroeconomic assumptions) where available and relevant.

Demand and price risk factors identified as drivers of gross revenue are stressed as part of the financial analysis (see *Financial Profile* section). Like for like, Fitch would expect entities exposed to price or demand risk to have the financial capacity to survive higher sensitivities than those shielded from such risks by contract.

Operating Risk

Operating risk is the risk that the entity will suffer a reduction in availability, productivity or output, or, alternatively, incur operating, maintenance or life-cycle costs that are higher than projected. Any of these may result in a reduction in projected cash flows or reduce the entity's financial flexibility, as evidenced in pressure on operating margins and, potentially, impairment of the ability of the entity to service its debt. Fitch considers risks related to general operating costs, risks associated with the supply of important inputs and risks associated with capital maintenance to form an overall assessment of operating risks. These risks are reviewed to assess the likelihood of the events occurring and the consequences if they do.

Attribute Guidance Table — Operating Risk

	Stronger	Midrange	Weaker
Operating Costs	Fully passed-through costs[a]		
	Full pass through of costs to entities with strong financial capacity	Full pass through of costs to entities with midrange financial strength	Full pass through of costs to entities with weaker financial strength
	OR direct exposure to cost volatility		
	Well-identified cost drivers and low potential volatility in major items	Well-identified cost drivers with moderate potential volatility	High sensitivity of cash flows to the timing of costs
	Flexibility in timing for major costs (life-cycle)/limited near-term capex expected/ not capex-intensive	Material capex in the near term/reasonable but limited flexibility on timing for major costs (life-cycle)	Material capex expected in near term with little flexibility on timing for major costs
	Strong ability to vary cost with demand shifts	Ability to vary marginal cost with fluctuation in demand/usage	Operating and maintenance cost volatility highly uncertain with potential to be significant (labor/energy/technology)
	Operating and maintenance cost increases fully recoverable through regular revenue adjustments (tariffs/charges) with transparent methodology	Inflationary operating and maintenance cost increase substantially recoverable in regular revenue adjustments (tariff/charges adjustment) with transparent methodology	Severely limited ability to pass through cost growth
	Stronger	**Midrange**	**Weaker**
Resource Management	Fully passed-through supply price and volume risk[a]		
	Full pass through of supply price and volume risks on long-term contract to a financially strong counterparty	Full pass through of supply price and volume risks to an entity with midrange financial strength	Full pass through of supply risks to an entity with weaker financial strength
	OR direct exposure to supply price and volume risks		
	No supply constraints for labor or resources (amount, cost and timing)	Adequate supply of resources and labor with limited volatility (amount, cost and timing)	Potential for supply or labor resource constraints (amount, cost and timing)
	Excellent transportation/utility infrastructure	Good transportation/utility infrastructure	Poor transportation/utility infrastructure
	Connecting infrastructure in place — alternatives exist	Connecting infrastructure in place — limited alternatives	Weakness in connecting infrastructure
	Commoditized nature of key supplies from many sources	Significant concentration of sources for key supplies	Monopolistic source of supply
	Sufficient, independently verified reserves	Moderate reserves with potential risk of reduction	Reliance on development of reserves
	Supply cost increases fully recovered through regular revenue adjustments (tariffs/charges) with transparent methodology	Supply cost increases substantially recoverable, with timing lags, through regular revenue adjustments (tariffs/ charges) using transparent methodology	Limited or no ability to recover supply cost increases or lack of transparent methodology for addressing supply cost increases

[a]For entities with fully passed-through costs/supply price and volume risks, the assessment of the other factors on cost/price and volume risks are typically not applicable and may be disregarded.
Source: Fitch Ratings

Evaluation of Operating and Life-Cycle Cost Risk

Fitch reviews the makeup, timing and potential volatility of operating costs. Operating costs vary by entity and sector, but usually include some or all of the following: commodities and utilities, labor, taxes, insurance, maintenance, and capital expenditure or life-cycle costs. Operations may have a high component of variable costs passed through to revenues, thus reducing operating leverage, which is seen as positive. The exposure of the entity to unanticipated operating costs is reviewed and considered in the context of the cash flow analysis.

Cost mitigation through risk transfer to strong subcontractors or supplier inflation-based contracts, cost-plus contracts and the like are considered in the rating to the extent the financial strength of the counterparty is commensurate with the rating of the debt. See *Financial Profile* section.

In addition, when available, Fitch will review third-party reports, including engineering reports, prepared for management in the development of the capital improvement and maintenance plans for its operation, plant and equipment. Fitch will review operating plans and third-party reviews of such plans as are available, and consider the operating history and operating cost profiles of relevant peers when forming assumptions for the financial analysis.

Technical risk affecting operating cost may be present in some sectors and centers on maintenance and performance within projected cost. This risk varies significantly by sector and is entity specific. In some sectors, technology risk arises in the development and implementation of information technology that is required to efficiently provide, charge and collect for services, or acquire technologically advanced equipment required to provide the essential service. Healthcare providers' investments in information technology and complex equipment and systems used in diagnostic or clinical care are an example.

Alternatively, technological risks may be present in complex systems and components used to produce or deliver an output such as water or power. When the technical process is conventional and proven, the risk is not as great or it is easier to quantify based on past experience. Even technologies with proven reliability depend on maintenance and renewal standards being met. Entities that have qualified staff, adequate budgets, readily available parts and consumables, and, where relevant, manufacturer support would be assessed as stronger for this attribute. Alternative sources for goods and services are seen as positive in mitigating cost and volatility.

The assessment of operating cost risk, relative stability or volatility, and the ability to recover costs within the revenue framework will be considered in the context of the cash flow analysis. See *Financial Profile* section.

Evaluation of Resource Management Risk

Entities may require resources, including special skilled labor, or products, such as important commodities or specialty equipment, to deliver services or product. Fitch evaluates the risk of limited availability or higher costs associated with such resources or products and the potential impact on an entity's financial flexibility.

Where resource risk is high, and markets are characterized by illiquidity, Fitch may assume a higher than historical rate of expense growth for a key resource. The entity's revenue framework can act as a mitigant of cost volatility associated with key inputs. Where the revenue framework provides flexibility to recover input costs, the ability to do so can be limited if the input cost increases could make the entity's output uneconomical and result in reduced usage or demand. See the *Revenue Defensibility* section. Resource cost and availability risks can also be addressed by fixing key resource costs through a contract. Labor contracts can be a source of stability or volatility depending on the environment. A qualitative assessment of any pressure on labor costs in the context of labor contract renewal will be considered in the analysis.

For a utility, fixing the costs of key commodity inputs (e.g. electricity, water, gas, coal or oil) through contracted supply to fix the volume and/or price at which the resource or product is supplied is an effective risk mitigant to cost volatility only to the extent of the counterparty's credit quality. See *Counterparty Risk* section.

Suppliers' credit quality, whether or not supplies are contracted for the long-term, is considered where there is a dependency on the supplier. If there is no dependency, contractor credit quality is not a constraint on a rating. An entity will not be considered dependent on a supplier where backup is available. However, where back up supply is important, there is also an analytical question regarding price risk that may exist if a backup supplier were used. This can be evaluated through stresses considering price volatility as well as break-even analysis evaluating resilience under historically high price levels. See the *Financial Profile* section. Where relevant, Fitch also examines the availability of reliable alternative supply routes.

Evaluation of Capital Planning and Management

Capacity Constraints and Cost Recovery

Fitch's review of capital planning and management focuses on current capacity constraints and limitations, the assumptions that underlie projections and the capital budgeting process. In addition, funding sources, which may include a combination of debt proceeds, cash on hand, gift proceeds, governmental appropriation and other sources, are reviewed to determine reasonableness of assumptions in the Fitch base and/or stress/rating-case scenario. See *Financial Profile* section.

Fitch assesses the feasibility of significant investment in physical plant capacity by reviewing the borrower's master facilities plan (MFP) or capital improvement plan (CIP). Dynamic plans address facility needs over multiple time spans and specify funding sources, and are viewed more credibly in the rating process. In general, modular MFPs provide an organization the flexibility to modify its planned capital investment should business or market conditions prove unfavorable.

Fitch will evaluate the extent to which the costs of infrastructure renewal can be recovered from revenues on a pay-go basis, or with periodic automatic adjustments of revenues as is the case in certain regulatory frameworks. In many cases, infrastructure renewal will be initially financed through borrowing. The additional debt in itself is not a credit-negative aspect in the infrastructure renewal analysis. The impact of expected additional debt to fund infrastructure renewals can be captured in the rating through the evaluation of the projected financial profile, including the uncertainty of future debt terms to finance the investment.

Evaluating Capital Plan Execution Risks

Entities may use a comprehensive engineering, procurement and construction (EPC) contract as a reasonable way of mitigating delay, plant performance and cost overrun risks. However, it is common for an entity to take on the role of general construction manager for improvement projects. Operators of large existing systems tend to use turnkey, fixed-price EPC contracts less frequently, preferring to manage timing, completion and cost risks themselves. In these cases, Fitch will review the capital improvement and construction planning with management to assess the risk that cost overruns and delays may pose to the financial profile of the entity. The entity's ability to continue to earn revenue and absorb costs over budget, including from delayed completion, will be a focal point.

Fitch will consider management's track record with such construction projects and its capacity to manage these risks, and any resulting costs within the entity's existing financial profile. The presence of a facility management team with a history of delivering capital projects on schedule and within budget is a substantial mitigating factor to contractor exposures and is considered a stronger attribute, as is a well-phased capital program that can be modified to reflect changes in need or demand.

Capital Planning and Management

Neutral to Operating Risk Assessment	• Adequate or strong mechanisms for capital planning and funding. • Demonstrated history of generally effective management. • Debt maturity significantly within expected economic life. • Established but current technology. • Capex benefits from documented engineering assessment and aligns to plan in a reasonable way.
Negative to Operating Risk Assessment	• Weak planning mechanisms, history of deferred maintenance/cost overruns. • Complex or new technology judged to be a higher risk for cost escalation during the development, design and construction process. • Economic life nearly coterminous with debt maturity. • Emerging competing technology, e.g. lower cost or substitute.

Source: Fitch Ratings

Financial Profile

Fitch Scenario Analysis

Having assessed the entity's revenue and operating profile, these features are combined with a more quantitative approach to determine the entity's financial and operating flexibility through a range of stresses intended to assess its capacity to repay its debt and other liabilities, including pension obligations. This analysis will connect the relative strength of an entity's business model with the entity's leverage profile and liquidity profile. The creditworthiness of both operational and financial counterparties, in the context of their obligations, is also incorporated into the rating or SCP assessment. Peer analysis will be used wherever appropriate and if ratings/SCPs for a relevant group of peers with similar operating and revenue defensibility profiles can be compiled.

Fitch will evaluate a cash flow scenario that serves as the agency's expected case in the current macroeconomic environment. This case serves as the Fitch base-case scenario (the base case), and starting point of sensitivity analysis. The Fitch stress-case scenario (the rating case) will incorporate a combination of revenue, cost or financial risk stresses as described below. These stresses are formed, typically by reference to historical events, peer analysis and Fitch's expectations for the future. These may incorporate a particular scenario of events to which the entity is particularly vulnerable, such as loss of a key counterparty, supply risk, or currency, interest rate or refinance risk.

The Fitch stress/rating-case scenario assesses the entity's financial performance on a forward-looking and through-the-cycle framework, rather than at any single point in time. The evolution of the profile, its low point and average through the cycle are considered. Fitch's stress/rating-case scenario will reveal levels and shifts in key operating, leverage and liquidity metrics, contrasted to the base-case scenario, that are considered to be consistent with the rating level through that stress and in the following recovery. As an additional sensitivity, analysts may also use the cash flows to test a break-even scenario that determines the maximum-level stress that can be applied to a variable without a default on a rated instrument.

The choice of the cash flow scenario used in the stress/rating-case scenario is a key quantitative and qualitative determinant of the rating and is typically a central point of discussion in rating committees. For a credit that is rated solely using the master criteria, Fitch will determine appropriate base case and stress/rating-case scenarios, as well as sensitivities, on a basis that seeks consistency and comparability with entities having similar revenue defensibility and operating risk profiles in other sectors or jurisdictions. Once established, base and stress case scenarios will be updated as necessary to preserve the forward-looking nature of Fitch's analysis, and to reflect warranted changes in assumptions that are material to an entity's performance and rating. Changes triggered by both revisions to future expectations, as well as actual performance that is inconsistent with expectations, will be considered.

