



Importance of Municipal Bond Ratings

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Presented By

Lauren Lowe, Nick Yatsula

PFM Financial Advisors

530 Oak Court Drive
Suite 160
Memphis, TN 38117

901-682-8356
pfm.com



Agenda

- ◆ Rating Overview
- ◆ Scorecard Approach
- ◆ Benefits of a Rating
- ◆ Other Considerations

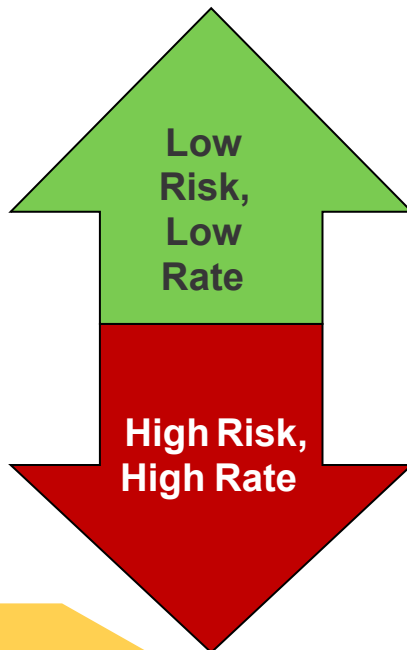


Rating Overview



Rating Overview

- An alphabetic and/or numeric symbol used to give relative indications of credit quality
- Measures the risk to the investor that issuer will default, both the willingness and ability to pay
- Independent, objective & relative assessments of both qualitative & quantitative factors
- The major ratings agencies are Moody's Investors Service, Inc. ("Moody's"), Standard and Poor's ("S&P"), Fitch Ratings ("Fitch") and Kroll Bond Rating Agency ("KBRA").



	Moody's	S&P	Fitch	KBRA
Investment Grade	Aaa	AAA	AAA	AAA
	Aa	AA	AA	AA
	A	A	A	A
	Baa	BBB	BBB	BBB
Non-Investment Grade	Ba	BB	BB	BB
	B	B	B	B
	Caa	CCC	CCC	CCC
	Ca	CC	CC	CC
	C	C	C	C



Rating Overview

- Each category (except triple-A) has three “notches”
- Moody’s modifies with 1, 2, & 3
- S&P, Fitch and Kroll modify with plus (+) and minus (-) signs
- Outlook reflects agency expectations for rating direction (up or down) over next several years
 - Positive, Stable or Negative
- Watch reflects expectations over next several months
- Once a rating is assigned at issuance, credit agencies monitor the on-going financial condition of the issuer through periodic surveillance
- Rating action can be taken at anytime

Moody's		S&P/Fitch/Kroll	
Aaa	Aaa	AAA	AAA
	Aa1		AA+
Aa	Aa2	AA	AA
	Aa3		AA-
	A1		A+
A	A2	A	A
	A3		A-
	Baa1		BBB+
Baa	Baa2	BBB	BBB
	Baa3		BBB-



Local Government General Obligation Methodology & Criteria

- Rating agencies have different approaches for same credit
- Move to bring more transparency to the rating process in recent years
- Focus on main drivers which can affect ability to repay an obligation
 - Management
 - Economy
 - Finances
 - Debt/long term liabilities



Moody's Investor Services

- ◆ Scorecard approach
- ◆ 4 main scorecard categories each with weighted subfactors

Scorecard Category	Weight
Economy/Tax Base	30%
Finances	30%
Management	20%
Debt/Pensions	20%

Scorecard Factor and Weights		
Broad Rating Factor	Rating Subfactor	Subfactor Weighting
Economy/Tax Base	Tax Base Size (full value)	10%
Economy/Tax Base	Full Value Per Capita	10%
Economy/Tax Base	Wealth (median family income)	10%
Finances	Fund Balance (% of revenues)	10%
Finances	Fund Balance Trend (5-year change)	5%
Finances	Cash Balance (% of revenues)	10%
Finances	Cash Balance Trend (5-year change)	5%
Management	Institutional Framework	10%
Management	Operating History	10%
Debt/Pensions	Debt to Full Value	5%
Debt/Pensions	Debt to Revenue	5%
Debt/Pensions	Moody's ANPL (3-year average) to Full Value	5%
Debt/Pensions	Moody's ANPL (3-year average) to Revenue	5%

Source: Moody's Investors Services



S&P Global

- ◆ Scorecard approach
- ◆ S&P scores seven (7) different areas on a scale of 1 to 5 (1 = strongest; 5 = weakest), which will formulate a weighted average resulting in the indicative rating.

