

INTERNATIONAL CONFERENCE ON MUNICIPAL FISCAL HEALTH

WORKSHOP: UNIVERSITY OF CHICAGO U.S. PUBLIC FINANCE WORKSHOP

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Assessing Municipal Credit Risk

Michael D. Belsky

University of

Chicago

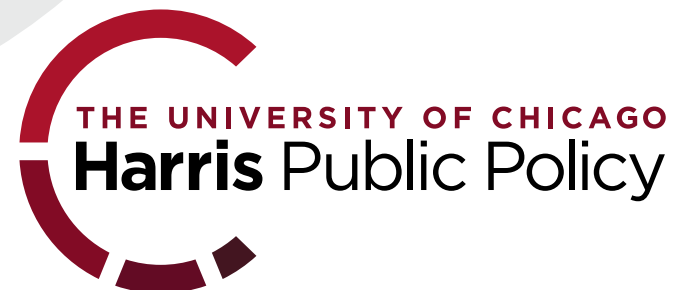
Harris School of Public Policy

Lincoln Institute of Land Policy

International Conference on Municipal Fiscal

Health

General Obligation Bond
Credit Analysis



General Obligation Bonds

- States : Full Faith and Credit
 - ◉ Generally Income and Sales Tax
 - ◉ Constitutionally or Statutorily Protected
- Local Gov't: Property Tax
 - ◉ Unlimited as to Rate or Amount
 - ◉ Statutory lien
 - ◉ Considered most secure investment

Rating Agencies

- A company that provides ratings that indicate the relative credit quality or liquidity characteristics of securities based on published criteria
- Regulated by the SEC as NRSROs



Criteria Reports

Criteria | Governments | U.S. Public Finance:
Standard & Poor's Revises
For Rating Water, Sewer, And
Drainage Utility Revenue B

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Overview

Sector's Fundamental Strength Is Based On Stable Dem

Rationale For Revision

Key Rating Factors

Factors Supporting The 2008 Criteria Revision

Related Articles

Secondary Credit Analysts:

www.standardandpoors.com/ratingsdirect

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Tax-Supported Rating Criteria

Master Criteria

This report updates and replaces the prior criteria report of the same name dated Aug. 15, 2011.

Four Key Rating Factors: Fitch Ratings evaluates finances, and management) in determining the credit quality issuer. The rating process analyzes trends in these areas as well as potential future obligations and exposures.

Interaction of Rating Factors: The major rating factors issuer may have a vibrant and wealthy economy, weak financial limits may offset the positive credit factors, resulting in a lower rating. In turn, a weak economy may be offset by other strengths such as very low debt burden.

Debt and Other Long-Term Liabilities: In evaluating debt, Fitch seeks to determine the extent and nature of the issuer's debt and the outlook for the future, with a focus on affordability and

Economy: Fitch's economic analysis considers the issuer's capacity to support balanced ongoing operations and repayment of future financial and debt resources or challenges.

Finances: Fitch's analysis of finances is focused on the issuer's flexibility to support its obligations over the near and long term.

Management and Administration: Management practices can positively influence the other major credit factors. Poor management encompasses both elected officials and appointed staff members.

Institutional Framework: Fitch's analysis is done in the context of the requirements of the country in which the rated entity operates.

Rated Securities: For governments within the U.S., Fitch evaluates security structures, while outside the U.S., ratings are based on national credit quality. When a specific security is rated, Fitch evaluates the nature of the security and its relationship to the general

Related Criteria

Rating U.S. Municipal Short-Term Debt, Dec. 6, 2011

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Rating Methodology

Moody's U.S. Public Finance

October 2009

General Obligation Bonds Issued by U.S. Local Governments

Summary

This methodology report provides a detailed explanation of how Moody's evaluates the credit quality of bonds issued by counties, cities, school districts and other special districts in the United States that are backed by the entity's ad valorem taxing power. General Obligation (GO) ratings are forward-looking assessments of relative creditworthiness, based on Moody's analysis of four broad rating factors:

- Economic Strength
- Financial Strength
- Management and Governance
- Debt Profile

Moody's employs a weighted average approach to analyzing these factors to arrive at a rating range. The precise rating is based on a comparison with peers, interactions of the individual factors, and additional considerations that may not be adequately captured within the factors. While this framework is comprehensive, it still may not adequately capture the complex web of economic, financial and political issues that affect a local government's relative creditworthiness. Therefore, some of our general obligation ratings may lie outside the rating range implied by the weighted average approach.