Establishing the Fitch Base Case Scenario

The development of the Fitch base-case scenario (the base case) begins with Fitch's evaluation of an entity's recent historical performance based on a review of its audited financial statements and any unaudited financial information (typically interim statements) covering a period of at least three years. Both historical and management's projected financial results are considered. Fitch will consider as an indicator of future financial performance the recent track record of the entity, its management team and its market.

Fitch will consider entity-generated scenarios in its analytical process when presented. However, the base-case scenario incorporates Fitch's expected evolution of an entity's revenues, costs and planned capital expenditures consistent with the agency's expectations (including its macroeconomic assumptions). The agency's analytical assumptions specific to the operating performance of the entity will be incorporated. Certain key revenue or cost risks may be hedged, either contractually or through natural positions, which will be incorporated in the base-case scenario. Fitch considers the effectiveness of such arrangements and any remaining risk from imperfect hedges (basis risk) or residual unhedged positions may be the subject of sensitivity analysis incorporated into the stress/rating-case scenario.

When the entity's forecast suggests future performance is expected to track differently than historical results due to a significant capital expansion, a new acquisition or development of a new or existing service, Fitch will evaluate entity-provided information supporting its assumptions. Forecasts that rely on aggressive volume growth, market share capture, rate increases or expense reductions are unlikely to be reflected in the base-case scenario. Fitch may request sensitivity analysis from the provider stressing major forecast assumptions to gauge risk associated with the business plan and reflect such risks in the Fitch base case or stress/rating-case scenario.

Establishing the Fitch Stress Case Scenario (the Rating Case)

The Fitch stress case scenario (the rating case), will be developed through the application of stress to important variables in the base-case scenario. Revenue, cost and financial risk stresses to be incorporated in the stress/rating-case scenario are described more fully under the *Revenue and Cost Stress* and *Financial Risk Stresses* sections.

The magnitude of stresses applied will be informed by assessment of volatility reflected in key risk factor qualitative assessments, historical data, third-party expert reports and sector criteria, where applicable. The Fitch stress/rating-case scenario will indicate the effect of an immediate stress followed by the expected recovery over the span of the scenario. Fitch does not rate to the low point, but the evolution of the financial profile that can be reasonably anticipated, which will often include a recovery in the economic environment.

Additional Sensitivity to Evaluate Potential Structural Change

Fitch may consider additional sensitivity analysis beyond the base case and stress/rating-case scenarios when necessary to evaluate potential structural changes, if any, which may affect the entity. These additional sensitivities can be used to evaluate whether such a structural change would result in a shift in financial profile of such magnitude that it signals an elevated risk of transition in its financial profile compared to entities with similar profiles, which should be reflected in the rating. For example, a sensitivity may, where relevant as a material risk, stress changes in demand from key customers where there is concentration characterized as midrange or weaker in the assessment of revenue defensibility. Where the underlying demand for a given entity's outputs or services has changed in a durable manner, reflecting secular trends expected to permanently shift the performance up or down compared to previous expectations, this will be incorporated into the Fitch base case and stress/rating-case scenarios.

Fitch Base Case Scenario Indicating Lower Speculative Grade

For an entity with a Fitch base-case scenario indicating a 'Weaker' financial profile and suggested analytical outcome of 'B' or below (see *Rating Positioning Table*), the base-case scenario analysis alone may be sufficient to evaluate the risk of default and transition for the debt. By definition, the rating suggests that such an entity will have little capacity to navigate adverse economic conditions. Given the limited number of defaults in the public finance sector, metrics are less useful for scaling ratings from 'B' to 'C'. A qualitative assessment will be made of the level of default risk and the extent of any remaining margin of safety indicated by the entity's overall operating and financial risk profile. In this respect, the *Lower Speculative Grade* section and rating definitions associated with rating categories from 'B' to 'C' provide guidance. See Issuer Default Ratings definitions. Moreover, the existence of a covenant breach should be considered in positioning the ratings for such credits. See *Treatment of Covenants; Consequence of Breach of Covenant* section.

Revenue and Cost Stress

Where an entity has demand risk mitigated by contracted revenue sources, such as a fully contracted energy facility, the Fitch stress/rating-case scenario will focus on stresses to production efficiency and operating and capital costs, if any, that are not recoverable from the contracted revenues.

For entities that are exposed to demand risk, the Fitch stress/rating-case scenario will reflect Fitch's through-the-cycle approach to ratings and evaluate the demand and consequent revenue stress that an entity may be expected to experience in an economic downturn of reasonable depth and duration in the relevant country. Where sector criteria incorporate a revenue or demand sensitivity tool or model, the cash flow analysis will incorporate demand and consequent revenue shifts derived from that tool or model. Where no tool or model exists, the analyst may use historical data looking at peak to trough changes in revenues or demand in one or more cycles affecting the entity. For example, royalty payments linked to commodity prices or production may be evaluated generally for linkages to changes in GDP, in a manner similar to evaluation of tax revenue volatility. Where an entity has meaningful reliance on tax revenues to supplement operating performance, volatility of that revenue stream will be considered consistently with approaches under "U.S. Public Finance Tax-Supported Rating Criteria" or "International Local and Regional Governments Rating Criteria."

Where endowment earnings are an important revenue source, historical performance and Fitch's view of long-term expected investment returns will be typically be reflected in the Fitch base-case scenario. For U.S. entities rated under the "Public-Sector, Revenue-Supported Entities Rating Criteria," the assumptions applied to consider the returns on pension fund portfolios or investment portfolios as incorporated into the Portfolio Analysis Model (PAM) can be used for investment portfolios of not-for-profit enterprises. For more information, please refer to *Appendix C* of this report. Outside the U.S., an entity's historical returns and the trend of those returns will be considered in developing the stress/rating case.

Operating stresses will be incorporated into the analysis consistent with the assessment of those risk factors as described under the *Operating Risk* section.

Financial Risk Stresses

Financial risk stresses are considered in a similar manner to revenue and cost stresses; some may only apply to individual rated debt instruments. Common financial stresses such as inflation, interest rates and foreign exchange rates may be hedged or partially hedged. Stresses on interest rates and on currency will be country specific and reflect historical patterns of volatility.

Interest rate stresses on variable interest-rate debt, for example, in the cash flow analysis will be based on historical patterns in the relevant debt market. The stress will be applied in the direction adversely affecting cash flows for the rated instrument. Due consideration will be given to the effects of a possible corresponding rise in inflation. For entities whose cash flows are related to inflation, the resulting stress may be expressed in a hike in real interest rates rather than nominal rates.

For refinance risks, Fitch will evaluate the impact of higher costs of capital at the time of refinance, depending on the time to the refinance date, the history of the entity's market access and the pattern associated with similarly situated entities. The stresses will reflect a shift in the level of interest rate curves upward in the relevant market and will range between 200 and 400 basis points with the level of stress increasing the more distant the refinance date. The range may vary in markets with higher levels of volatility in interest rates.

Metrics

The results of the cash flow scenarios are typically summarized in various metrics, often in ratios and are used in combination. The metrics are intended to provide measures of an entity's leverage profile and liquidity profile on a forward-looking and through-the-cycle basis. Metrics are used selectively as appropriate to the sector or transaction structure. Metrics associated with a given rating category can vary widely between entities within a sector, depending on the assessment of the entity's overall risk profile and the potential volatility of its cash flows.

A rating includes both qualitative and quantitative analysis. Stronger or weaker financial metrics will be viewed in the context of the qualitative analysis of key risk factors and additional risk assessments described in the master criteria. Any sector-specific criteria will include ranges typical for the relevant sector.

Metrics that are commonly used are defined in *Appendix A*.

Leverage Profile Assessment

The leverage profile assessment evaluates expected future financial leverage of the entity considering both through-the-cycle elements and forward-looking expectations rather than a point-in-time assessment. The evolution of the profile, its low point and its average through the cycle are considered. As public finance entities may not have paid-in share capital, the measure of financial leverage considers the amount of debt as it relates to the generation of cash flow or unrestricted cash and investments. Some entities will have large cash balances and investment portfolios that represent accumulated and undistributed earnings over time. For public-sector entities, there are generally restrictions on distributions of excess earnings, and such funds can be used only for the entity's purposes, to subsidize future operations or to fund capital development. To the extent there are such restrictions, the cash balances will be netted against the entity's gross debt in considering its leverage profile to calculate net debt.

The key metric considered in evaluating leverage will be debt plus other liabilities net of cash available for debt service to cash flow available for the payment of debt service (net adjusted debt-to-CFADS/EBITDA). Sector-specific criteria may include alternative or additional measures of financial leverage. For example, alternatives may include the ratio of cash to debt and other liabilities in not-for-profit sectors where negative leverage is a common characteristic, or gross revenues to debt where a statutory framework provides a gross lien on revenues of an entity that is not subject to bankruptcy or other insolvency proceedings while rated debt is outstanding.

Unfunded Pension Liabilities

Fitch reviews defined benefit pension funding as part of its analysis of debt and long-term liabilities, which includes assessing the current status (open, closed or frozen), funded level, discount rate and projected contributions over the near term. Fitch calculates an adjusted debt figure, including the unfunded pension liability when evaluating the leverage profile of an entity.

Fitch recognizes that pension liabilities (compared with bonded debt) are contingent liabilities that can be significantly influenced by a variety of actuarial, accounting, investment and other assumptions. The assumptions used in calculating the unfunded gap will be derived from accounting statements provided by the entity. In the U.S., the Fitch assumptions, including investment return assumptions, used in calculating the unfunded gap for GASB reporting entities will be sourced from the "U.S. Public Finance Tax-Supported Rating Criteria" for governmental pensions, and in accordance with FASB reporting practices as noted in sector-specific criteria for FASB reporting entities.

Operating Leases

Payments made under operating leases are currently considered operating expenses. However, Fitch believes that certain operating leases that are long term in nature function more like capital leases or debt and, therefore, will be analyzed and included in adjusted debt-load metrics (See *Appendix A*). Fitch will apply this same treatment to long-term take-or-pay purchase contracts for key inputs, such as long-term power contracts for a retail power utility or long-term water supply contracts for retail water systems.

Value of Derivatives

Mark-to-market values under derivatives or contracts requiring collateral are not generally added to debt to measure leverage, as the values are subject to more frequent fluctuations. Related risks are considered as asymmetric risk factors (see *Derivatives and Contingent Obligations*), Fitch's scenario analysis and financial profile assessment will also incorporate the effects of derivative contracts on cash flow and liabilities where relevant.

Liquidity Profile Assessment

The liquidity profile assessment evaluates the resources available to an entity that drive its capacity to absorb changes in its net revenues resulting from declining demand or increased costs. Fitch does not scale an entity's liquidity profile, but treats this as an asymmetric factor. Where liquidity is considered weaker, the entity's financial profile assessment and rating/SCP may be lower than suggested by the *Rating Positioning Table*, typically by up to one category, to reflect a relatively higher-than-average vulnerability to liquidity stress than peers with a similar business risk and leverage profile. The rating/SCP may also be notched lower within the category where liquidity is weaker but does not warrant a lower financial profile assessment.

Sources of Liquidity

The first liquidity resource available to most entities is periodic excess margin above operating costs before and after debt service that acts as a cushion to changing circumstance. Other sources are available cash and investments in reserves and committed liquidity lines from financial institutions. Available cash means cash balances available to service debt obligations, typically dedicated reserves for debt service plus unrestricted cash and investments. Some entities may also have coverage accounts used to provide liquidity and stabilize rates during brief periods of volatility that provide liquidity cushion.

Liquidity Lines Available for Working Capital

The available limit under a bank line is considered as working capital if the facility would continue to be drawable if the entity were rated a full category below its existing rating and if provided by an investment-grade financial institution or lower-rated financial institution if the rating is equivalent to the entity rating. Where necessary information is not available, liquidity will be assessed without explicit credit to working capital lines.