Category	Weight
Institutional Framework	10%
Economy	30%
Management	20%
Liquidity	10%
Budgetary Performance	10%
Budgetary Flexibility	10%
Debt & Contingent Liabilities	10%

Source: S&P Global Ratings



Fitch Ratings

- ◆ Economic base forms foundation
 - Performance, trends, prospects
- ◆ No standard weighting of factors
- ◆ Four key rating drivers:

Rating Drivers
Revenue Framework
Expenditure Framework
Long-term Liability Burden
Operating Performance

Source: Fitch Ratings



Kroll Bond Rating Agency

- ◆ Focus on management
- ◆ No rating cap
- ◆ Key Rating Determinants for General Obligation Debt:

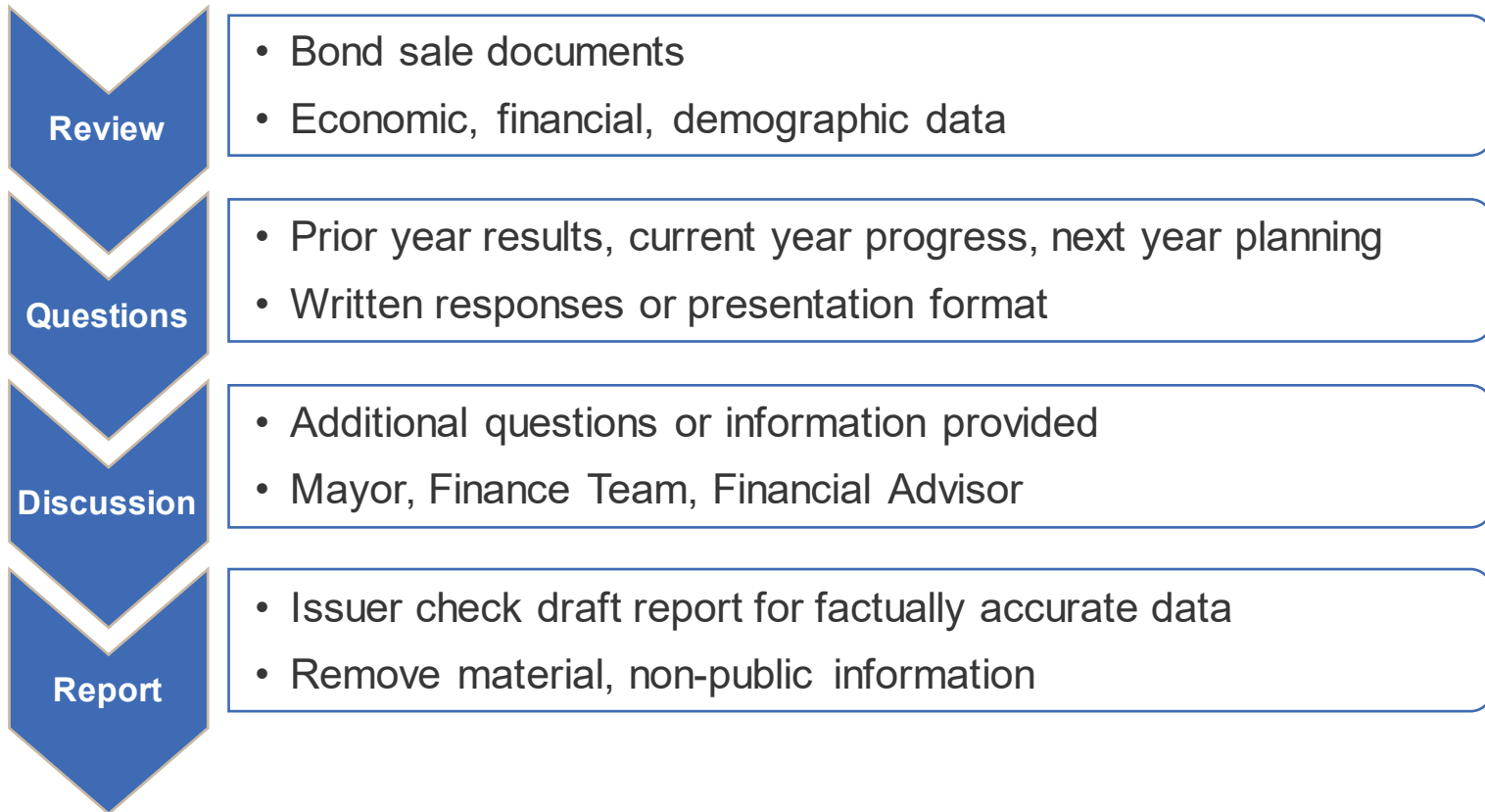
Rating Determinants
Management Structure & Policies
Debt Burden & Additional Continuing Obligations
Financial Performance & Liquidity Position
Municipal Resource Base