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Note: not all ratings are public/published on Moodys.com

Analytical Inputs/Outcomes

- Legal Framework
- Sources of information
- Major Credit Factors
 - Finances
 - Debt
 - Economy
 - Management
- Metrics
 - Time series/Peer Comparisons(Medians)

Moody's Credit Factors

Scorecard Factors and Weights

Local Governments

Broad Rating Factors	Factor Weighting	Rating Subfactors	Subfactor Weighting
Economy/Tax Base	30%	Tax Base Size (full value)	10%
		Full Value Per Capita	10%
		Wealth (median family income)	10%
Finances	30%	Fund Balance (% of revenues)	10%
		Fund Balance Trend (5-year change)	5%
		Cash Balance (% of revenues)	10%
		Cash Balance Trend (5-year change)	5%
Management	20%	Institutional Framework	10%
		Operating History	10%
Debt/Pensions	20%	Debt to Full Value	5%
		Debt to Revenue	5%
		Moody's-adjusted Net Pension Liability (3-year average) to Full Value	5%
		Moody's-adjusted Net Pension Liability (3-year average) to Revenue	5%

Legal Framework

- Constitution, Statute or Charter
 - Statutory or Constitutional Protections of Debt
- Debt Limitations
- Tax Levy or Rate Limits(Prop. 13)
- Voting Requirements/Home Rule
- State supports(Moral obligations)
- Fiscal Emergency Laws

Source Materials 1

- Official Statement
- Annual Budget
 - Financial policies
 - Plan for structural balance
 - Composition of revenues and expenditures for the year
- 3 to 5 years of Annual Audits/CAFR's
 - Statement of Net Assets
 - Liquidity
 - Major long term liabilities
 - Fund financial statements
 - General Fund
 - Major revenue and expenditures
 - Fund balance

Source Materials 2

- More CAFR Info
 - Management Discussion and Analysis
 - Overview of major financial events
 - Required Supplementary Information
 - Pension and OPEB Progress
 - Statistical Section(OS Type Data)
- Five Year Capital Plan
- Investment Policy(Orange County)
- Revenue and Expenditure Forecasts

Source Materials 3

- Secondary Market Disclosure
 - Found on EMMA/NRMSIR's
 - Update of OS
 - Material events
- Issuer Websites
 - Financial policies
 - Posting of materials mentioned above
 - Contact information(CFO)
- News Media
 - Bond Buyer
 - Local papers
- U.S. Bureau of the Census

Finances 1

- Performance of major operating funds
 - General Fund
 - Structural balance between revenues and expenditures(deficits)
 - Consistent fund balance/rainy day funds
 - 10 to 30%
 - Provides liquidity for unexpected expenditures(e.g. natural disasters, litigation settlement, labor contracts)
 - Buffers against revenues that are susceptible to economy(e.g. sales and income taxes)
 - Planned draws and replenishment

Finances 2

- Diversity of Revenue Sources
 - Volatility/Reliability
 - Property tax very reliable
 - Sales, income taxes more volatile
- Own source revenues vs. intergovernmental support
 - Property taxes
 - Intergovernmental support/state aid 40% plus

Finances 3

- Greater mix of revenue sources the better able to weather a decline in any single source
 - Use of one shots
 - Capital expenditures
 - ARRA
- Revenue capacity
 - Statutory caps on property tax rates or levies/remaining capacity
 - Other untapped sources
 - Inability to increase sales tax rates or fees and charges without legislative/voter approval

Finances 4

- Flexibility over Expenditures

- Mandatory

- Debt service vs. pay go capital
 - Mandatory sentencing/prisons
 - Pension payments to retirees
 - Classroom sizes

- Discretionary

- Parks and recreation
 - Actuarially required contributions to healthcare or OPEB
 - Economic development programs

Finances Continued 5

- Political Risk
 - Anti Tax Movements/Failed Referenda
 - Willingness to pay
- Labor Relations
 - Number of contracts
 - Length
 - History of strikes/arbitration
- Tax Collections
 - 95% plus is acceptable
 - County mechanisms for 100% collection
- Materiality of litigation

Moody's Finance Weighting

Factor 2: Finances (30%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Fund Balance as % of Revenues	> 30%	30% ≥ n > 15%	15% ≥ n > 5%	5% ≥ n > 0%	0% ≥ n > -2.5%	≤ -2.5%	10%
	> 25% for School Districts	25% ≥ n > 10% for SD	10% ≥ n > 2.5% for SD	2.5% ≥ n > 0% for SD	0% ≥ n > -2.5% for SD	≤ -2.5% for SD	
5-Year Dollar Change in Fund Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%
Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 5%	5% ≥ n > 0%	0% ≥ n > -2.5%	≤ -2.5%	10%
	> 10% for School Districts	10% ≥ n > 5% for SD	5% ≥ n > 2.5% for SD	2.5% ≥ n > 0% for SD	0% ≥ n > -2.5% for SD	≤ -2.5% for SD	
5-Year Dollar Change in Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%

