SESSION THREE Ratings and Credit Enhancement



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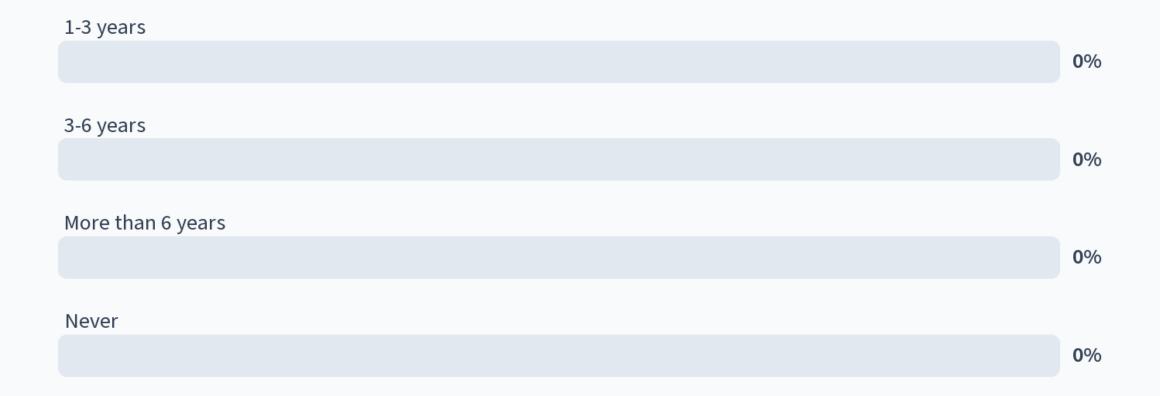
GRAHAM SCHNAARS

Director, U.S. Public Finance

Fitch Ratings



When was YOUR last rating agency interaction (new rating or review)?



Which statement best describes your experience:

Excellent, our finance team prepared us well and we knew exactly what to expect. 0% Good, we've been through the process before but there were some surprises. 0% Fair, a little choppy but the rating agency analyst helped us through. 0% Poor, we were blindsided by the approach. 0% N/A, but we have a rating meeting coming up and we are nervous; we only issue insured or unrated bond... 0%

Ratings and their Role in Bond Issuance

FACTORS THAT INFORM PRICING:

- Sector and security
 - Other transaction in the market
 - Demand for munis in general
 - Structure/maturity
 - Secondary market liquidity
 - Credit enhancement
 - BOND RATINGS

TYPES OF SALE/THE RATING PROCESS:

- Negotiated sales:
 - MA, underwriter or issuer manages the process
- Competitive:
 - MA or Issuer

BOND RATINGS ARE...

- An analysis as of a point in time
- An opinion (subject to change) based on verifiable facts presented to the rating agencies
- Subject to revision based on
 - Changes in criteria
 - Changes in circumstances
 - Changes within your control/changes outside your control

BOND RATINGS ARE NOT...

- A confirmation of management's skills
- A political endorsement
- Negotiable
- A guaranty of repayment or liquidity