Source: Kroll Bond Rating Agency



Rating Process Steps

- Issuer, with assistance from its working group members, controls the rating process

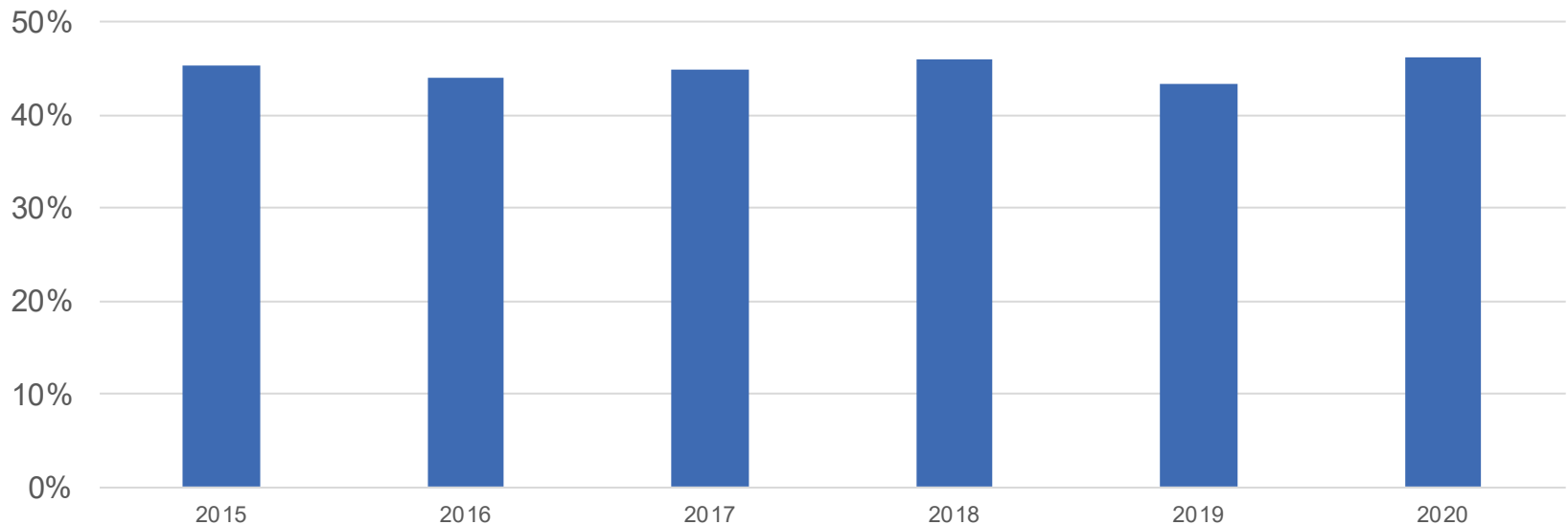




Moody's MFRA Data

- ◆ Moody's Municipal Financial Ratio Analysis (MFRA) data can be used for benchmarking and credit analysis.
- ◆ Subscription based database that allows for ongoing tracking of data for issuers nation wide.