Debt 1

- Measures of Debt Load
- Net Direct Debt
 - Add in capital leases/bank loans
 - Deduct self supporting(Revenue Bonds)
- Net Direct Debt to full value of property
 - Most accurate measure of what tax base will support in terms of debt
 - Under 1% to 2% for highest rated credits
 - Over 6% indicates high debt load(could indicate a growing community with infrastructure needs)

Debt 2

- Overlapping debt
 - Not always in control of issuer
 - Large issuer may have an impact
 - Indicates comprehensive burden on taxpayer
 - Also measured relative to full value etc.
- Debt as a percentage of the budget
 - 6 to 8% considered a modest load
- Debt Per Capita
 - Burden per person
 - Not always accurate(nuclear power plant)

Debt 3

- Debt pay down
 - Retirement of total P&I
 - Self amortization is a risk mitigant
 - 50% in 10 years considered good/70% and greater for AA+ and up
- Pay-go vs. debt
 - Additional revenue flexibility
 - 20 to 50% considered healthy

Debt 4

- Economic Debt
 - Unfunded Accrued Liability for Pensions
 - Added to debt load
 - ARC as a % of expenditures(3% to 6% acceptable)
 - Full funding of ARC
 - Frequency of actuarial valuations
 - Expected rate of return assumptions
 - Unfunded other post employment benefits(healthcare)
 - Same as pensions above
 - Capital leases and other off balance sheet financing
 - Bank Loans

Moody's Debt Weighting

Factor 4: Debt/Pensions (20%)

	Aaa	Aa	A	Baa	Ba	B & Below	We
Net Direct Debt / Full Value	< 0.75%	0.75% ≤ n < 1.75%	1.75% ≤ n < 4%	4% ≤ n < 10%	10% ≤ n < 15%	> 15%	5
Net Direct Debt / Operating Revenues	< 0.33x	0.33x ≤ n < 0.67x	0.67x ≤ n < 3x	3x ≤ n < 5x	5x ≤ n < 7x	> 7x	5
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value	< 0.9%	0.9% ≤ n < 2.1%	2.1% ≤ n < 4.8%	4.8% ≤ n < 12%	12% ≤ n < 18%	> 18%	5
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues	< 0.4x	0.4x ≤ n < 0.8x	0.8x ≤ n < 3.6x	3.6x ≤ n < 6x	6x ≤ n < 8.4x	> 8.4x	5

Economy 1

- Type of community (center, suburb, capital)
 - Major city with diverse tax base(services, retail, commercial)
 - Concentrated tax base/Cyclical Industries
 - Tourism based economy
 - Bedroom community with dependence on center city(head taxes)
 - Stability provided by university and or state capital
 - Stand alone rural community

Economy 2

- Population/Demographics
 - Rate of growth
 - Credit positive as new taxpayers and resultant businesses will follow
 - Potential negative because of demand for infrastructure
 - Aging populations indicating need for senior services/healthcare
 - Young families indicating need for schools, recreational services
 - Poverty rates, tax delinquency

Economy 3

- Workforce Composition
 - Professional
 - Manufacturing
 - Service
- Growth in jobs/labor
 - 5 year average
- Top ten employers
 - Number of jobs per employer
 - Diversity
 - Concentration Risk
- Economic Data
 - Building permits
 - Residential
 - Commercial
 - Retail

Economy 4

- Tax base
 - Average rate of growth over the past five years
 - Projected growth over 3 to 5 years
 - Frequency of valuation updates
 - Composition (commercial, residential, agriculture)
- Property tax rates
 - Competition with neighboring communities
 - Statutory limitations
 - Consistency over time
 - History of voter approval
- Top ten taxpayers
 - Diversity vs. concentration
 - Total should be 2 to 6% with no single taxpayer being greater than 10%

Economy 5

- Economic Data Continued
 - Commercial and retail vacancy rates
- Sale/excise tax growth tax rates
 - Relative to any statutory caps
 - Competitiveness relative to neighboring communities

Economy 6

- Housing
 - Single family home ownership
 - Quality of rental housing stock
 - Foreclosures
- Land Use
 - Zoning policies that encourage residential and commercial development
 - Availability of land/ industrial parks, subdivisions

Economy 7

- Median Family Income
 - Indication of ability to pay not necessarily willingness to pay(indicated by voter support for referenda)
 - Comparison to State and U.S.
- Unemployment Rates
 - Most recent measure
 - Adjusted for seasonal employment
 - Comparison to State and U.S.