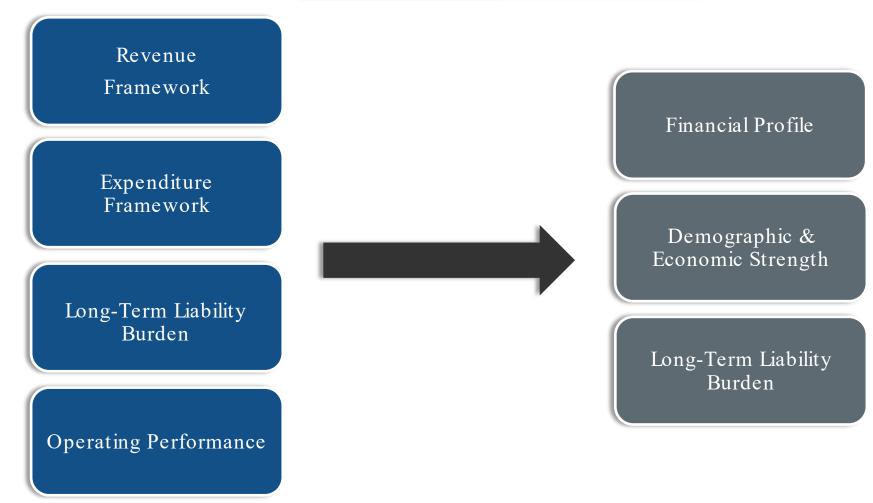


Questions for Rating Agencies

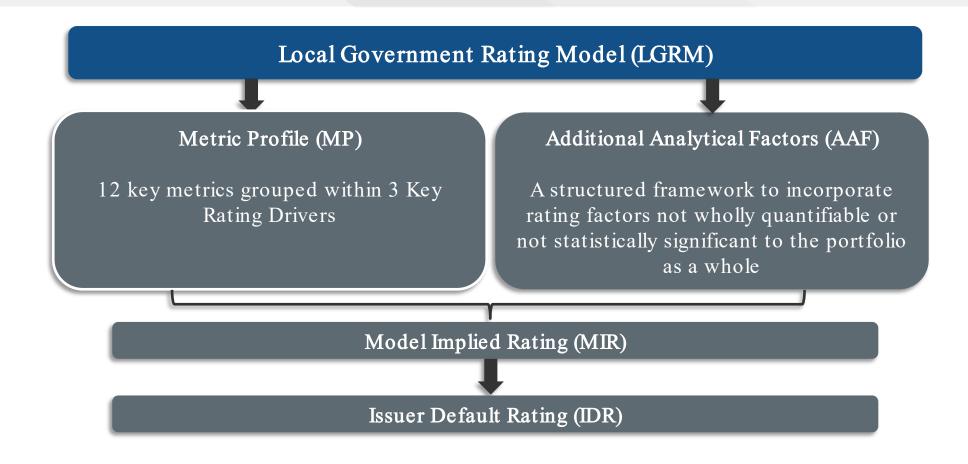
- REGULATORY OVERSIGHT
 - How has the regulatory climate changed for rating agencies?
 - How have rating agencies addressed regulations?
 - What information can a rating agency rely on (e.g., third party verifiable information)?
 - Are periodic reviews required?
 - What is the purpose of providing separate issuer and security ratings?
 - Metrics and subfactors (the nuts and bolts of ratings) how are they used in ultimate rating?
- IF IT'S BEEN FIVE YEARS SINCE OUR LAST RATING...
 - Will there be different areas of focus? YES
- ONLINE RESOURCES AND TOOLS TO SELF-EDUCATE



Previous Criteria → Current Criteria Key Rating Drivers (KRDs)



Local Government Criteria Rating Framework



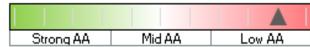
Main Enhancements From The New Criteria

- Fixed metric weightings provide greater rating clarity
- Creates a ranking of the credit quality of each individual issuer in the Fitch local government rating portfolio
 - ➤ All Fitch's local government ratings are ranked together
- Notch-specific ratings communicated numerically supporting analysis of "headroom" to the next higher or lower rating

Metric Profile and Model Implied Rating Correspondence Table

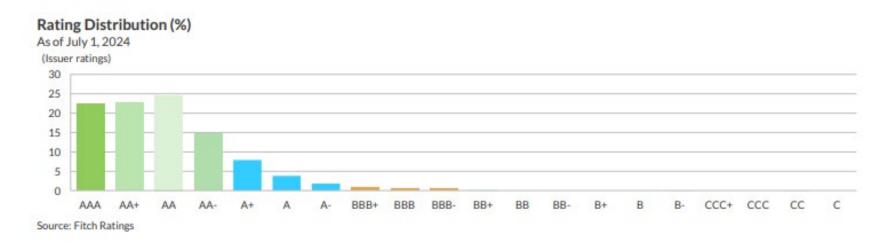
cal Value	OR .
10	AA
9	A+
8	A
7	A-
6	+
5	
4	-
3	BB+
2	BB
1	BB- and Below
	ource: Fitch Ratings

Issuer Position Within AA Rating



Fitch's U.S. Public Finance Tax Supported Rating Distribution

Tax-Supported Distribution



Why The Change In Criteria?

- Quantify the relationship between credit metrics and ratings
- Leverage technology to provide a more quantitative, objective and consistent rating approach
- Allowing market participants to model financial inputs and observe potential rating impact
- Improve the ability to evaluate the portfolio through different economic cycles
- Enhance rating transparency and consistency
- Differentiate credits within a compressed rating portfolio
- Explicitly communicate rating headroom and sensitivity analysis
- Improve the ability to triage and screen the portfolio

3 Key Rating Drivers (KRDs) with 11 Metrics

Key Rating Driver (Implied KRD Weight %)	Metrics	Implied Metric Weight (%)
Financial Profile	Financial Resilience	35
(35%)	Revenue Volatility	-
	Population Trend	8
	Unemployment Rate	9
Demographic and Economic Strength (44%)	% of Population w. Bachelor's Degree and Higher	9
	MHI as a % of Portfolio Median	9
	Population Size	4.5
	Economic Concentration	4.5
	Liabilities (Overall)/ Personal Income	7
Long-Term Liability Burden (20%)	Liabilities (Direct) Governmental Revenues	5
	Carrying Costs/Governmental Expenditures	8