Available General Fund Balance as % of Revenues- TN Cities Rated by Moody's



Source: Moody's Investors Services



Scorecard Approach



Scorecard Approach Overview

- ◆ Certain factors for both Moody's and S&P scorecards, such as Economy and Management, are less quantitative by nature.
 - Institutional Framework score – Moody's and S&P rate Tennessee local governments highly
 - Economy score – focus on tax base size, effective buying income per capita
- ◆ Issuers tend to have more control over quantitative factors such as:
 - Fund/Cash balance
 - Operating History
 - Net Direct Debt to Operating Revenues



Scorecard Category	Weight
Economy/Tax Base	30%
Finances	30%
Management	20%
Debt/Pensions	20%

Moody's Finances Metrics

- ◆ An issuer's financial position is indicative of their ability to adapt to unexpected circumstances, meet existing obligations, and is a measure of overall flexibility. Metrics are associated with liquidity and financial trends.
- ◆ Finances Score also includes an evaluation of management, measuring the accuracy of budgetary projections, use of historical trends and realistic economic indicators in these projections, and the frequency of updates.

Subfactor	Weights
Fund Balance (% of Revenues)	10%
Fund Balance Trend (5-year change)	5%
Cash Balance (% of Revenues)	10%
Cash Balance Trend (5-year change)	5%

Source: Moody's Investors Services



Scorecard Category	Weight
Economy/Tax Base	30%
Finances	30%
Management	20%
Debt/Pensions	20%

Moody's Debt/Pension Score

- ◆ High levels of leverage can lead to difficulties in meeting existing obligations and leave little room for additional borrowing.
- ◆ Debt burden is determined by reviewing these obligations relative to tax base and operating revenue.
- ◆ Moody's utilizes an Adjusted Net Pension Liability (ANPL) in order to improve the comparability of financial data among peers.

Subfactor	Weights
Debt to Full Value	5%
Debt to Revenue	5%
Moody's ANPL (3-year average) to Full Value	5%
Moody's ANPL (3-year average) to Revenue	5%

Source: Moody's Investors Services



S&P Liquidity Metrics

Category	Weight
Institutional Framework	10%
Economy	30%
Management	20%
Liquidity	10%
Budgetary Performance	10%
Budgetary Flexibility	10%
Debt & Contingent Liabilities	10%

- ◆ The initial score measures the availability of cash and cash equivalents to service both debt and other expenditures.
- ◆ Cash balances determine the ability to engage in inter-fund borrowing.

Total Cash as a % of Total Governmental Funds Expenditures	Total Governmental Cash as % of Total Governmental Funds Debt Service				
	>120	120-100	100-80	80-40	<40
>15	1	2	3	4	5
8 - 15	2	2	3	4	5
4 - 8	3	3	3	4	5
1- 4	4	4	4	4	5
<1	5	5	5	5	5

Source: S&P Global Ratings



Category	Weight
Institutional Framework	10%
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S&P Budgetary Performance Metrics

- The budgetary performance score measures the current fiscal balance of the government.
- The initial score reviews current balances, both from a general fund and total governmental funds perspective, with adjustments made for net transfers or capital expenditure smoothing.

	Total Governmental Funds Net Result (%)				
General Fund net result (%)	>-1	-1 to -5	-5 to -10	-10 to -15	<-15
Limited (>5)	1	2	3	3	4
Balanced (-1 to 5)	2	3	3	4	5
Pressured (<-1)	3	4	4	5	5

Source: S&P Global Ratings



S&P Budgetary Flexibility Metrics

Category	Weight
Institutional Framework	10%
Economy	30%
Management	20%
Liquidity	10%
Budgetary Performance	10%
Budgetary Flexibility	10%
Debt & Contingent Liabilities	10%

- Measures the degree to which the government can create additional financial flexibility in times of stress.
- The ability of a government to raise additional revenue or reduce expenditures, outside of the measures captured by the institutional framework score, are covered by this factor.

	Available Fund Balance as a % of Expenditures				
%	>15	8 - 15	4 - 8	1- 4	<1
Score	1	2	3	4	5

Source: S&P Global Ratings



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Institutional Framework	10%
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S&P Debt & Contingent Liability Metrics

- Debt service, relative to expenditure levels, determines the burden debt places on the government.
- Debt service, relative to revenues, determines the ability and ease of a government to meet these obligations.
- S&P calculates net direct debt as of the date of the rating analysis, including any potential issuances they are currently rating.