Moody's Economy Weighting

Factor 1: Economy/Tax Base (30%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Tax Base Size: Full Value	> \$12B	\$12B ≥ n > \$1.4B	\$1.4B ≥ n > \$240M	\$240M ≥ n > \$120M	\$120M ≥ n > \$60M	≤ \$60M	10%
Full Value Per Capita	> \$150,000	\$150,000 ≥ n > \$65,000	\$65,000 ≥ n > \$35,000	\$35,000 ≥ n > \$20,000	\$20,000 ≥ n > \$10,000	≤ \$10,000	10%
Socioeconomic Indices: MFI	> 150% of US median	150% to 90% of US median	90% to 75% of US median	75% to 50% of US median	50% to 40% of US median	≤ 40% of US median	10%

MANAGEMENT PRACTICES

Relative Values of Best Practices in Fitch's Public Finance Ratings

<u>Best Practice</u>	<u>Value*</u>
Fund balance reserve policy/working capital reserves	Very Significant
Multiyear financial forecasting	Significant
Monthly or quarterly financial reporting and monitoring	Significant
Contingency planning policies	Influential
Policies regarding nonrecurring revenue	Influential
Debt affordability reviews and policies	Very Significant
Superior debt disclosure practices	Very Significant
Pay-as-you-go capital funding policies	Significant
Rapid debt retirement policies (greater than 65% in 10 years)	Significant
Five-year capital improvement plan integrating operating costs of new facilities	Influential
Financial reporting and budgeting awards	Influential

*Values in descending order of importance are: very significant, significant, and influential.

Worst Financial Management Practices for Governmental Issuers

- Cash basis accounting.
- Qualified audit opinion of material weakness.
- Deficit financing for two of past five years.
- Slow debt retirement (less than 35% in 10 years).
- Unfunded accrued pension liability (funding ratio less than 60%).
- Tax and revenue anticipation note amount growing significantly faster than annual spending.
- Debt restructuring that defers more than 35% of current debt service.
- Overreliance on nonrecurring revenue (for more than 15% of recurring expenses).
- Aggressive investment policy for operating funds.
- Pension contribution deferral in the current budget year.
- Budgetary impasse beyond legal completion date.

Moody's Top Ten

- Rainy Day Fund
- Economic and revenue review
- Budget contingency plan
- Formalized capital improvement plan
- Long term liability planning
- Debt affordability model
- Pay as you go strategy
- Multi year financial plan
- Management Information Systems
- Well coordinated economic development strategy

Standard and Poor's Six Critical Components

- Conservative Budgeting Techniques
- Fund Balance Policies
- Debt Planning
- Succession and contingency planning
- Strategic Planning and Economic Development
- Timely Disclosure

Moody's Management Weighting

Factor 3: Management (20%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Institutional Framework	Very strong legal ability to match resources with spending	Strong legal ability to match resources with spending	Moderate legal ability to match resources with spending	Limited legal ability to match resources with spending	Poor legal ability to match resources with spending	Very poor or no legal ability to match resources with spending	10%
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures	> 1.05x	1.05x ≥ n > 1.02x	1.02x ≥ n > 0.98x	0.98x ≥ n > 0.95x	0.95x ≥ n > 0.92x	≤ 0.92x	10%

Summary of Some Key Ratios

- Debt Related
 - Direct Debt to full value
 - Overlapping debt to FV
 - Debt Per Capita
 - Debt Pay down
 - Economic Debt to FV(Unfunded Pension liability)
 - Debt to Operating Revenues

Key Ratios 2

- Financial
 - Top Ten Taxpayers as a % of FV
 - Fund Balance as a % of Revs./Exp.
 - Top Revs and Expend as % of Budget
- Socioeconomic
 - Per Capita Income relative to State/ US
 - Median Family Income same as above
 - Poverty Rate

Moody's Medians

Exhibit 8

Medians by Rating - US Cities (All)