- The sum of the implied composite weights does not add up to 100% due to rounding
- The weights shown are indicative only to provide context as to relative factor importance, but are inputs into a regression analysis
- The weights for the individual subfactors are combined into composites for purposes of the model

LGRM External Model

						on Within AAA Rating				
Fiscal Year 2022	Long		1	Run Model	AAA AAA			AA+		
		lotching Total	1 7		Strong A		Low AAA			
Metric Profile 9.20 Metric Profile Mapping AA+		l Implied Rating	10.20	Clear Input	11 to 10	0.67 10.67 to 10.33	10.33 to 10			
Metric Profile Mapping AA+	Mode	I Implied Rating Mapping	, ддд							
			Metric			Composite		Metric Profile		
Metric		Level / CAGR ⁽¹⁾	Percentile	Weight	Percentile/Val	lue Assessment	Weight			
Financial Profile										
Financial Resilience Components										
Available Reserves (FB/Expendit	tures: 5-Year Low) (%)	25.9			_					
Revenue	e Control Assessment	Low			_					
Expenditure	e Control Assessment	Midrange			5	333	38%			
	Budgetary Flexibility	Limited								
Financial Resilience		aaa	N/A	100%						
Lowest Cumulative 3 Year Revenue Performan	ce (+/-) since 2008 (%)	-10.0				Weak	N/A			
Revenue Volatility ⁽¹⁾		1.0	30%	100%	1.0	VVCar.	IN/A			
Demographic & Economic Strength										
Trend										
Po	pulation (CAGR) ⁽²⁾ (%)	-0.2	8%	60%	09/ Windows 409/		9% Weakest		10%	AA+
Em	ployment (CAGR) (%)	-0.7	9%	40%	7/0	AACAVC21	10%			
Level		3.5								
Unemployme	Unemployment Rate (Annual)(%) ⁽⁵⁾		84%	33%						
% Population w/ Bachelor's	Degree and Higher ⁽²⁾	60.0	95%	33%	83%	Strongest	24%			
MHI as a % of	the Portfolio Median	120.7	71%	33%						
Concentration & Size										
	Population Size (2)(3)	58,000	100%	50%	100% Strongest		7%			
Economi	ic Concentration ⁽³⁾ (%)	33.8	100%	50%			770			
Long-Term Liability Burden										
Liabilities (Overall)	/Personal Income (%)	6.8	66%	40%						

5%

12%

20%

32%

Weak

20%

338

21.9

Liabilities (Direct) / Governmental Revenues (%)

Carrying Costs/Governmental Expenditures (%)



Analytical Judgment and Expertise

- Importance of analytical judgment remains vital within the proposed criteria and model
- There are opportunities at every step for the analyst and rating committee to incorporate issuer specific considerations
- Some examples of analytical adjustments include:
 - > Historical data anomalies
 - > Forward-looking performance shifts
 - > Nonrecurring events
 - > Scenario analysis
- Additional Analytical Factors (AAF)

Additional Analytical Factors (AAF)

- Additional Analytical Factors (AAF) draw upon analytical expertise and experience to incorporate rating factors that are not wholly quantifiable, such as management and governance, or are measurable but not statistically significant to the portfolio as a whole
- Common risk assessment metrics chosen for the model do not fully capture all relevant influences on credit quality
- Additional Analytical Factors (AAF) are grouped by Key Rating Driver (KRD), similar to the model metrics
- Maximum of +2/-2 AAF per KRD and total of +3/-3 overall

Key Rating Driver (KRD)	Additional Analytical Factors (AAF)
Financial Profile	Fiscal Oversight Revenue Capacity Contingent Risk Nonrecurring Support or Spending Deferrals Political Risk Management Practices
Demographic and Economic Strength	Economic and Institutional Strength Concentration Risk School District Enrollment
Long-Term Liability Burden	Pension Assumptions Pension Contributions OPEB Contributions Debt Structure Capital Demands



ESG Factors for Non-Tax-Supported U.S. Public Finance

Sector-Specific ESG Factors for Major U.S. Public Finance Sectors (Non-Tax-Supported)