Sector criteria may use one or more combination metrics to assess liquidity and measure the liquidity profile. Where no sector criteria apply directly, the financial cushion as described in the appendix A will be used to assess an entity's liquidity profile.

Liquidity Profile Assessment

Neutral to Assessment: Liquidity cushion[a] is greater than 0.33x
Weaker: Liquidity cushion is below 0.33x

[a]Refer to appendix for calculation details
Source: Fitch Ratings

Other Liquidity Considerations

In sectors where revenue defensibility or operating risk profiles are generally assessed as weaker, Fitch may determine that the necessary liquidity cushion for a neutral assessment should be higher. This is a qualitative assessment taking into account revenue and cost volatility assessments and the results of scenario analysis.

Rating Guidance: Applying Analytical Judgment to Align Key Risk Factors, Financial Profile and Ratings

The results of the Fitch stress/rating-case scenario will be used to analyze the impact of change on key liquidity and leverage metrics. Together, these create a financial profile on a forward-looking and through-the-cycle basis that is aligned to the assessment of key rating factors to obtain an indicative rating level. The *Rating Positioning Table* below provides guidance to the analytical outcome, aligning the assessment of the entity's overall risk profile (through revenue and operating risk assessments) with its financial profile (leverage). However, the evaluation and importance of the key rating factors is specific to the individual credit being considered. There is no standard formula that mechanistically links these assessments to a final rating.

The *Rating Positioning Table* is the starting point in assessing the final rating (IDR) or SCP. For example, rating/SCP may be higher or lower than suggested by the table based on an analytical judgment made concerning whether there are factors present that suggest a higher or lower risk of transition in the entity's financial profile than would be suggested by the rating derived from the table.

Such factors may be entity-specific or could be common to an entire sector in a particular country and could include, for example, state-established liquidity support mechanisms, an unusually narrow or broad franchise, an unusually narrow or large (multi-jurisdictional) geographic footprint, an entity's capital expenditure profile and its position within the capital life cycle or the giving of greater weighting to revenue stability where an entity has little to no competition and complete discretion over pricing. The existence of a covenant breach may also affect the final rating assigned. See *Treatment of Covenants; Consequence of Breach of Covenant* section.

Furthermore, the positioning table reflects an entity's indicative financial profile assessment assuming a neutral liquidity profile, and its suggested analytical outcome is predicated on an entity's having no other asymmetric risk factors following an assessment of such factors as discussed below. Finally, the table below may be applied where no sector criteria are relevant, or related-sector criteria will provide a more specific rating positioning matrix.

Rating Positioning Table

Revenue Defensibility Assessment[a]	Operating Risk Assessment[a]	Leverage (x) (Net Adjusted Debt to CFADS/EBITDA)				
Stronger	Stronger/Midrange	<8	8–12	12–15	15–18	>18
Midrange	Stronger	<4	4–8	8–12	12–15	>15
Midrange	Midrange	<0	< 4	4–6	6–12	>12
Midrange	Weaker	<0	<2	2–4	4–6	>6
Weaker	Midrange	—	<0	0–2	2–4	>4
Weaker	Weaker	—	<–3	< 0	0–2	>2
Suggested Financial Profile Assessment		Stronger	Stronger	Midrange	Weaker	Weaker
Suggested Analytical Outcome		AA	A	BBB	BB	B

[a]Correspondence to sector criteria attributes: Stronger (aa and a); Midrange (bbb); Weaker (bb and b).
Source: Fitch Ratings

'AAA' has not been incorporated in the positioning table in this master criteria as revenue bond entities generally have franchises of limited purpose and a fixed geographical footprint that is not fully offset by a strong, even monopolistic, market position. A 'AAA' assessment is possible for those entities that have exceptionally low leverage and high liquidity supported by a strong revenue profile or exceptionally strong government support in the form of guarantees from an equivalently rated entity or direct access to statutory tax revenues beyond what is associated with typical tariff-setting regimes.

An entity assessed as weaker on both revenue defensibility and operating risk can be rated investment grade only if it has negligible leverage. Entities with these characteristics and any positive leverage or weaker liquidity profile are likely to be rated in a speculative-grade category. See *Other Matters - Lower Speculative Grade* section.

For entities with financial obligations but immaterial funded debt, or for entities with no net debt, leverage metrics may be less of a consideration in a rating. In these cases, an entity's revenue defensibility or operating risk assessment may be more relevant in determining the final rating outcome and could result in a lower rating/SCP than suggested by the positioning table.

Entities with a more varied combination of risk attributes will be considered on a continuum when considering ratings. Entities with weak liquidity profiles may be constrained to low investment grade despite other strengths.

Other Considerations

Counterparty Focus

Leverage profile may be less of a consideration in a rating where the entity benefits from a contractual framework in which revenues and costs are largely balanced through pass through to one or more counterparties. In such cases, protections afforded in the contractual framework to mitigate the loss of one or more counterparties will be more relevant to the final rating outcome. Where an entity is exposed to a single counterparty or the loss of the weakest among a group of counterparties, the rating will generally be no higher than the rating of the weakest counterparty unless there are mitigating structural features that allow absorption of that loss without materially altering an entities financial profile. See *Counterparty Risk* section.

Volatility in Financial Profile

Higher than normal volatility in the leverage profile of an entity historically or in a through the cycle scenario may suggest a rating lower than that indicated by the *Rating Positioning Table*.

Peer Analysis

Peer analysis is a tool in the process of establishing the notch-specific positioning for the rating/SCP in context of the analytical outcome suggested by *Rating Positioning Table*. Where information on appropriate peer entities for which a rating has been assigned is available to Fitch (usually for the same sector, region, and structure), this will be used for comparative analysis of individual risk factors (both qualitative and quantitative) or in establishing the rating, with respect to the peer group.

Where sector criteria are not established for a region or the specific sector, a rating under these master criteria will consider entities in sectors and locations having similar revenue and operating risk profiles and affected in similar manner by any asymmetric risk considerations. Appropriate metrics will be determined on a basis that seeks consistency and comparability with entities in sectors having similar revenue defensibility and operating risk profiles. For example, a university outside the U.S. is evaluated under the master criteria and the analysis closely follows relevant elements of the approach adopted in criteria for U.S. higher education and the criteria for rating public-sector entities. A hospital outside the U.S. is evaluated under the master criteria and the analysis closely follows relevant elements of the approach adopted in rating U.S. healthcare providers and the criteria for rating public-sector entities.

Peer analysis is likely to play a more important role in sectors where the portfolio of ratings is more developed. Fitch may use normalizing assumptions (such as a common annuity-based amortization schedule) to better compare a rated entity with peers.

Asymmetric Risk Considerations

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, while more credit-positive features are expected to be the rule, and would have a neutral impact on the rating. These risk factors include debt structure and contingent liabilities, management and governance, legal and regulatory matters, information quality, country risk and the dependability of the legal regime. The presence of asymmetric risks would support a conclusion that the rating and financial profile assessment suggested by the rating position table have a higher risk of transition than similarly rated entities that are not exposed to such risks. As a result, the presence of these risks could result in a rating/SCP that is lower than the outcome suggested by the positioning table and, in some cases, could be low speculative grade.

Debt Structure and Contingent Liabilities

Under debt structure, Fitch considers all of the entity's liabilities, including bank debt and each rated debt instrument separately, taking into account the debt characteristics, structural features, security rights, and any external support. Fitch rates public-sector revenue debt in accordance with its terms and conditions with credit given to structural elements that provide financial flexibility.

Ratings Distinctions Between Specific Securities

As ratings under the criteria are default ratings and do not account for recovery, as a general rule, Fitch does not distinguish ratings on senior and subordinate debt of an entity. As an exception, default ratings of individual tranches of debt securities may be distinguished where there is a basis in the finance documentation and legal framework to support a conclusion that a default on a junior tranche of debt will not result in a payment interruption on other senior tranches even in the context of bankruptcy proceedings. In the United States, for example, provisions of applicable municipal debt law together with Chapter 9 of the U.S. bankruptcy code may support distinctions in default ratings on tranches of debt of an issuer. Factors to consider when notching may apply include:

- Whether there is a meaningful difference in the probability of payment default between the senior and subordinate tranches as indicated by substantially different financial profile (leverage and liquidity at the lien level); differences that are not material indicate notching is not appropriate.
- Whether there is a timing difference in payment terms or amortization of the subordinate tranche that preserves protection for the senior tranche; where senior protection can erode due to amortization of subordinate tranches under the structure, notching is not appropriate.
- Whether the senior tranche is a closed lien or, if it is an open lien, whether there are expectations for issuance at the senior level that would dilute existing differences in coverage compared to the subordinate tranches; an open lien suggests limited notching.
- Whether there is a cross default or cross acceleration mechanism or a legal framework that automatically results in a cessation of payments on all tranches following commencement of insolvency proceedings; such provisions or framework would preclude distinct default ratings on tranches of securities.

Where notching is applied it is typically one notch above the IDR but may be as high as three where protection for the senior lien is exceptionally strong; notching of intermediate tranches is unlikely as the materiality of differences in leverage and cash flow protection becomes less meaningful both between tranches and from the IDR.

Debt Characteristics and Terms

The characteristics of an entity's debt including maturity, amount, and currency, are generally sourced from loan agreement or bond documentation, including offering documentation. In some instances, a term sheet, prospectus, or representations from entities may be relied on. The obligation to pay interest, including rate basis, margin, payment dates, grace periods, and whether interest may be deferred and the obligation to pay principal according to an amortization schedule, are established together with the priority of these payments. This analysis is undertaken for each debt level for an entity, including debt instruments rated by Fitch. The risks of accelerated principal payment following a default or certain identified trigger events are considered when forming a view on an entity's risk of insolvency and the impact, if any, on the default risk of any rated debt.

Fitch will analyze currency, interest rate or refinance risk where it affects a substantial part of the entity's capital profile, using stress assumptions for costs and liquidity derived from historical patterns in the relevant debt market. Fitch will note whether debt instruments include financial or other covenants that can lead to an accelerated repayment and the entity's relative capacity to manage that risk. See *Financial Profile* section.

Entities exposed to material refinance risk (debt not fully amortized at maturity) are typically viewed as structurally weaker from a credit perspective as they are exposed to more uncertainty for both market access and the cost of debt at a future date. Entities exposed to floating rate interest may mitigate that exposure in full or in part through interest rate hedges. Fitch considers whether the unhedged portion of exposure, if any, or any refinance exposures would have a material impact to the entity's financial profile under stressed interest rate assumptions. Currency exposures are considered in a similar manner.

Derivatives and Contingent Obligations

Fitch will evaluate the debt structure to identify liabilities from other sources, including derivatives and working capital lines identified in the audited and unaudited financial statements provided by an entity. Swaps are most commonly used to hedge interest costs but also to mitigate foreign exchange, inflation, or other risks. Where the notional amount to be hedged is variable or a direct hedge is not available, mismatching of basis, maturity, or notional may leave open or over-hedged positions. In cases where those risks are unhedged and are present in a material degree, Fitch will evaluate interest rate or foreign-exchange stress to evaluate the impact that a significant change could have on the capacity of the entity to meet debt service with higher costs or lower revenues.

Liquidity lines typically provide protection against interruptions in operational cash flows. Entity level working capital and reserve facilities are typically independent of short-term performance and drawable with minimal conditionality. These may be evaluated as drawn facilities when considering overall leverage where advances are expected to occur in stress scenarios.

The entity may be required to post collateral under supply or off-take contracts to cover replacement revenues to the counterparty if the facility experiences outages. The source of collateral posting or replacement letters of credit will be evaluated to determine the entity's ability to perform this obligation under the relevant contract. See *Financial Profile* section.

Hedging policies could efficiently reduce exposure to rate risks, but will be assessed within the analysis of counterparty risks. See *Counterparty Risk* section.