Total Governmental Funds DS as % of Total Governmental Funds Expenditures	Net Direct Debt as % of Total Governmental Funds Revenue				
	<30	30-60	60-120	120-180	>180
<8	1	2	3	4	5
8 - 15	2	3	4	4	5
15 - 25	3	4	5	5	5
25 - 35	4	4	5	5	5
>35	4	5	5	5	5

Source: S&P Global Ratings



Benefits of a Rating

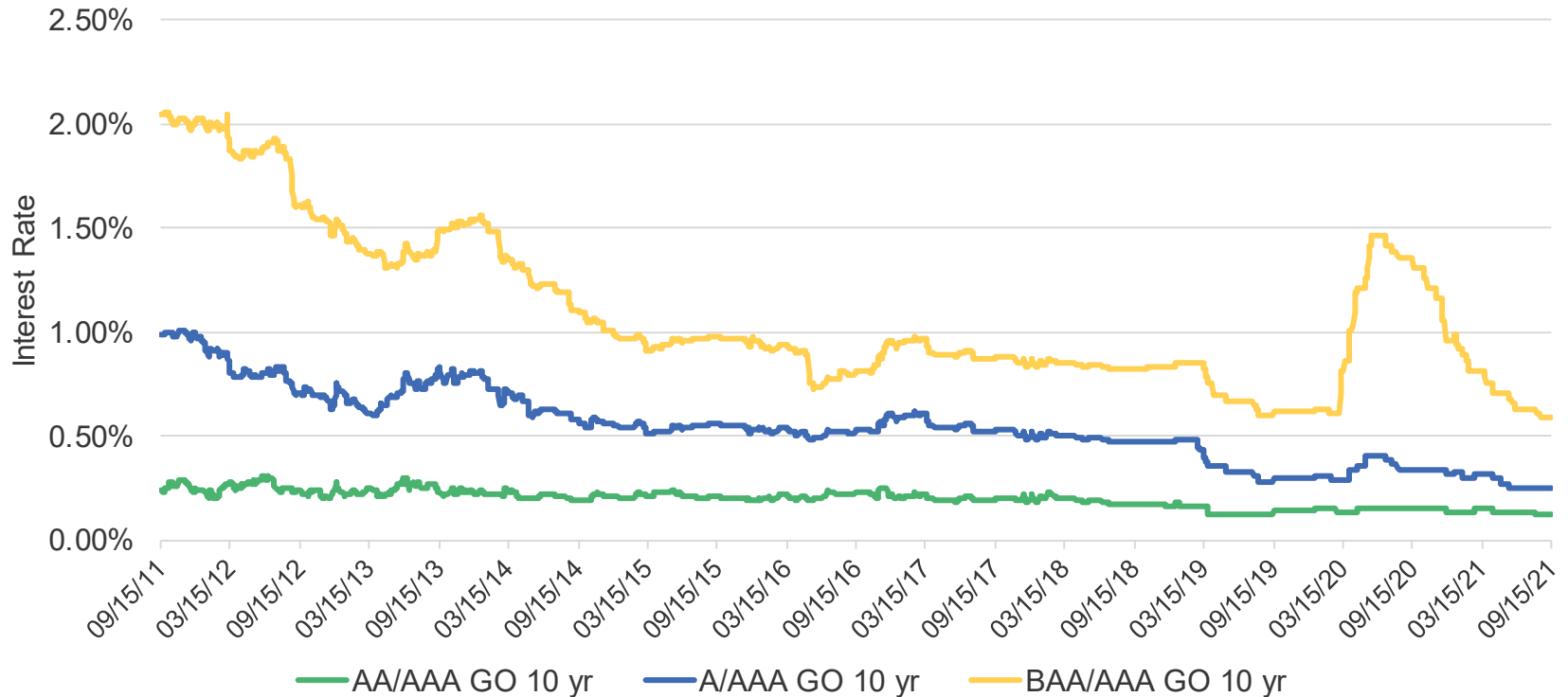


Rating to AAA	Average Spread over 10 Years
AA	20 bps (0.20%)
A	54 bps (0.54%)
BAA	109 bps (1.09%)

Historical Credit Spreads

- ◆ Municipal bonds are priced off the of the AAA MMD benchmark.
- ◆ Credit spreads have compressed in recent years.