Environmental Factors	Public Power	Water & Sewer	Housing (Master Revenue, HFA GO, Other) ^a				
GHG Emissions and Air Quality		E	N.A.				
Energy Management	Fuel used to generate energy		N.A.				
Water and Wastewater Management	Water use by hydroelectric or other generating plants; effluent management	Water	r use in operations	Water use, consumption, resource availability	N.A.		
Waste and Hazardous Materials Management; Ecological Impacts	Waste from operations	Impact of waste including pollution; discharge compliance	Management of medical waste	Land planning and development; construction	Environmental site risk; remediation and liability; sustainable building		
Exposure to Environmental Impacts	Plant and network exposure to extreme weather events	Exposure to extreme weather events	Business disruption from climate change; impacts that change human health needs	Exposure to extreme weather events that disrupt operations	Asset, operations and/or cash flow exposure to extreme weather events and other catastrophe risk		
Social Factors							
Human Rights, Community Relations, Access and Affordability	Product affordal	pility and access	Low-income patient access	Relationships with local communities; access and affordability	Low-income resident access; housing affordability		
Customer Welfare — Fair Messaging, Privacy and Data Security	Quality and safety of product	s and services; data security	Data privacy; care quality and safety outcomes; controlled substance management; pricing transparency	Data security and privacy; fair marketing of costs and educational outcomes	Quality and safety of products and services; data security		
Labor Relations and Practices	Impact of labor negotiations and employee (dis)satisfaction				Impact of labor negotiations and employee (dis)satisfaction; recruitment and retention of skilled workers		
Employee Wellbeing		Worker safety and accident prevention					
Exposure to Social Impacts	Social resistance to major projects that leads to delays and cost increases	Social resistance to major projects that leads to delays and cost increases and/or unfavorable regulatory regimes	Social pressure to contain healthcare spending growth; sensitive political environment with impactful legislative changes	Social or consumer-driven changes impacting demand and/or public support	Macroeconomic factors and a sustained structural shift in secular preferences affecting consumer behavior and underlying mortgages and/or mortgage availability		
Governance Factors							
Management Strategy	St	rategy development and imp	olementation	Management effectiveness in executing strategy and mission components; ability to manage through an economic cycle	Strategy development and implementation		
Governance Structure	Governing body independent of political or ex		Board independence and effectiveness; ownership concentration	Board independence and effectiveness in fiduciary and strategic efforts; ownership concentration; span of control	Governing body independence and effectiveness; degree of political or external influence Complexity, transparency and		
Group Structure		Complexity, transparency and related-party transactions					
Financial Transparency		Quality and timing of financia	Quality, timing, frequency, reliability, level of detail and scope of financial disclosure	Quality and timing of financial disclosure			

^{*}The CDSL group maintains three ESG Housing Navigators: Master Revenue, HFA GO and Other; Military Housing and Affordable Housing; and HFA Loan Program Master. HFA – Housing finance agency. N.A. – Not applicable. Source: Fitch Ratings.



ESG Factors for State and Local Governments

Sector-Specific ESG Factors for U.S. Public Finance Tax-Supported Issuers (State and Local Governments)

GHG Emissions and Air Quality	Emissions and air pollution as constraints on economy and revenue growth; enforcement/compliance with				
	governmental/regulatory standards				
Energy Management	Impact of energy resources management on economy and governmental operations, including				
	enforcement/compliance with governmental/regulatory standards				
Water Resources Management	Water resource availability impacts on economy and governmental operations, including enforcement of				
	governmental/regulatory standards				
Biodiversity and Natural Resources Management	Impact of natural resources management on economy and governmental operations				
Natural Disasters and Climate Change	Impact of extreme weather events and climate change on economy, governmental operations and policy related				
	to natural disasters treatment				
Social Factors					
Human Rights and Political Freedoms	Policy framework on social stability and human rights protection				
Human Development, Health and Education	Impact of health and education on economic resources and governmental operations				
Labor Relations and Practices	Impact of labor negotiations and employee (dis)satisfaction				
Public Safety and Security	Impact of public safety and security (including cybersecurity) on business environment and/or economic				
	performance				
Demographic Trends	Impact on economic strength and stability (labor force supply, household income, population and aging, etc.)				
Governance Factors					
Political Stability and Rights	Impact of political pressure or instability on operations; tendency toward unpredictable policy shifts				
Rule of Law, Institutional and Regulatory Quality, Control of Corruption	Governmental effectiveness; control of corruption; regulatory quality; management practices and their				
	effectiveness; respect for property rights				
nternational Relations and Trade	Trade agreements and impact on economy and revenue growth				
Creditor Rights	Willingness to service and repay debt; exposure to outstanding or pending litigation				
Data Quality and Transparency	Limitations on quality and timeliness of financial data, including transparency of public debt and contingent				
	liabilities				
Source: Fitch Ratings.					