Debt Structure and Contingent Liabilities

Neutral to Rating	• Fully amortizing debt with immaterial levels of capital appreciation or zero-coupon debt; no bullet maturities. • Some use of bullets with substantially fully amortizing debt in the financing structure; stress scenario cash flows show no or limited balance at nominal bullet maturity; large issuer with established market access and active management of several bullet maturities. • Fixed interest rate or floating-rate amounts with limited potential financial impact or fully hedged with counterparty at or above the entity's rating. • Interest deferral on junior debt prevents liquidity defaults. • No cross-default or acceleration. • No FX exposure or fully hedged FX exposure with a counterparty rated at or above the entity's rating. • Capital appreciation or zero-coupon debt in limited amounts.
Negative to Rating	• Highly sculpted and substantial use of deferred amortization instruments, which materially distort near-term financial metrics. • Substantial use of bullets and dependence on refinance analysis, unproven market access or concentrated maturities in the short to medium term. • Material exposure to unhedged floating-rate exposure. • Material exposure to unhedged FX risk. • Material contingent liabilities as measured by mark to market of derivative liability or under supply contracts requiring collateral posting by the issuer.

Source: Fitch Ratings

Management and Governance

The quality of governance and management is an important consideration when assessing the potential performance of an entity over the life of the debt. Fitch considers this attribute to be asymmetric. Weak governance and management may cause the rating to be lower, all other things being equal. In contrast, the presence of adequate governance and management will be assumed when evaluating the impact of stress/rating scenarios and the ability of an entity to manage through those stresses.

The effectiveness of governance and management is an important factor in assessing an organization's creditworthiness, as management's decisions and initiatives — subject to the oversight and strategic direction of the governing body (such as a board of trustees or city council) — can ultimately determine an entity's long-term financial viability. Fitch generally focuses its commentary on management and governance practices where their effectiveness materially influences the rating decision.

Governance

With a level of analysis tailored to the structural characteristics of the sector, Fitch reviews the effectiveness of the governing body in establishing and implementing the organization's policies and principles. Fitch's assessment may involve developing an understanding of the governing body's mission and strategy, structure, composition, interaction with and oversight of management, knowledge of industry issues and performance standards.

Management

Fitch also examines the track record of senior administration in implementing the governing body's policies and providing day-to-day management. Fitch's analysis is qualitative in nature and when evaluating the agency's stress/rating-case scenarios will consider management's history of meeting the goals defined in a strategic plan and adjustments historically made when encountering a changing operating environment. Fitch considers management's explanation of significant deviations from its planned, expected or budgeted results and its formulation of contingency plans.

Management effectiveness may also be judged through a review of planning processes. Leadership teams that possess a strong understanding of their markets and capabilities, effectively articulate goals and objectives and are organized to operate consistent with industry best practices.

Attributes: Management and Governance

Neutral to Rating	• Management and governing body with extensive experience in the sector. • Generally stable management team and board of directors with modest turnover. • An objective, engaged governing body that does not exert political pressure. • Transparency and strong communication between management and governing body. • In the case of affiliated entities or group member, coordinated efforts among members and the governing body. • Well-developed and documented policies and procedures. • Resource management plans, forecasts of demand and management policies that generally reflect current economic, system and political conditions.
Negative to Rating	• Lack of experience and depth at the entity. • Significant political pressure in the underlying municipality or in the members' service areas that can impair its financial profile. • Repeated failure to adopt budgets on a timely basis due to absence of consensus in governing body or resistance of key stakeholders. • Failure to maintain open communications between the entity and any relevant governing body, which may reveal itself in unexpected operating changes. • Weak or lack of forecasts and resource management plans. • Limited or lack of policies and procedures. • Inability to adequately protect cyber and other infrastructure from attack. • Official allegations of corruption involving financial reporting law or regulation.

Source: Fitch Ratings

Legal and Regulatory

Forming an opinion of the quality of the legal or contractual framework upon which many assumptions rest is a prerequisite to the credit analysis. For instance, the framework may be purely contractual or rely on statute or codified law, or a particular statutory instrument, or the powers of a constitutional or statutory authority. Fitch forms a view on the clarity of the legislation and/or regulation, the scope of regulatory discretion, and any effect this may have on facility performance or dispute resolution. The financing documentation (and if appropriate, any legislation it may depend on) or detailed summary documents (such as offering materials) are reviewed for key commercial elements and contract clarity, especially regarding allocation or transfer of risk.

In sectors where external regulation is prevalent and has a bearing on creditworthiness, an organization's proactive response to regulatory developments and effective participation in the regulatory and legislative processes is noted. Fitch combines a review of the current and expected regulatory climate with an assessment of the organization's ability to maintain stable operations in the face of regulatory change. Fitch may review responses to prior regulatory mandates, identifying financial and operational effects. Fitch also examines the potential for future regulatory initiatives and assesses whether the organization, through its systems, practices and resources, will have the ability to manage potential downside risk.

Other matters, such as collateral rights, or statutory ownership restrictions, will be reviewed case by case. Fitch will rely in its credit analysis on legal opinions or legal memorandums to the extent that they are provided by transaction counsel, legal precedent that the agency is aware of, and/or statements by regulators or governments.

Fitch also considers the country of operation (often the location of capital assets) and the country of incorporation of the entity, and other key parties, together with the reliability and creditor orientation of their legal systems. See the *Macro Risks* section.

Legal and Regulatory

Neutral to Rating	Strong precedent for contractual frameworks/regulatory/statutory framework and its operation and effect. All customary key documents and legal opinions accessible for review where relevant.
Negative to Rating	Contractual, regulatory or statutory framework is dependent on untested legislation or regulation; weak or no legal opinions; contracts not available for inspection; or less effective participation in regulatory process with negative regulatory outcomes.

Source: Fitch Ratings

Information Quality

The quality of information received by Fitch, both quantitative and qualitative, can be a constraining factor for ratings. Information quality may constrain the rating category to a maximum level or in extreme cases preclude the assignment of a rating. Information quality for the initial rating and for surveillance purposes is considered when a rating is first assigned. Fitch must be confident that adequate ongoing data will be available to monitor and maintain a rating once assigned. Information quality encompasses such factors as timeliness and frequency, reliability, level of detail, and scope.

The information provided to Fitch may contain reports, forecasts, or opinions provided to the entity or their agents by various experts. These include legal advisors, third-party engineers, traffic, market, fuel/resource or environmental consultants, insurance advisors, and others. Sector criteria will describe the reports, forecasts, or opinions that are most relevant to risk analysis in the related sector. Where these reports contain matters of fact, Fitch will consider the source and reliability. Where the information is a forecast or opinion, Fitch expects these to be based on well-reasoned analysis supported by the facts.

The status of the expert and the materiality of their forecast or opinion will also be considered in determining what weight may be given their forecasts or opinions. Factors such as experience in the jurisdiction or location, experience with the technology or transaction type, and formal qualification or licensing are often relevant. When forming its rating opinion, Fitch may place less weight on expert reports that lack clarity or contain extensive caveats or were conducted under less relevant circumstances. Such features may lead to adjustments in Fitch's financial or operational analysis. The agency expects experts to conduct their reports to professional standards. If possible, reports are compared with similar reports to highlight unusual or optimistic features.

The degree to which Fitch uses expert information will depend partly upon the above issues and on the relevance of the information to the identified key risks. Where available, if expert information does not address a material issue, but might be expected to, Fitch may request further information or make an appropriate assumption. Where Fitch determines that the reports are not sufficiently supported, complete or reliable, it may choose not to provide a rating.

Information Quality

Neutral to Rating	Data from actual operation; regular updates; independently validated; forecast supported by significance or error range statistic; no history of material data errors; detailed cash flows — receipts and disbursements; audited financial data; significant amount of public information available.
Negative to Rating	Substantially based on assumptions; extrapolated; subject to material caveats; data often subject to delay; history of revisions or errors; limited scope.

Source: Fitch Ratings

Macro Risks

Country Ceiling

Country risk analysis starts with Fitch's sovereign rating and Country Ceiling for the host country, reflecting the default risk on sovereign obligations and the transfer and convertibility risk, respectively. If Fitch does not rate the country, the sovereign analysts perform an assessment of the credit quality of the sovereign. These ratings typically impose an upper limit on the ratings of a revenue-supported entity but they do not capture all country risk. External support or financial structuring may mitigate transfer and convertibility risk for individual debt instruments (see Debt Structure). Fitch does not rate for a change in law, regulation, or tax. Nevertheless, the rating analysis will consider some of the qualitative factors and historical information about how material these risks can be.

Dependability of Legal Regime

In addition to the sovereign rating and Country Ceiling, Fitch reviews the political and regulatory environment in which the entity is operating. A stable and predictable environment is evidenced by the government's commitment, public support, and a consistent application of law and regulation.

Political risk is the risk of changes to laws, regulations or concession contracts governing the operation of the entity during the term of the debt. It may take the form of unilateral contract variation, specific regulatory actions, exceptional taxes or royalties, forced changes in ownership or control, or outright expropriation. Such political interferences are considered 'Event Risk' or 'Extreme Scenario' and because they cannot be predicted and quantified, they cannot be included in the Fitch stress/rating-case scenario. This risk is therefore not reflected in the rating.

However, the risk that a regulator modifies some terms of the economic equation of an entity within its normal powers and duties to determine such parameters (e.g. energy tariffs, user charges, other compensatory mechanisms for services), is reviewed and captured in the analysis through other key rating factors, notably the Revenue Defensibility (in particular through its price element).

A country's general economic condition may not be directly reflected in its sovereign rating or in state/provincial ratings, particularly where there is low debt and strong cash flows from exploitation of natural resources, although there is usually a similar trend. Infrastructure may be weak, skilled labor in short supply, utilities unreliable, and so on, all of which may affect the entity and hence the debt ratings.

Country Ceiling and Legal Regime

Neutral to Rating	Country Ceiling above the entity's intrinsic rating; creditor-friendly and reliable legal system; history of impartiality and respect for contracts; long-term stable economy; supportive regulatory regime; project of national importance or essential for public good or services.
Negative to Rating	Speculative grade; jurisdiction potentially unreliable or not supportive of creditor rights[a]; interventionist tendencies; political or economic instability; endemic delays for permits; public opposition; history of fines or disputes.

[a]May include reference to Fitch emerging markets reports or external sources, e.g. the World Bank.
Source: Fitch Ratings

Other Matters

Treatment of Covenants; Consequence of Breach of Covenant

How the Presence of Covenants Affects Ratings

The financing documents may give rise to a right of investors to accelerate the debt of the entity triggered by conditions that are not related to the entity's financial and operating performance. For example, finance documents may include a cross-default to the insolvency of another entity or a change of control in the entity, or varied changes of law. Fitch generally assumes that investors will act rationally when considering whether to accelerate debt when such covenants are breached. Fitch assumes that rational investors would not choose to accelerate debt when the entity's financial profile is not otherwise impaired. Therefore, where the provision is at the discretion of investors, and/or requires a majority of investors to act and is not related to the credit quality of the entity, the existence of such a covenant will not itself adversely affects the rating.

Financing documents executed by an entity in connection with a particular debt may also include more stringent financial performance requirements than those included in bond or other financing documentation. Fitch assumes such covenants will be enforced in a manner that pressures the entity to refinance the affected debt. Fitch considers the relative stringency of the financial performance measures in the context of the entity's financial profile, whether these pertain to an amount of debt material to the entity that would need to be refinanced and whether a breach of those covenants would trigger default and acceleration of other debt of the entity. Where the debt is material or where it would create cross acceleration of an amount of debt material to an entity, Fitch will consider these features as negative to the rating similar to bullet debt and concentrated maturities in the short to medium term.

Consequence of Covenant Breach

Actual and anticipated covenant breaches of which Fitch is aware will trigger a rating review. Use of a negative outlook or rating watch may be appropriate to allow evaluation of the situation as the breach evolves.

The historical record in public finance would indicate that acceleration and foreclosure do not generally follow from a covenant breach. Lender remedies such as acceleration and attempted foreclosure will trigger bankruptcy and likely higher loss. As there is no investor upside in acquiring an equity stake in the public finance sector, an initial covenant breach followed by acceleration is not a typically expected or commonly observed strategy or sequence.

A covenant violation does not mandate any particular rating category. Credit fundamentals continue to be the most important guide for ratings following a covenant breach as these provide better guidance on whether there is a heightened level of default risk, including the likelihood of restructuring. Rating action will require assessment of the whole record at the time, including the specifics of any relevant creditor response.