Spreads to AAA 10 year GO



Source: Moody's Investors Services; S&P Global Ratings; Fitch Ratings; Kroll Bond Rating Agency



Cost Benefit - Value of a Rating

- ◆ For a hypothetical new money bond issue:
 - \$20 million project fund
 - 20-year term, level debt service
 - 5% coupons and 10-year par call
 - No additional credit spread

Rating	AAA	AA	A	BAA
Total Debt Service	\$24,372,000	\$24,600,000	\$24,848,000	\$25,368,000
Difference	-	\$230,000	\$476,000	\$996,000
Present Value of Debt Service	\$15,201,000	\$15,341,000	\$15,496,000	\$15,821,000
Difference	-	\$140,000	\$295,000	\$620,000

Based on market conditions as of September 15, 2021



Tennessee County – Rating Statistics

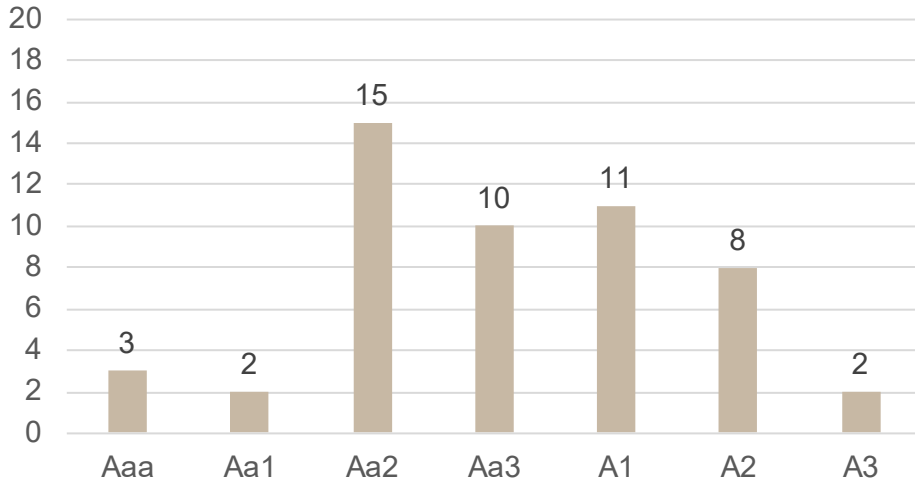
- ◆ Tennessee has 95 counties, of which:
 - Moody's rates 51 counties
 - S&P rates 52 counties
 - Fitch rates 3 counties
 - KBRA does not rate any TN counties
- ◆ Only 3 counties have more than 2 ratings.

*Source: Moody's Investors Services; S&P Global Ratings; Fitch Ratings; Kroll Bond Rating Agency
As of September 22, 2021*