MOODY'S RATINGS

Ratings and Research - San Francisco, CA

• Alexandra Cimmiyotti, VP- Senior Credit Officer

• Public Finance Group

Who we are and what we do

Moody's **INVESTORS SERVICE**

FACTS & FIGURES

Full Year 2023

33,200+

4,800+

2,300+ Financial Institutions



980+ Insurance Organizations

14,700+

8,900+ Structured Finance Deals 1,000+

370+ Sub-Sovereigns

144 Sovereigns*

47 Supranational Institutions*



\$42+ trillion

\$19+ trillion

\$9+ trillion



26,600+

4,500+

2,100+

13,900+

4,700+

6,100+



26,400+ Publications globally

19,300+ Issuer

Research

2,200+ Sector Research

4,800+ Other Reports

190+ Rating

Methodologies



PEOPLE

13,500+

1,700+ Analysts

40+

Countries/Regions



EVENTS

540+

Global events

≈58,000 Global participants



AWARDS & RECOGNITION

information, visit awards.moodys.io

What is a Moody's Credit Rating?

Provide investors with a simple system of gradation by which future relative creditworthiness of securities may be gauged

Rating	Description
Aaa	Highest quality, with lowest level of credit risk
Aa	High quality and subject to very low credit risk
A	Upper-medium grade and subject to low credit risk
Ваа	Medium grade, moderate credit risk, and may possess certain speculative characteristics
Ва	Speculative and subject to substantial credit risk
В	Speculative and subject to high credit risk
Caa	Speculative of poor standing and subject to very high credit risk
Ca	Highly speculative and likely in, or very near, default, with some prospect of recovery of principal and interest
С	Typically in default, with little prospect for recovery of principal or interest



Moody's Rating Methodology



Published rating methodologies ensure a consistent approach

Methodologies include a rating grid: a summary of the main qualitative and quantitative factors considered



Methodology grids provide transparency for issuers and investors to understand the rating outcome



It is **not an exhaustive treatment** of all factors reflected in Moody's ratings: the indicated outcome from the grid can and does often differ from the actual rating assigned



All financial ratios are adjusted using **Moody's Global Standard Adjustments**



Rating assignments/changes are made by rating committees, taking into account a wide range of factors, which are not restricted to credit metrics or the methodology



The Rating Process – Six Steps



Ratings are determined by committees, not by individual analysts



Moody's assigns a lead analyst



Analyst gathers and analyzes information



Designed to foster free exchanges of differing views and to encourage rigorous discussion and debate

Assignment

Methodology

Analysis

Discussions

Committee

Publication

Analyst preliminarily determines appropriate methodology



Credit discussions between issuer and analysts



Lead analyst communicates the rating and rationale to the issuer

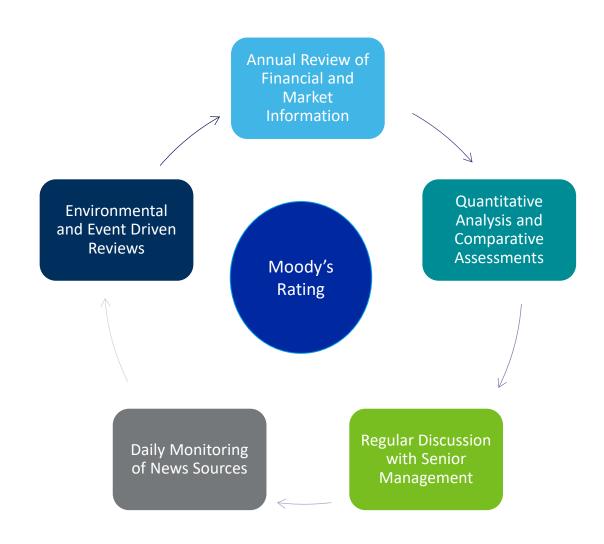


Lead analyst will provide a copy of the rating report for review





Long-term rating relationship with regular monitoring



Cities and Counties

Cities and Counties Methodology

Transition of cities and counties from security-based to sector-based approach



Heightens the focus on credit drivers specific to cities and counties rather than a particular security pledge



Enhances the consistency of our analysis through a holistic approach which includes all functions of the issuer