Event Risks

Where relevant to the sector and material to the rating, Fitch explicitly considers the potential event risks that may adversely affect the entity's ability to repay the debt. Event risks arising from natural hazards — floods, earthquakes, hurricanes, tornadoes — as well as human error or mechanical malfunctions — industrial accident, explosions, forced outage — are identified and the management of the relevant risks evaluated.

Comprehensive insurance, including business interruption insurance, is a typical tool used by entities. Insurance for many of these risks is commonly available, subject to some repricing risk and the rating considers that the entity will be able to meet a covenant to have in place required insurance coverage consistent with market standards from qualified insurance providers.

In some instances, events will be determined to be "uninsurable," meaning insurance of the related risk is unavailable, unavailable in sufficient amounts, or completely uneconomic. Terrorism in most jurisdictions is one such risk. An earthquake in some jurisdictions is another risk. Where an entity is exposed to uninsurable risks, a second level of analysis is required to determine whether mitigation is required for the rating and, if so, whether there is an alternative to insurance that mitigates the risk of default to a degree commensurate with the rating of the entity.

Whether mitigation is required depends on a qualitative assessment of the entity's vulnerability to the identified risk. Similarly, the application of revolutionary technology or the long-term effects of global warming are not predictable and are not captured by the ratings until they become predictable or have materialized.

Where it is determined that a credit has vulnerability to event risk, mitigating factors other than insurance will be evaluated. Some entities have multiple assets and analysis may consider a single event unlikely to affect all assets to such an extent that it would hurt timely payment of debt. Also, the revenue framework may be unaffected by the risk or provide a means to recover costs and fund rehabilitation of assets following an event. In many cases, the nature of the entity's assets is such that the entity's operations might be impaired, but it could continue to operate at a substantial level and recover costs of rebuilding through the applicable tariff mechanisms.

The debt will not be affected so long as there is sufficient liquidity to get through the immediate impact of the event. In these cases where operating characteristics and revenue frameworks provide mitigation of risk, self-insurance may be a common option for an entity.

In some cases, risk mitigation will not be sufficient and the rating may be capped below an investment-grade threshold depending on vulnerability to the uninsured risk.

Entity Structures

This part of the analysis considers the degree to which factors other than the economic success of the activity might affect the cash flows available for debt service.

Varied Legal Forms

Legal forms of public-sector revenue bond entities vary widely. U.S. public-sector entities often include direct issuance by a sponsoring local government of special revenue bonds having special legal status under relevant insolvency law. Some not-for-profit entities issue through frameworks that obligate a group of affiliated entities to support an entity's debt. Not-for-profit entities may operate as trust vehicles in some jurisdictions or as corporate entities established to support not for profit activity. The criteria assume that the assets and operation of the issuer in the context of its specific framework can be evaluated effectively as an independent operating entity.

Relationship to Host Government

For certain public finance credits that are an enterprise or component unit of a general government, the rating of the revenue-backed security may be tied to or influenced by the credit quality of the general government. In addition to sharing common management and service area characteristics, there are situations where significant legal, financial or operational connections may exist between the two (for example where credit agreements cross-default or if one fund is drawing upon the cash of the other). In these cases the revenue-supported rating may be closely tied to the host government's IDR. For entities outside the U.S., analysis under the "Government-Related Entities Rating Criteria" would be used to assess the approach to reflecting this linkage in the entity's rating. For public sector entities in the U.S., relevant bankruptcy law may allow for rating debt of the entity distinct from the host government IDR. However, activities of the host government that affect the financial operations and capital structure of the related entity will be reflected in key rating factor assessments and may ultimately result in a rating lower than suggested by the *Rating Positioning Table*. Fitch details any direct relationship between the general government's credit quality and related revenue-supported securities within the appropriate rating action commentary.

Counterparty Risk

As a general principle, where the financial resources or cash flows of the entity are dependent on the financial performance of a counterparty to whom warranty, completion, revenue, cost, supply, liquidity, interest rate, or other risks has been transferred, this is given credit to the extent the counterparty has a rating commensurate or superior to the rating of the issued debt. Unless otherwise enhanced, a counterparty upon whom the entity has a dependency may constrain the rating/SCP of the entity.

The rating of any counterparty where financial performance is key to entity performance is based upon a Fitch rating assigned by the relevant analytical group. Rating dependencies (where any change in counterparty rating may affect the rating) will be highlighted and any rating linkage (where the transaction rating will move with the counterparty rating) will be made explicit. Where no rating published by Fitch is available, an internal private rating can be used. Where the counterparty's financial performance is considered in the analysis but the counterparty does not dominate the rating of the transaction, an internal credit opinion can be used. Fitch determines whether there are structural features present that mitigate deteriorating counterparty risk, such as rating triggers or financial ratio tests.

Lower Speculative Grade

Movement to a 'B' category rating will be considered where material default risk exists but a limited margin of safety remains. For the positioning within the 'B' category a consideration must be given to available liquidity resources when considering whether material default risk exists and a margin of safety remains following the breach of a maximum annual debt service coverage test, for example.

A movement to 'CCC' would be indicated if the analytical judgment/conclusion is that cash flow and liquidity margins are gone and a favorable adjustment of the business or financial profile is unlikely. Movement to a 'CC' rating indicates that a default appears probable, and is likely to be signaled by de facto insolvency or the commencement of a negotiated restructuring effort. Where a default-like process has begun, an issuer has entered a standstill agreement, or a default is an inevitable or imminent consequence following the breach of a covenant, then a 'C' rating is likely to follow.

Model Usage

For U.S. entities rated under the "Public-Sector, Revenue-Supported Entities Rating Criteria," the assumptions applied to consider the returns on investment portfolios, as incorporated into PAM can be used for investment portfolios of not-for-profit enterprises. For more information, please refer to *Appendix C* of this report.

Data Sources

Fitch's analysis and rating decisions are based on relevant information available. The sources are the entity, the arranger, financial advisory consultants, third-party engineers or consultants, and the public domain. This includes publicly available information on the entity, such as audited and unaudited (e.g. interim) 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.

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 entity-by-entity basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

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

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

Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in Fitch's Ratings Definitions, available at https://www.fitchratings.com/site/definitions.

Disclosure

Fitch expects to disclose, as part of its rating action commentaries or new issue reports, Fitch base-case scenario and Fitch stress/rating-case scenario assumptions, and the rationale for adjustments to either the Fitch base-case scenario or Fitch stress/rating-case scenario assumptions. In addition, Fitch will disclose any variation to criteria. In many cases, Fitch uses the assumptions that it derived in its initial analysis in its surveillance review. In order to focus Fitch's rating action commentaries on the most important changes to the rating, Fitch will not disclose these assumptions in subsequent rating action commentaries unless there is any change to the assumption.

Rating Assumption Sensitivity

Revenue Defensibility: Ratings will be sensitive to changes in attributes of revenue defensibility that affect overall assessment. Changes in volatility demand, price elasticity or counterparty quality can change the final assessment.

Operating Risk: Ratings will be sensitive to changes in operating risk attributes reflecting shifts in spending levels, growth rates or timing.

Financial Profile: Ratings will be sensitive to changes in leverage profile or liquidity profile that result in a different rating positioning in the analytical guidance table.

Distressed Debt Exchange

When an exchange or tender offer that Fitch considers to be distressed is announced, the Issuer Default Rating (IDR) will typically be downgraded to 'C' and, for bond issues, the instrument ratings will typically be downgraded to the 'C' – 'CCC' range. Completion of the distressed debt exchange (DDE) typically results in an IDR being downgraded to 'RD'. Affected instrument ratings will be changed according to their rating scale. Shortly after the DDE is completed, an IDR or instrument will be re-rated, usually still at a low speculative-grade level.

Appendix A: Key Definitions

Key Definitions

Term	Definition	Significance
EBITDA	Income from operations before interest expense, tax, depreciation and amortization, and other non-cash items	Provides indication of the cash flow from core operations, which is available for the payment of debt service.
CFADS	EBITDA + non-operating revenue available for debt service – non-operating expenditure prior to debt servicing	Provides indication of cash flow available for the payment of debt service, including cash flow beyond core operations, e.g. expenses prior to debt service (i.e. committed capital expenditure) or specific revenue designated to debt servicing. Usually applied where operating revenue is not a major source of debt servicing.
Debt	Bonds payable + loans payable + notes payable + capital/finance leases	Nominal value of long- and short-term debt obligations.
Adjusted debt	Debt + unfunded pension liability + capitalized operating leases	Provides an inclusive evaluation of all long- and short-term liabilities.
Net adjusted debt	Adjusted debt — unrestricted cash and investments	Provides an indication of net total leverage position.
Cash to adjusted debt	Unrestricted cash and investments/ adjusted debt	Indicates financial flexibility and cushion against operating volatility. Relevant in sectors where entities predominantly have negative net leverage due to large endowment fund balances.
Net adjusted debt to EBITDA or CFADS	Net adjusted debt/EBITDA or CFADS	Resulting value expressed as a multiple and may be positive or negative (where the entity holds more cash and investments than the amount of its outstanding debt).
MADS	Maximum annual debt service	Measure of maximum debt service due in a one-year period, excluding expected refinance of bullet or balloon debt.
Debt service coverage ratio (DSCR)	EBITDA/total amount of debt service due in that period (principal + interest)	Measure of cushion between debt service and EBITDA in any given period.
MADS coverage ratio	EBITDA or CFADS/MADS	Measure of how much EBITDA must grow to break-even with MADS at a future date. Where the implied growth rate materially exceeds the rate considered in scenarios; this may suggest higher leverage going forward, which should be considered when applying the rating positioning guidance.
Cash flow from operations (CFO)	Cash flow from operations post-interest, tax and change in working capital + recurring dividends received from associates - distributions of dividends to non-controlling interests + investing and financing cash flows deemed as operating – dividends paid to preferred shareholders	Cash flow available from core operations after all payments for ongoing operational requirements, cash received from associates, dividends paid to minority interests, interest paid, interest received, preference dividends and tax. CFO is also measured before reinvestment in the business through capital expenditure, before receipts from asset disposals, before any acquisitions or business divestment, and before the servicing of equity with dividends or the buyback or issuance of equity.
Change in working capital	Change in receivables + change in trade payables + change in trade inventory + any other changes in working capital	Fitch calculates the change in working capital through the annual swings in trade receivables, trade inventory, trade payables, accrued expenses and any other relevant working-capital item. It also includes analytical adjustments that affect working capital, such as factoring, where sold receivables are added back to trade receivables to reverse the effects of factoring on working capital.
Funds from operations (FFOs)	CFO – change in working capital	Fundamental measure of the firm's cash flow after meeting operating expenses, including taxes and interest. FFO is measured after cash payments for taxes, cash received from associates, interest and preferred dividends paid, and after dividends paid to minority interests, but before inflows or outflows related to working capital. Fitch's computation subtracts or adds back an amount to exclude non-core or non-operational cash inflow or outflow. FFO offers one measure of an issuer's operational cash-generating ability before reinvestment and before the volatility of working capital. When used in interest coverage and leverage ratios, net interest is added back to the numerator.
FFO to interest	FFO/cash interest paid	Used in lieu of DSCR where an entity has bullet maturity debt rather than fully amortizing debt and is expected to refinance from time to time. More common in markets outside the U.S.
Days cash on hand	Unrestricted cash and investments/(cash operating expenses/365)	Measures the number of days that an organization could continue to pay its average daily cash obligations from its current cash position.
Liquidity cushion	(EBITDA + unrestricted cash and investments – annual debt service + available lines of credit, not yet drawn)/ cash operating expenses prior to interest expense	Excess annual cash flow after debt service for the financial year plus the sum of readily available cash and committed liquidity lines at the beginning of the respective financial year / sum of cash annual operating expenses prior to interest expense.

Source: Fitch Ratings

Appendix B: Short-Term Ratings

Scope

This methodology describes the criteria applicable to derive short-term ratings for entities rated using the "Public Sector, Revenue-Supported Entities 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 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.

Rating Correspondence

Long-Term IDR	Baseline Short-Term IDR/Rating	Higher Short-Term IDR/Rating
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.
BB+ to B−	B	N.A.
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

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 of U.S. entities 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.