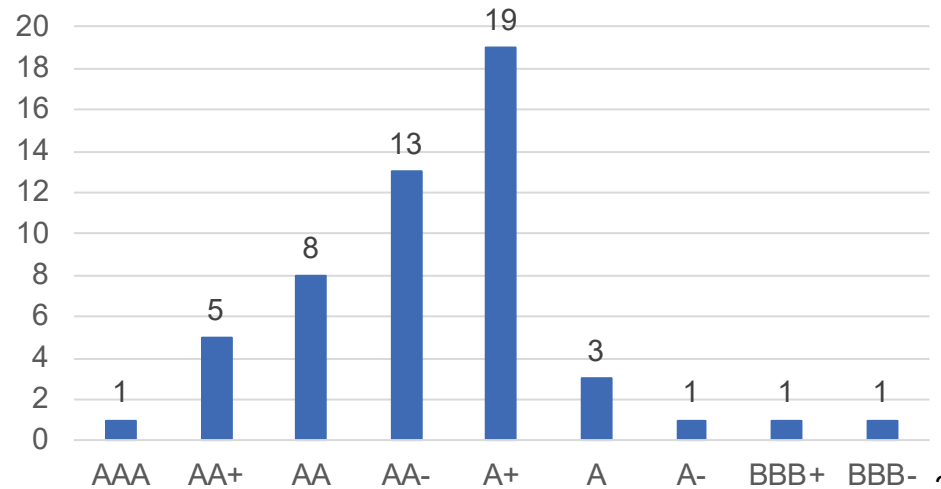


TN County Rating Distribution

TN Counties - Rated by **Moody's**



TN Counties - Rated by **S&P**

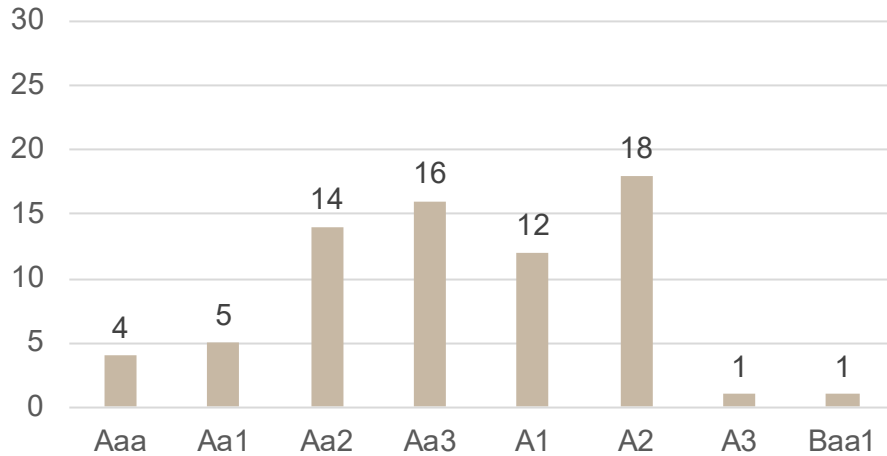


Source: Moody's Investors Services; S&P Global Ratings

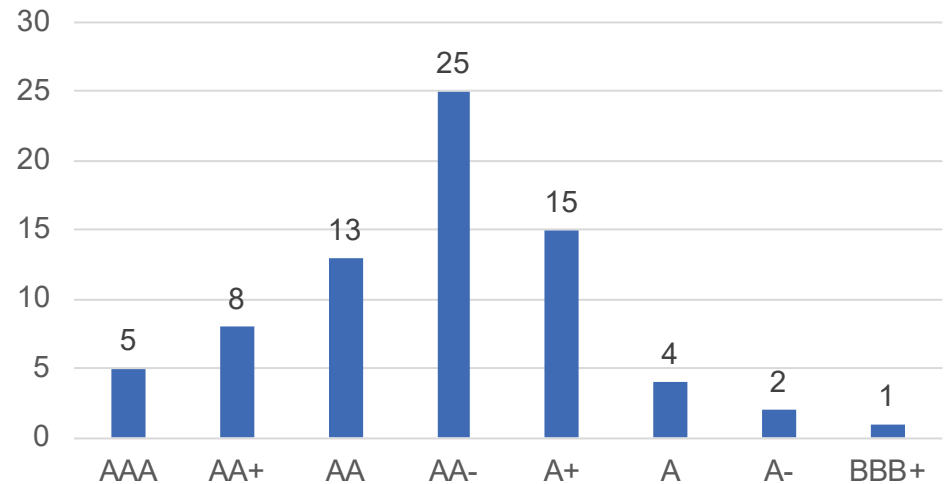


TN Municipality (Cities/Towns) Rating Distribution

TN Cities/Towns - Rated by **Moody's**



TN Cities/Towns - Rated by **S&P**



Source: Moody's Investors Services; S&P Global Ratings



Other Considerations



Managing Objectives for a Rating

- ◆ Frequent vs Infrequent issuers
 - Staff workload capacity
- ◆ Annual surveillance
- ◆ Pressure to maintain high ratings
 - More press from a downgrade vs an upgrade
- ◆ Cost of rating
 - Typically included as cost of issuance expense with bond issue
- ◆ Investor preferences on number of ratings
 - Some larger investors relying more on internal credit research



Trends/Topics

- ◆ Environmental, Social and Governance factors
 - Environmental risks- flooding, drought, extreme weather
 - Social risks- demographics, poverty levels, population trends
 - Governance risks- ability to increase revenues/decrease expenditures; Both S&P and Moody's assign high Institutional Framework scores strong governance statewide
- ◆ Cybersecurity- what are Issuers doing?
 - Amount of cybersecurity insurance
 - Internal training and protocols in place
 - Software security upgrades



Potential Considerations to Improve a Rating

◆ What can Issuers control?

Action	Potential Rating Factor Impact
Long-term capital planning	Management
Review/update policies	Management
Maintain strong fund/cash balances	Operating/Financial/Budgetary Performance, Liquidity
Consistent budget practices	Management



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