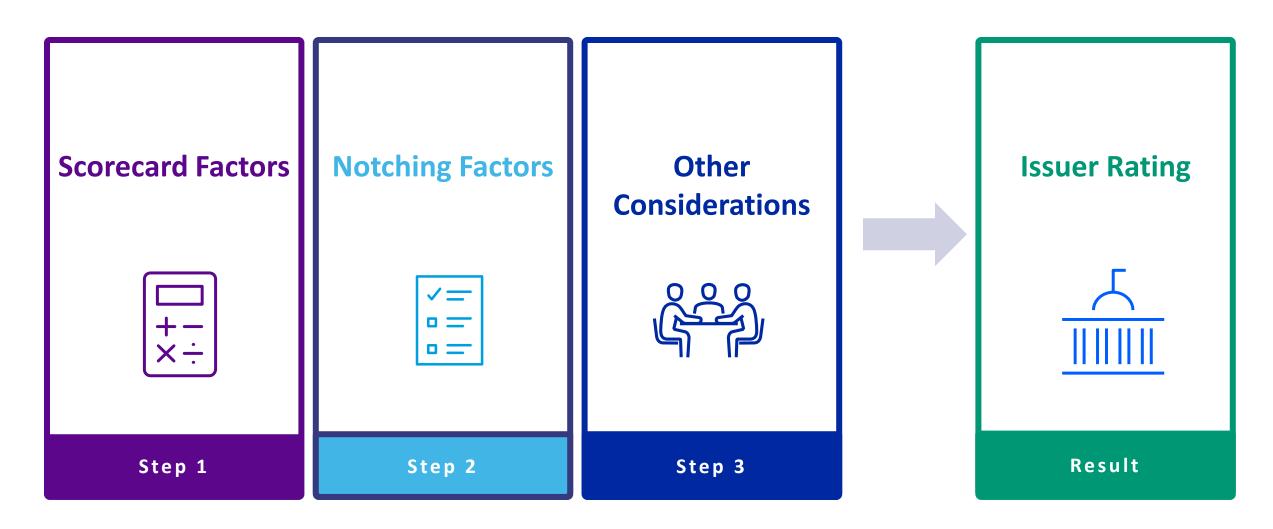
Brings greater transparency to the rating process by providing more systematic clarity to credit considerations



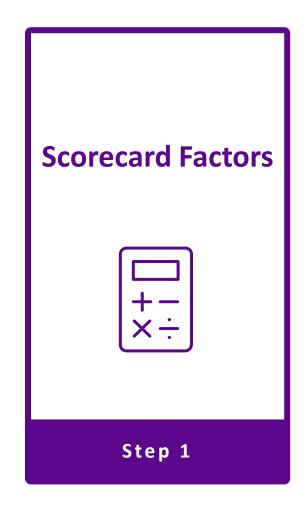
Follows the sector-based approach established by the US K-12 Public School Districts and US States and Territories Methodologies

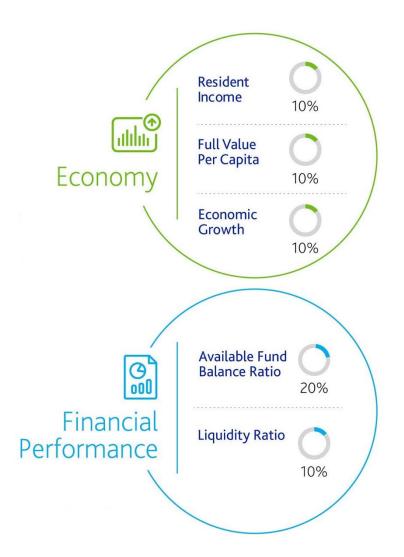


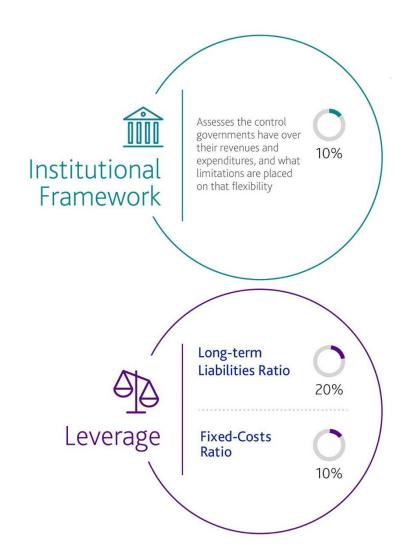
Arriving at the issuer rating



Arriving at the issuer rating – Step 1







City & County Methodology (City of ABC)