For US public finance issuers that are related to a municipality and not assigned an IDR, short-term ratings will be linked to the most appropriate long-term rating as determined by the rating committee. This will typically be the long-term rating applicable to the most junior tranche of debt.

For non-US public finance credits rated using a combination of Fitch's "Government-Related Entities Rating Criteria" and "Public Sector, Revenue-Supported Rating Criteria," when an issuer's long-term IDRs are equalized with a sponsor (government), the short-term IDRs shall also be equalized. When an issuer's rating is derived on a top-down notching basis, the higher of the two short-term rating options will apply, capped at the supporting government's short-term rating level. When an issuer's rating is derived on a standalone basis or supported on a bottom-up notching basis, the short-term rating option will be chosen on a standalone basis using the rationale outlined below.

Cash Flow Borrowings

For ratings on cash flow borrowings, including revenue anticipation notes (RANs) 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

For ratings on borrowings that rely on market access to long-term debt markets for repayment, including bond anticipation notes (BANs) and floating rate notes (FRNs), baseline short-term ratings will always be assigned, where a short-term rating is required.

Internal Liquidity Borrowings

Short-term debt subject to short-notice purchase requirements or periodic tender is rated based on an entity's internal liquidity. Remarketing agents are typically retained to resell tendered variable rate demand obligations (VRDOs), but are not required to advance their own funds if there are no buyers. Similarly, preselected commercial paper (CP) dealers are not obligated to purchase maturing notes. Therefore, obligors must ensure they have adequate liquidity to fund the repurchase of these obligations.

Revenue Defensibility Assessment Drives Minimum Coverage Threshold

For ratings based on internal liquidity, each long-term rating will typically be mapped to the baseline short-term option. To qualify for the higher short-term rating option, the entity must satisfy two components — a minimum level of key rating factor or factors, and a minimum coverage metric.

Different coverage thresholds are set depending on an issuer's Revenue Defensibility assessment, which considers its ability to generate cash flow based on its legal framework and fundamental economics. Neutral Liquidity Profile and Debt Profile assessments would be required to further ensure no other liquidity or capital structure related factors would undermine the higher short-term rating.

An entity would need to meet the minimum factor assessments and coverage ratios on all three elements in the below table, relative to the relevant Revenue Defensibility level, to receive the higher short-term rating.

Thresholds for Higher-Rated Short-Term Rating — Revenue-Supported

Higher Short-Term Rating	Minimum Revenue Defensibility Assessment[a]	Minimum Liquidity Coverage Ratio[b] (x)	Liquidity Profile Assessment	Debt Structure and Contingent Liabilities Assessment
A+/F1+	Stronger/aa	1.25	Neutral	Neutral
A+/F1+	Midrange/bbb	2.0	Neutral	Neutral
A/F1+	Stronger/aa	1.25	Neutral	Neutral
A/F1+	Midrange/bbb	2.0	Neutral	Neutral
A–/F1	Midrange/a	1.1	Neutral	Neutral
A–/F1	Midrange/bbb	1.75	Neutral	Neutral
BBB+/F1	Midrange/a	1.25	Neutral	Neutral
BBB+/F1	Midrange/bbb	2.0	Neutral	Neutral
BBB/F2	Midrange/bbb	1.1	Neutral	Neutral
BBB/F2	Weaker/bb	1.75	Neutral	Neutral

[a]'Stronger', 'Midrange' and 'Weaker' refer to assessments under this master criteria, while 'aa', 'a', 'bbb' and 'bb' refer to assessments under sector-specific criteria. [b]Liquidity Coverage 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

When issuers in sectors that have not yet been assigned key rating factor assessments are reviewed, a case-by-case review will take place, until factor assessments have been assigned at which point the expanded requirements shall apply.

Liquidity Coverage Ratio

In determining its Liquidity Coverage Ratio, Fitch calculates the maximum potential liquidity requirement as total outstanding VRDOs, 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 entity 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 cyclicality 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 VRDOs 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 VRDOs 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 VRDOs 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 VRDOs 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.

Rating Assumption Sensitivity

Short-term debt ratings are generally sensitive to changes in the obligor's long-term debt rating. The short-term rating is further sensitive to deterioration in available liquid resources to maximum potential requirement for those entities whose long-term ratings map to two possible short-term ratings.

Appendix C: Portfolio Analysis Model (PAM)

PAM Concept

Investment returns are inherently cyclical in nature and often tied to the broader economic backdrop. The purpose of PAM is to provide a broad order of magnitude guidance of how an issuer's reserves or liquidity position (i.e. cash and investment portfolio) might be affected in relation to the general macroeconomic/cyclical scenario specified. PAM is currently used only in evaluating U.S. entities.

An issuer's investment portfolio and investment policy can have a significant bearing on creditworthiness for certain public finance sectors given the importance of financial reserves to credit strength for these issuers. PAM is used to generate a moderate, uniformly derived (but issuer-specific) portfolio stress as a means of evaluating an entity's relative financial resiliency through an economic/market cycle. It is Fitch's view that changes to issuer investment portfolios within reasonably anticipated ranges should be accounted for in the rating. In a separate analysis, specific to the sector utilizing PAM, the portfolio stress flows through to a scenario or other analysis that puts the estimated change in portfolio value in context with issuer fundamentals or other factors in order to provide a comprehensive test of ratings resilience throughout the cycle.

PAM is not a forecasting tool but, rather, provides a plausible outcome for through-the-cycle analysis by generating a portfolio return estimate that is empirically based, objective and intuitive. Using each issuer's own specific asset allocation mix, we simulate how issuer portfolios might respond to the same negative market scenario.

Limitations

This exercise is a sensitivity analysis designed to produce a rough approximation of the impact on the investment portfolio for the specific scenario chosen, with a qualitative overlay. The PAM output should not be construed as a forecast of future investment returns. The actual portfolio response to a chosen scenario would be expected to differ to some degree, possibly significantly, depending on how accurately the benchmark indices chosen to represent the various asset classes reflect actual portfolio holdings, whether future returns are consistent with historical asset class behavior and how accurately the current asset allocation assumption used in the analysis reflects actual asset class weightings over the course of the scenario, among others.

Methodology

The following methodology is used to gauge the percentage change in portfolio value for the given scenario assumption:

- Utilizing 1) each issuer's current allocation (typically including cash) categorized according to one of seven major asset classes, as well as 2) benchmark total return indices representing each asset category, a historical, hypothetical total return time series is created for each issuer/portfolio, assuming quarterly rebalancing back to current allocation weights. The following series are used to represent the various asset classes: cash and equivalents, U.S. three-month T-bill yield (Federal Reserve Bank of St. Louis); fixed income, Core U.S. Aggregate ETF (FactSet/IDC); domestic equities, Russell 1000 ETF (FactSet/IDC); foreign equities, MSCI EAFE ETF (FactSet/IDC); hedge funds, Fitch custom series based on global equity returns but with lower volatility characteristics (FactSet/IDC); real estate, Nareit All REIT index (National Association of REITs); other, general category calibrated to have equity-like volatility characteristics.
- For the ETFs, trade data are used to generate a price return to which an income element approximating history or current levels is incorporated to derive a total return series for each index. This total return hypothetical series is calculated based on index values going back either 10 years or about 20 years *(the default, the "Long" Return History Parameter" noted below)*. Asset allocation categories/indices may be updated and are subject to refinement/change; additional categories may be added. While history provides an objective guide with regard to portfolio return/volatility characteristics, future results may prove to be different. PAM permits the user to overlay a fixed increase or decrease adjustment to assumed long-term returns on a quarterly basis while preserving historical volatility characteristics. Any such return adjustments would be expected to be limited to be within +/- 0.5% (quarterly) of the baseline total return of the specific index.

- For most sectors, the mean (arithmetric and geometric, the default) and standard deviations are determined for each issuer's historical hypothetical return series on a rolling compound 4Q basis, using the quarterly time series. However, there may be applications where a longer window, as many as a rolling 12 quarters, is used to calculate these statistics and generate a stress estimate for the commensurately longer period. For example, PAM allows users to generate a stress estimate for a three-year period as opposed to the more typical one-year period.
- The assumed GDP level for each year of the stress is converted into a standard deviation movement, which, along with the mean and standard deviation derived from the hypothetical return series, is used to calculate the stress estimate for every year of the scenario. Representative GDP movements for a scenario stress for year one would be -1% to -2%, implying an approximate -2 standard deviation market event, and +0.0% to 1.0% for year two (an approximate -1 standard deviation event); for years three-five, and for all years of the base case, the average GDP year experience is likely to be used (+1.5% to +2.5%), though these assumptions can be changed depending on circumstances. For negative standard deviation movements, the stress is subject to a "Z Stress Adjustment" that normalizes the GDP series with the hypothetical series such that at an adjustment level of '1', (default, the maximum level), the stress in standard deviation terms cannot be more negative than the historical minimum z-value experienced by the hypothetical series when simulating the low GDP experience. This helps ensure that the scaling utilizing GDP as the topdown indicator does not result in an overly negative stress.
- A range (Low/High Spread) around the midpoint estimate is then determined by adding and subtracting to the midpoint estimate the product of the standard deviation and a constant term.

Assumptions

Key default assumptions used in scenario analyses are listed in the table below. Fitch reserves the right to change any of the below assumptions as conditions or circumstances warrant, including those related to the GDP growth assumption used for the base and stress case scenarios, depending on Fitch's perception of future growth prospects and where we are in the business/market cycle.

Benchmark Assumptions for PAM for Use in Scenario Analysis[a]

	Fitch's Base Case Scenario	Fitch's Stress Case Scenario
GDP growth[b]	Between 1.5% and 2.5% in all years	Between -1.0% and -2.0% in year one, 0.0% to +1.0% in year two, between +1.0% and +3.5% in years three to five
Max return limitation	None	Discretion to impose up to a -5% decline maximum return limitation for years one and two of the scenario
Return history parameter (short/long)	Long	
Scenario period parameter (1 to 12 quarters)	4 quarters	
Average type parameter (arithmetic/geometric)	Geometric	
Low/high spread parameter (0 to 2 standard deviations)	0.25 to 0.75 standard deviations	
Z stress adjustment (0 none to 1 full)	1 (full)	

[a]PAM may be used for other analyses, including those related to state revolving funds and pensions. In such cases, the first four assumptions noted above may be changed to suit the analysis. [b]Underlying data series may be adjusted as appropriate. For example, the stress estimates generated by PAM utilize an adjusted GDP series to eliminate the extreme quarterly swings in GDP during 2020, which would otherwise result in an inappropriate stress scenario in the context of the PAM methodology. To adjust for this effect, the 2Q20 GDP decline was truncated to be the equivalent to the worst quarterly decline over the past 20 years, preserving the general volatility relationship between asset returns and GDP experienced historically.
Source: Fitch Ratings

Appendix D: U.S. Community Development Financial Institutions

Fitch's key rating drivers (KRDs) for U.S. Community Development Financial Institutions (CDFIs) are assessed using the additional guidance included in this appendix while applying the methodological framework described in the *"Public Sector, Revenue-Supported Entities Rating Criteria"* (*Master Criteria*). Together, the *Master Criteria* and this appendix are used to assign Issuer Default Ratings (IDRs) that reflect an issuer's general obligation (GO) creditworthiness, as well as ratings on individual debt instruments (issue ratings), and they apply to both new ratings and surveillance.

CDFIs are certified by the U.S. Treasury Department -- as CDFIs -- upon meeting the following criteria:

- having a primary mission of promoting community development;
- providing both financial and educational services;
- serving and maintaining accountability to one or more defined target markets; and
- being a legal, non-governmental entity at the time of application (with the exception of tribal governmental entities).

CDFIs that fall within the scope of these *Master Criteria* are typically organizations classified as tax-exempt by the Internal Revenue Service under Section 501(c)(3) of the Internal Revenue Code (e.g. not-for-profit CDFI loan funds) but are not covered by sector-specific criteria. For-profit CDFIs, including community development banks, community development credit unions and CDFI venture funds, are not within the scope of the *Master Criteria*, and would, instead, be rated under Fitch Ratings' criteria for banks or non-bank financial institutions (NBFIs).

Key Rating Drivers

Fitch's three KRDs are 1) revenue defensibility, 2) operating risk and 3) financial profile. The three KRDs are assessed using the guidance outlined in this appendix, which defines general expectations for a given rating category. Subfactors under each of the KRDs highlight the components that are most critical in making the overall assessment.

Revenue Defensibility: Fitch assesses a CDFI's exposure to revenue disruption by evaluating the asset quality of its loan portfolio, including loan performance, portfolio composition, net chargeoff rates and the availability of reserves to offset loan losses. Additionally, Fitch assesses the CDFI's market position to identify the types of operational risks it could face, together with its ability to safeguard or defend existing revenues and sustain operations through an analysis of its competitive strengths, weaknesses, opportunities and threats.

Operating Risk: Fitch's analysis of operating risk includes an assessment of a CDFI's earnings and profitability. Fitch also assesses the CDFI's funding sources, including grant revenue and debt financing. Additionally, the assessment considers the CDFI's exposure to various types of risk and its risk management and controls, as they will ultimately lead to changes in a CDFI's key financial metrics.

Financial Profile: Fitch assesses the impact that unreserved, unexpected losses may have on a CDFI's GO resources and its overall financial health. The assessment considers the CDFI's capitalization, leverage and liquidity in the context of its overall risk profile. These financial ratios facilitate comparison of a CDFI's financial performance and position with those of its peers in the CDFI industry.

The assessment of each KRD described above is grounded in our forward-looking view of expected future performance, based on an analysis of historical and current performance metrics. Our forward-looking view incorporates our opinion of macroeconomic trends, issuer-specific qualitative factors, and the issuer's own forecast and debt issuance plans, among other factors.

For each KRD, we first determine an initial assessment and then consider whether to adjust that assessment based on analytical judgement, peer comparisons, or other factors, including elements that may not have been sufficiently captured in the initial assessment, an expected improvement or worsening of current conditions, or the presence of material risks. This possible use of adjustments reflects our view that an overly mechanical or rigid framework would not properly capture a holistic view of a CDFI's credit profile. We will disclose our assessments and the adjustments applied to them in our published research.

Rating Positioning

The correspondence of revenue defensibility, operating risk, financial profile and ratings is presented in the *Rating Positioning Table*. The table reflects the final revenue defensibility, operating risk, and financial profile assessments net of any positive or negative adjustments, and its suggested analytical outcome is predicated on an entity having no other asymmetric risk factors, following an assessment of such factors, as discussed below.

Fitch explicitly does not assign standard weightings to the assessments of individual key rating factors in coming to an overall rating conclusion. The relationship between individual and aggregate qualitative and quantitative factors varies between entities in the sector, as well as over time. As a general guideline, where one key rating factor is significantly weaker than others, this weakest element tends to carry a greater weight in the analysis. Further, the ratings are not formulaic or model-driven but require qualitative judgment to place metrics in an overall context for each issuer. Factors may be present that support a higher or lower rating than indicated by the table and the metrics.

Asymmetric Risk Factors: Risk factors such as management and governance, debt and market risk characteristics, and external support and regulatory mandate are also considered when assigning a rating. These risk factors are not scaled, and only weaker characteristics affect the rating assigned (i.e. they are asymmetric in nature).

Ratings Case, Stress Scenarios and Other Tools: Fitch evaluates the risks of rated entities on a "through-the-cycle" basis by applying a variety of scenarios seeking to ensure rating stability. Scenario analysis, stress testing and forecasts help to determine the amount of headroom in an issuer's credit ratings typically over an 18- to 24-month time frame, and inform the appropriateness of any potential change in the rating or outlook.

Fitch caps CDFI IDRs under these criteria at 'AA+', given the inherent sector risk and lack of direct support from a 'AAA'-rated entity.

Key Rating Drivers — U.S. Community Development Financial Institutions

Revenue Defensibility

	aa	a	bbb	bb
Asset Quality Fitch assesses a CDFI's exposure to revenue disruption primarily by evaluating the asset quality of its loan portfolio.	Very strong and stable historical portfolio performance, as reflected in low levels of delinquencies and minimal or no losses over multiple economic cycles.	High degree of stability and good historical portfolio performance, as reflected in modest levels of delinquencies and low losses.	Some degree of stability and satisfactory historical portfolio performance, as may be reflected in modest delinquency rates and losses. Asset quality measures are likely to fluctuate over economic cycles.	Above-average delinquency rates and meaningful losses indicative of weak historical portfolio performance. Asset quality measures are likely to be more volatile in the face of changing economic cycles.
	Non-performing loan (NPL) ratio: x ≤ 1%	NPL ratio: 1% < x ≤ 3%	NPL ratio: 3% < x ≤ 6%	NPL ratio: 6% < x ≤ 14%
	Net chargeoff (NCO) ratio: x ≤ 0.1%	NCO ratio: 0.1% < x ≤ 0.3%	NCO ratio: 0.3% < x ≤ 0.5%	NCO ratio: 0.5% < x ≤ 1.0%

	Positive	Negative
Possible Adjustments to Revenue Defensibility Assessment	Asset quality measures are substantially better than at comparable institutions and are not vulnerable to economic cycles.	Asset quality measures are consistently worse than broad industry averages or highly vulnerable to economic cycles.
	Very strong coverage of impaired loans by loss allowances/ reserves.	Weak reserve coverage.
	CDFI primarily operates in less volatile markets/segments, such as single-family and/or multifamily housing, and loan portfolio is characterized by: • high proportion of secured loans and/or loans carrying U.S. government insurance or guarantees; • low exposure to unenhanced predevelopment, construction, acquisition, bridge or stabilization loans; and/or • vast majority of loans are fixed rate, fully amortizing.	CDFI focuses on higher-risk markets or segments, such as microfinance, commercial real estate and/or consumer lending, and loan portfolio is characterized by: • low proportion of secured loans or loans carrying U.S. government insurance or guarantees; • high exposure to unenhanced predevelopment, construction, acquisition, bridge or stabilization loans; or • large portion of loans that are not fixed rate or fully amortizing.
	Underwriting standards are far more conservative than evident elsewhere in the industry. Credit standards are consistent with nominal changes over economic cycles.	Underwriting standards are more aggressive than broad industry averages. Standards are likely to change significantly over economic cycles.
	Concentration risks are low or effectively mitigated, with very strong diversification of credit exposures by individual borrowers, economic sectors or geographies. Very diverse and consistent business model.	Portfolio concentrations are high, with high concentrations by individual borrowers, economic sectors or geographies. Concentrated or changing business model.
	Long track record of successful community development lending, resulting in strong and enduring relationships with customers and partners. Strong reputation and name recognition in market(s) it serves.	Limited or no track record in community development lending. Dependence on transactional business rather than longstanding customer relationships. No name recognition and/or poor reputation.
	Leading position in multiple key segments or geographies. Solid, demonstrated competitive advantages likely to endure into the long term. No competitive pressure due to absence of alternative providers in region.	Weak position in key segments or geographies. Limited competitive advantages and/or operating history. Significant pressure from other CDFIs.
	Demand growth in the service area is expected to be strong due to expanding economic development needs in the region.	Demand growth in service area is expected to remain flat or to decline due to limited or no economic development needs in the region.
	Asset quality or performance is likely to improve, e.g. due to positive changes in strategy or business focus, or a more favorable part of economic or credit cycle.	Asset quality or performance is likely to weaken, e.g. due to negative changes in strategy or business focus, or a more unfavorable part of economic or credit cycle.

Source: Fitch Ratings

Key Rating Drivers — U.S. Community Development Financial Institutions

Operating Risk				
	aa	**a**	**bbb**	**bb**
Operating Profitability Fitch assesses the operating stability of a CDFI as reflected in its profitability margins.	Profitability measures are commensurate with very low risk.	Profitability measures are commensurate with low risk.	Profitability measures reflect inherent risk or a highly competitive environment.	Profitability measures may not fully reflect inherent risk.
	Net interest spread (NIS): x ≥ 70%	NIS: 55% ≤ x < 70%	NIS: 40% ≤ x < 55%	NIS: 20% ≤ x < 40%
Grant Funding Fitch assesses a CDFI's reliance on contributed income (e.g. gift and grant revenue), versus earned income.	CDFI relies primarily on earned revenue; has low dependence on gift or grant income, or there are solid future expectations for such income; and has a very strong track record of grant funding over multiple economic cycles.	Moderate dependence on gift/ grant revenues, which have been a stable and predictable source over a period of at least five years.	High reliance on gift/grant support, or volatile or short track record of grant/gift funding.	Very high dependence on gift/grant funding, and/or minimal expectations for consistent levels of gift/grant support through a full economic cycle.
	Earned income ratio (EIR): x ≥ 70%	EIR: 60% ≤ x < 70%	EIR: 50% ≤ x < 60%	EIR: 30% ≤ x < 50%

Possible Adjustments to Operating Risk Assessment	**Positive**	**Negative**
	Earnings and profitability are very stable over multiple economic cycles. Profitability measures are far superior to those of comparable institutions.	Earnings and profitability may be highly variable over economic cycles and are well below average relative to broad industry averages. Return on assets (ROA) has been consistently negative.
	Funding levels are highly stable. Very strong ability to finance and maintain operations, even during stress periods.	Funding levels are less stable and may be prone to sudden changes in creditor sentiment. Inability to finance and maintain operations.
	Funding sources and maturities are very diverse. Sources include predominantly government debt and unsecured debt. Funding duration exceeds average maturity of portfolio assets.	Near-term maturity concentrations are present. Funding is largely from secured debt. Funding duration may not be commensurate with average maturity of portfolio assets.
	Long track record of access to stable, long-term funding. Demonstrated access to capital markets across cycles.	Heavy reliance on short-term funding. No proven ability to access capital markets. High or rising cost of capital relative to peers.
	Risk and reporting tools are very robust. Risk limits are highly conservative and overwhelmingly adhered to. Risk limits are routinely monitored with minimal changes over lengthy periods. New strategies are heavily vetted and tested before rollout. Exposure to non-financial risks (e.g. operational, reputational, litigation, regulatory, cyber and event risks) is very low.	Risk and reporting tools may be deficient. Risk limits are simplistic and are not monitored frequently. New strategies may not be tested before rollout. Heightened exposure to non-financial risks (e.g. operational, reputational, litigation, regulatory, cyber and event risks) or other highly complex risks.
	Control environment is systemically adapted to meet higher business volumes, such that growth is unlikely to affect CDFI's overall ability to operate.	Control environment likely to lag higher business volumes, such that growth will potentially impair CDFI's ability to operate.
	Use of risk controls such as internal ratings, watchlists or other risk monitoring scales. Clear loan classification, impairment and reserve policies. Fully independent and consistent portfolio valuation process. Robust and effective liquidity stress testing framework.	Minimal or no risk control or monitoring tools. No loan classification, impairment or reserve policies, or they are not consistently followed. Absence of independent portfolio valuation process or evidence of inconsistent process. Limited or no liquidity stress testing framework.
	Evidence of clear policies pertaining to (i) industry, sector and/or borrower concentrations; (ii) asset class limits; (iii) non-loan exposures; and (iv) exposure to subordinate, construction or development loans. Maintenance of written, board-approved investment, variable-rate debt and hedging policies. Evidence of risk and financial management policies. High-quality, conservative investment portfolio. Very strong adherence to policies.	Lack of clear policies pertaining to portfolio exposure limits. Limited or lack of other policies and procedures. Low quality investments or large exposure to high-yield, risky investments. Policies oftentimes are not followed or enforced.
	Robust servicing and collection platform. Clear collection strategies for delinquent accounts and demonstrated ability to improve upon poor loan performance.	Weak servicing and collection platform. Absence of clear collection strategies. Limited or no track record in mitigating poor loan performance.
	Profitability metrics are likely to improve, e.g. due to positive changes in strategy or business focus, or a more favorable part of economic or credit cycle.	Profitability metrics are likely to weaken, e.g. due to negative changes in strategy or business focus, or a more unfavorable part of economic or credit cycle.