	WEIGHTS	INPUT	SCORE	Ass	Aa	Α	Baa	Ba	В	Caa	Ca
conomy											
Resident Income (MHI Adjusted for RPP / US MHI)	10.0%	81.0%	0.74	>=120%	100 - 120%	80 - 100%	65 - 80%	30 - 65%	35 - 50%	20 - 35%	<20%
Full value per capita (full valuation of the tax base / population)	10.0%	\$58,692	0.77	>=\$180,000	\$100,000 - \$180,000	\$60,000 - \$100,000	\$40,000 - \$60,000	\$25,000 - \$40,000	\$15,000 - \$25,000	\$9,000 - \$15,000	<\$9,000
Economic Growth (5-year CAGR real GDP - 5-year CAGR US real GDP)	10.0%	0.5%	0.13	>=0%	(1) - 0%	(2.5) - (1.5)%	(4.5) - (2.5)%	(7) - (4.5)%	(10) - (7)%	(15) - (10)%	<(15)%
Financial Performance											
Available Fund Balance Ratio (Available Fund Balance + Net Current Assets/ Revenue)	20.0%	33.5%	0.39	>=35%	25 - 35%	15 - 25%	5 - 15%	0 - 5%	(5) - 0%	(10) - (5)%	<(10)%
Liquidity Ratio (Unrestricted Cash / Revenue)	10.0%	31.5%	0.40	>=40%	30 - 40%	20 - 30%	12.5 - 20%	5 - 12.5%	0 - 5%	(5) - 0%	<(5)%
Institutional Framework											
Institutional Framework	10.0%	Aa	0.30	Ass	Aa	A	Baa	Ba	В	Not applicable.	Not applicable.
Leverage											
Long-term Liabilities Ratio ((Debt + ANPL + Adjusted Net OPEB + Other Long-Term Liabilities) / Revenue)	20.0%	480.4%	2.02	<=100%	100 - 200%	200 - 350%	350 - 500%	500 - 700%	700 - 900%	900-1100%	>1100%
Fixed-Costs Ratio (Adjusted Fixed Costs / Revenue)	10.0%	18.4%	0.66	<=10%	10 - 15%	15 - 20%	20 - 25%	25 - 35%	35 - 45%	45 - 55%	>55%
Notching factors											
Additional strength in local resources		0.0	0 to +2								
Limited Scale of Operations		0.0	-1 to 0								
Financial Disclosures		0.0	-2 to 0								
Potential Cost Shift to or from the State		0.0	-1 to +1								
Potential for Significant Change in Leverage		0.0	-2 to +1.5								
Total Factor Notching		0.0									

Scorecard Indicated Outcome:

A1

Sources: US Census Bureau,

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Arriving at the issuer rating – Step 2



- 1. Additional strength in local resources
- 2. Limited scale of operations
- 3. Financial disclosures
- 4. Potential cost shift to or from the state
- 5. Potential for significant change in leverage

Notching Factors

Notching factors are quantitative

Notching Factor	Notching Range
Additional Strength in Local Resources	0 to +2
Limited Scale of Operations	–1 to 0
Financial Disclosures	–2 to 0
Potential Cost Shift to or from the State	–1 to +1
Potential for Significant Change in Leverage	−2 to +1.5

Source: Moody's Investors Service

Arriving at the issuer rating – Step 3

Other Considerations



Step 3

Examples of qualitative Other Considerations:



Environmental, Social and Governance

Exposure to natural disaster risk may influence credit strength. The risk of teacher strikes are an example of a social consideration. Weak or opaque governance can negatively affect school performance.



Competitive Considerations

Academic performance measures may result in competitive strength. The risk of future enrollment losses to charter schools or other open-enrollment public schools may not already be reflected in the scorecard.



Extraordinary State Support

State may provide meaningful financial or managerial support, bolstering a weak fundamental credit profile.

Arriving at the issuer rating – Step 3

Other Considerations



Step 3

Examples of qualitative other considerations (not an exhaustive list):

- Fund-specific financial considerations
- Competitive enterprise risk in governmental or businesstype activities
- Likelihood of receiving extraordinary or ongoing support
- Strengths or weaknesses related to economic concentration
- Unusual risk or benefit posed by long-term liabilities

Other Considerations

These considerations are qualitative and only relevant to certain issuers

- Environmental, Social and Governance Considerations
- Event risk
- Strengths or weaknesses related to economic concentration
- Unusual strengths or weaknesses related to budgets or liquidity
- Fund specific financial considerations
- Competitive enterprise risk in governmental or business-type activities
- Strengths or weakness associated with component units or other related entities

- Related local governments
- Likelihood of receiving extraordinary or ongoing support
- Financial controls
- Unusual Risk or Benefit Posed by Long-Term Liabilities
- History or likelihood of impaired liquidity or market access or missed debt service payments
- Expected decline or improvement in instrument-level credit quality
- Considerations specific to US Native American Tribal Nations
- Additional metrics

Moody's Investors Service ESG Scores Explained

Our scores are **NOT** an opinion about an issuer's sustainability performance or ESG disclosures

Credit Impact Score (CIS)

Reflects the impact of ESG on the credit rating **NOT** a combination of E, S and G-IPS

Example of Score:

CIS-4
Highly Negative

- Indicates the extent to which the credit rating would have been different in the absence of ESG issues
- Places ESG in the context of other rating considerations
- CIS-1 (Positive) assigned only if the credit rating is better because of ESG factors

Issuer Profile Scores (IPS)

IPS is our assessment of the issuer's exposure to Environmental (E), Social (S) or Governance (G) risks / benefits material to credit risk including relevant mitigants

Example of Scores:

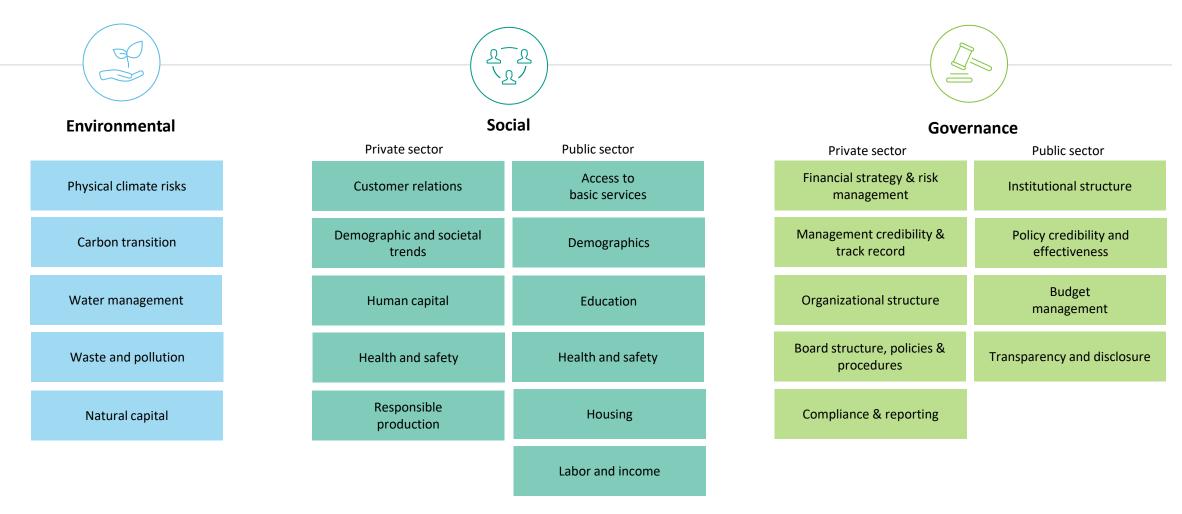


- Scores are global and comparable across sectors
- Incorporate management's action/mitigants
- E-1, S-1 or G-1 (Positive) assigned only when considerations have material credit benefits





ESG Classification System Incorporates Credit Relevant Considerations





ESG Integration into Credit Analysis

Our rating analysis considers all material credit considerations, including ESG

SECTOR-SPECIFIC METHODOLOGIES

Methodology Scorecard / Model

Other Considerations

ESG CROSS-SECTOR METHODOLOGY

ISSUER PROFILE SCORES

Social IPS



- Customer relations
 - Human capital
 - Demographic and societal trends
 - Health and safety
 - Responsible production

Governance IPS



- Financial strategy & risk management
- · Management credibility & track record
- Organizational structure
- Compliance & reporting
- Board structure, policies & procedures

ESG CREDIT IMPACT ● ...
SCORE*

- CIS-1 Positive
- CIS-2 Neutral-

CREDIT RATING

- CIS-3 Moderatel y Negative
- CIS-4 Highly Negative
- CIS-5 Very Highly Negative

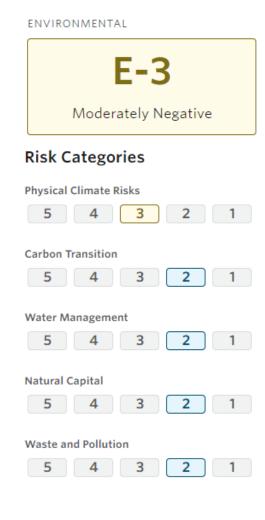
Environmental IPS

- Carbon transitionPhysical climate risks
- Water management
- Waste and pollution
- Natural capital

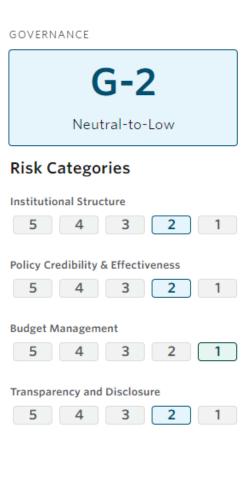
The ESG credit impact score (CIS) is an output of the rating process that more transparently communicates the impact of ESG considerations on the credit rating of an issuer or transaction.



ESG Credit Impact Score







CIS-2

Neutral-to-Low

Analyst Commentary

Los Angeles' ESG Credit Impact Score is neutral-to-low (CIS-2), reflecting moderately negative environmental risks, strong governance, and moderately negative exposure to social risks.



Physical Climate Risks







THE RATING PRESENTATION



- Information
- Presentation
- Advisors and Bankers use their experience
- In Person
- Virtual
- Site Visits

FRAME THE DISCUSSION

- Factor/subfactor as guidance
- Outliers/special factors to consider
- Consistency vs. TMI
- Historic and forecasts
- ESG?
- Making the Case

QUESTIONS?



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