Source: Fitch Ratings

Key Rating Drivers — U.S. Community Development Financial Institutions

Financial Profile

	aa	a	bbb	bb
Leverage Debt to equity (DTE) is a key measure of an entity's leverage.	DTE ratio < 1.0x	1.0x ≤ DTE ratio < 3.0x	3.0x ≤ DTE ratio < 5.0x	5.0x ≤ DTE ratio < 8.0x

	Positive	Negative
Possible Adjustments to Financial Profile Assessment	Capitalization levels are very strong and commensurate with risk. Capital position provides very strong cushion to absorb unreserved, unexpected losses. Fitch's core capital ratio (CCR) ≥ 25%.	Capital levels are not fully commensurate with risk. Capital position provides limited cushion to absorb unreserved, unexpected losses. Fitch's CCR < 8%.
	Strong access to liquidity, with strong coverage of short-term liabilities by high-quality, unencumbered liquid assets. Stable liquidity levels. Diverse sources of liquidity, including from internal resources, commercial banks and/or central bank. Short-term liquidity (STL) ratio ≥ 10x.	Weak access to liquidity, or access to liquidity during periods of market stress is uncertain. Consistently high liquidity costs. Weak coverage of short-term liabilities by lesser quality investments, with some encumbrance of balance sheet assets. Liquidity levels are volatile and may be prone to sudden changes in market sentiment. Lack of diversity in liquidity sources. Heavy reliance on central bank. STL ratio < 1.25x.
	Financial profile metrics are likely to improve, e.g. due to positive changes in strategy or business focus, or a more favorable part of economic or credit cycle.	Financial profile metrics are likely to weaken, e.g. due to negative changes in strategy or business focus, or a more unfavorable part of economic or credit cycle.

Source: Fitch Ratings

Rating Positioning Table—U.S. Community Development Financial Institutions

Suggested Rating Category Outcomes

<table>
<tr><th rowspan="2">Revenue Defensibility Assessment</th><th rowspan="2">Operating Risk Assessment</th><th colspan="4">Financial Profile Assessment</th></tr>
<tr><th>aa</th><th>a</th><th>bbb</th><th>bb</th></tr>
<tr><td>aa</td><td>aa</td><td>AA</td><td>AA</td><td>A</td><td>A</td></tr>
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<tr><td>bb</td><td>bb</td><td>BBB</td><td>BBB</td><td>BB</td><td>BB</td></tr>
</table>

Source: Fitch Ratings

The *Ratings Positioning Table* shown above provides a starting point. In certain cases, ratings may be lower than, or require a higher financial bar to achieve, the outcomes suggested by the *Ratings Positioning Table* based on an entity's business profile characteristics. Entities with weaker revenue defensibility and/or operating risk assessments can generally achieve investment-grade ratings only with stronger financial profiles. In addition, Fitch may require a higher financial bar for a given rating where an entity's overall assessment of revenue defensibility or operating risk encompasses some weaker feature that increases the potential for volatility in a downside scenario. Finally, for entities with minimal funded debt, leverage metrics may be less of a consideration in a rating, with revenue defensibility or operating risk assessments weighted more heavily in the rating outcome.

The final positioning within the rating category will be further informed by a review of an institution's relative position among peers, including entities rated under related sector criteria where comparison of key factors would enhance the analysis.

Asymmetric Risk Factors — U.S. Community Development Financial Institutions

	Neutral to Rating	Negative to Rating
Management & Governance	Competent management team and governing body with extensive depth, experience and credibility in the sector. Limited or no key person risk. Generally stable management team and board of directors with low or modest turnover.	Weak senior management team, characterized by lack of depth or experience. Over-dependence on key individual(s). Frequent turnover among key management positions or board members.
	Strategic objectives are well articulated and reflect a long-term sustainable level of operational and financial performance. Strategic objectives remain consistent over time. Strategic plans generally reflect current economic conditions. Evidence of cohesive financial, operational and contingency plans. Balance sheet growth and business growth are well aligned with market opportunities and underwriting conditions.	Strategic objectives are not clearly articulated or reflect a short-term level of operational and financial performance. Strategic objectives frequently shift, including due to economic environment volatility. Weak or lack of strategic plans. Limited or no financial, operational or contingency plans. Balance sheet growth or business growth may meaningfully outpace market opportunities and underwriting conditions.
	Institution has consistent track record of meeting targeted operational and financial objectives with limited variability over economic cycles. Consistent track record of covenant compliance.	Institution often fails to meet target operational and financial objectives, or has a limited execution track record. Execution could be variable based on changes in economic cycles. Track record or expectation of covenant violations.
	Reasonably sound corporate governance. Effective board oversight and consensus. An objective, engaged governing body. Transparency and strong communication between management and governing body. Good quality and frequent financial reporting.	Governance gives rise to significant risks for creditors due to weak board oversight. Absence of consensus in governing body or resistance of key stakeholders. Failure to maintain open communications between the entity and governing body, which may be revealed in unexpected operating changes. Low-quality or delayed/ infrequent financial reporting or audit.
Debt & Market Risk Characteristics	Fully amortizing debt with immaterial levels of capital appreciation or zero-coupon debt; no bullet maturities. Interest deferral on junior debt prevents liquidity defaults. Market-standard priority of payments.	Highly sculpted and substantial use of deferred amortization instruments, which materially distort near-term financial metrics. Non-standard priority of payments that increases risk.
	Some use of bullets with substantially fully amortizing debt in the financing structure, or capital appreciation or zero-coupon debt in limited amounts. Stress scenario cash flows show no or limited balance at nominal bullet maturity; or large issuer with established market access and active management of several bullet maturities.	Substantial use of bullets and dependence on refinance analysis, unproven market access or concentrated maturities in the short to medium term.
	Limited amounts of variable-rate debt outstanding, or, if present, variable-rate debt is efficiently managed. Fixed interest rate or floating-rate obligations with limited potential financial impact, or fully hedged with counterparty at or above the entity's rating.	Material exposure to unhedged floating-rate exposure. Large percentage of variable-rate debt outstanding, without strong liquidity buffers or other mitigating factors. Heightened counterparty risk.
	No cross-default or acceleration. Low or effectively managed exposure to existing and expected contingent liabilities (e.g. direct purchase debt, letters of credit, liquidity facilities, lines of credit, etc.). Limited or no market value risk.	Material contingent liabilities as measured by mark-to-market of derivative liability requiring collateral posting by the issuer or substantial termination payment. At risk of triggering financial ratio, liquidity-based or rating covenants. Significant, unmitigated market value risk.
External Support & Regulatory Mandate	Strong evidence of government's ability and propensity to provide ongoing and/or extraordinary support. Long track record of stable government support. CDFI has strong relationships with all levels of government.	History of negative government intervention or lack of government support. CDFI has weak relationship with federal, state and/or local government(s).
	Supportive and stable regulatory framework with clear legislation and regulations. CDFI is able to maintain stable operations in face of regulatory change. Future regulatory initiatives are not expected to adversely affect industry or organization. CDFI participates in regulatory process. CDFI is in compliance with all relevant laws and regulations.	Lack of clear legislation or regulations. Regulatory framework adversely affects CDFI's operations or performance. Minimal or ineffective participation in regulatory process, resulting in negative regulatory outcomes. CDFI is out of compliance with material rules and regulations.
	CDFI plays important policy role or provides essential public service, or CDFI is systemically important financial institution.	Absence or loss of policy mandate. CDFI participates in profit-maximizing activities that conflict with its stated mission.
	Strong partnerships and/or stable financial or operational support from banks, private institutions, foundations, government and/or investors.	Significant and/or unanticipated changes to support provided by banks, private institutions, foundations, government and/or investors. Loss of CDFI certification by the U.S. Department of Treasury.

Source: Fitch Ratings

Annex 1—Core Capital Analysis

The core capital ratio (CCR) is the cornerstone of capital adequacy analysis for financial institutions worldwide. It is also one of the key measures used in Fitch's rating analysis for assessing the capital adequacy of both banks and NBFIs (such as CDFIs), which promotes consistency and ratings comparability across sectors.

The CCR measures the ability of a CDFI's capital base to absorb unreserved, unexpected losses in its asset portfolio. Since CDFIs are not required to calculate or report CCRs in their financial statements, Fitch relies on its bank rating criteria (see Fitch's "Bank Rating Criteria"), which provide guidance on how to derive the numerator (core capital) of the CCR in cases where the regulatory common equity Tier 1 capital ratio is not available.

The numerator of the CCR consists of reported equity, to which positive or negative adjustments may be made (if and when applicable to CDFIs) based on the guidance included in Annex 1 of Fitch's "Bank Rating Criteria." The denominator consists of the sum of a CDFI's risk-weighted assets (RWAs). RWAs are derived by multiplying each of the CDFI's risk exposures (including loans and investments) by the relevant risk weight for each category of exposure, to reflect the relative credit risk of different types of assets. The table below indicates the risk weights generally applied by Fitch to the various asset classes typically held by CDFIs. The risk weights are derived from the standardized risk weights established by the Basel III Final Rule for U.S. banks, as codified in the U.S. Code of Federal Regulations. In certain cases, the risk weights applied in Fitch's rating analysis may differ from those shown in the table below. If this occurs, the variance and the rationale therefor will be disclosed in the published ratings report.

No.	Type of Exposure	Example(s)	Risk Weight
1	Cash	—	0%
2	U.S. sovereign exposures (including U.S. government agencies, GSEs, Federal Home Loan Banks, Federal Reserve, etc.)	Mortgage loans insured or guaranteed by the U.S. federal government, Fannie Mae, Freddie Mac, etc.	20%
3	Exposures to foreign governments (including their central banks), foreign public sector entities (PSEs), foreign banks, supranational entities and multilateral development banks	—	Varies; refer to U.S. Basel III risk weights
4	U.S. PSEs, including U.S. states and municipalities	—	50%
5	U.S. depository institutions and credit unions	Bank certificates of deposit	20%
6	Securities firms	—	100%
7	Corporates and retail	Unsecured loans (micro-enterprise, business, community services and consumer loans)	100%
8	Residential mortgages	Single-family and multifamily mortgage loans	50%
9	Construction and real estate development; commercial real estate	Acquisition, development and construction loans; non-residential commercial real estate loans	150%
10	Past due amounts	Loans 90 days or more past due or in non-accrual status	150%
11	Derivatives, collateralized transactions, securities financing transactions, securitizations, unsettled and cleared transactions, off-balance sheet items, etc.	Swap contracts	Varies; refer to U.S. Basel III risk weights
12	Publicly traded equities and equity investment funds	Equity mutual funds	300%
13	All other equity exposures	—	400%
14	Default risk weight for items not specifically assigned to a risk-weight category	Restricted cash, receivables, property and equipment, right-of-use assets, loans held for sale, prepaid expenses, other investments, other assets, deferred charges, advances to affiliates, etc.	100%

Source: Fitch Ratings, U.S. Code of Federal Regulations (CFR), Title 12, Section 3.32 (12 CFR §3.32)

Annex 2—Key Metric Definitions

Key Rating Driver	Term	Definition
Revenue Defensibility	Non-performing loan (NPL) ratio	Loans 90+ days delinquent or in default, foreclosure or non-accrual status / total loans (%)
	Net chargeoff (NCO) ratio	(Total loan chargeoffs – net recoveries) / total loans (%)
Operating Risk	Net interest spread (NIS)	(Investment income + loan interest revenue – interest expense) / total interest income (%)
	Earned income ratio (EIR)	Total earned revenue/total revenue (%)[a]
	Return on assets (ROA)	Net income / average assets (%)
Financial Profile	Debt to equity (DTE) ratio	Short- and long-term debt / total equity (x)
	Fitch core capital ratio (CCR)	Core capital / risk-weighted assets (%) (as defined in Fitch's "Bank Rating Criteria")
	Short-term liquidity (STL) ratio	(Unrestricted cash + liquid assets + undrawn committed facilities) / short-term debt (x)

[a]Earned revenue is defined as interest on cash and investments, income earned on the loan portfolio, fee income, contract income and other earned (not contributed) income.
Note: All metrics are calculated as five-year average of annual ratios based on most recent five years' financial statements.
Source: Fitch Ratings

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