Selected Indicators	Aaa	Aa	A	Baa	Ba
Total General Funds Revenues (\$000s)	\$56,373	\$23,574	\$7,259	\$9,597	\$18,347
General Fund Balance as % of Revenues	39.0%	35.8%	32.4%	14.4%	6.9%
Available General Fund Balance as % of Revenues	36.5%	32.6%	28.5%	10.1%	6.1%
Direct Net Debt as % of Full Value	0.7%	1.0%	1.7%	2.8%	3.5%
Overall Debt Burden (Overall Net Debt as % of Full Value)	2.1%	2.4%	3.1%	3.9%	6.8%
Total Full Value (\$000s)	\$6,664,506	\$2,250,636	\$586,210	\$719,201	\$642,482
Population 2010 Census	38,659	21,193	8,562	12,072	23,148
Full Value Per Capita	\$178,701	\$98,501	\$60,744	\$50,158	\$43,568
Ten Largest Taxpayers as % of AV	7.5%	8.5%	11.9%	13.2%	10.6%

Source: Moody's Investors Service

Moody's Weighted Average Rating Scale

Indicated Rating	Overall Weighted Score
Aaa	0.5 to 1.5
Aa1	1.5 to 1.83
Aa2	1.83 to 2.17
Aa3	2.17 to 2.5
A1	2.5 to 2.83
A2	2.83 to 3.17
A3	3.17 to 3.5
Baa1	3.5 to 3.83
Baa2	3.83 to 4.17
Baa3	4.17 to 4.5
Ba1	4.5 to 4.83
Ba2	4.83 to 5.17
Ba3	5.17 to 5.5
B1	5.5 to 5.83
B2	5.83 to 6.17
B3 and below	6.17 to 6.5

Rating Scale

Bond Rating		Grade	Risk
Moody's	S&P/ Fitch		
Aaa	AAA	Investment	Highest Quality
Aa	AA	Investment	High Quality
A	A	Investment	Strong
Baa	BBB	Investment	Medium Grade
Ba, B	BB, B	Junk	Speculative
Caa/Ca/C	CCC/CC/C	Junk	Highly Speculative
C	D	Junk	In Default

- Moody's uses modifiers of 1,2,3 Fitch and S&P use + - or neutral

Outlook, watch

- Outlook
 - 12-24 mos.
 - Positive
 - Stable
 - Negative
- Watch
 - 1 to 6 mos.
 - Negative

The Research Report

STANDARD
& POOR'S

Global Credit Portal[®]
RatingsDirect[®]

Summary:

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Rationale

Outlook

Related Criteria And Research

RatingsDirect[®]

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Budgetary Performance

Government Framework

Financial Management

Financial Management Assessment: 'Good'

Economy

Debt And Liability Profile

Related Criteria And Research

FitchRatings

Public Finance

Public Power / U.S.

Ocala Electric System Revenue Fund

Revenue Bonds
Full Rating Report

Ratings

Outstanding Debt
\$1,495,000 Water and Sewer Bonds (Series 1990) AA
\$22,670,000 Water and Sewer Bonds (Series 2007A) AA
\$24,300,000 Utility Systems Bonds (Series 2005A) AA-
\$31,270,000 Utility Systems Bonds (Series 2005B) AA-
\$64,025,000 Utility Systems Bonds (Series 2007A) AA-
\$23,925,000 Utility Systems Bonds (Series 2007B) AA-
Total: \$147,685,000
Note: Water and Sewer bonds are senior to the utility system bonds.

Rating Outlook

Stable

Key Utility Statistics

Fiscal Year Ended 9/30/10	Retail
System Type	Electric
NERC Region	FRCC
No. of Customers	49,361
Annual Revenues (\$ MIL)	173.5
Sales Growth (%)	2.3
Debt Service Coverage (x)	6.70
Days Operating Cash	95
Equity/Capitalization (%)	67.9

Related Research

U.S. Public Power Peer Study — June 2011, June 20, 2011

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Key Rating Drivers

Strong Financial Metrics: The water, sewer, and electric systems have a record of strong financial performance in line with the respective rating category medians. The higher rating for the water and sewer bonds reflects that system's historically stronger operating and cash positions. The electric system maintains a tighter operating position, and has more cost exposure to the Florida Municipal Power Agency (FMPA), while still benefiting from a subordinate lien on water and sewer revenue.

Conservative Debt Profile: Ocala's debt levels are low and consist entirely of fixed-rate bonds. The relative stability of fixed-rate debt payments mitigates some exposure to potentially more volatile natural gas prices through FMPA's all-requirements project (ARP), of which Ocala is a large member.

Manageable Capital Needs: The utility's \$55 million capital improvement plan is modest, and expected to be funded without the issuance of additional debt.

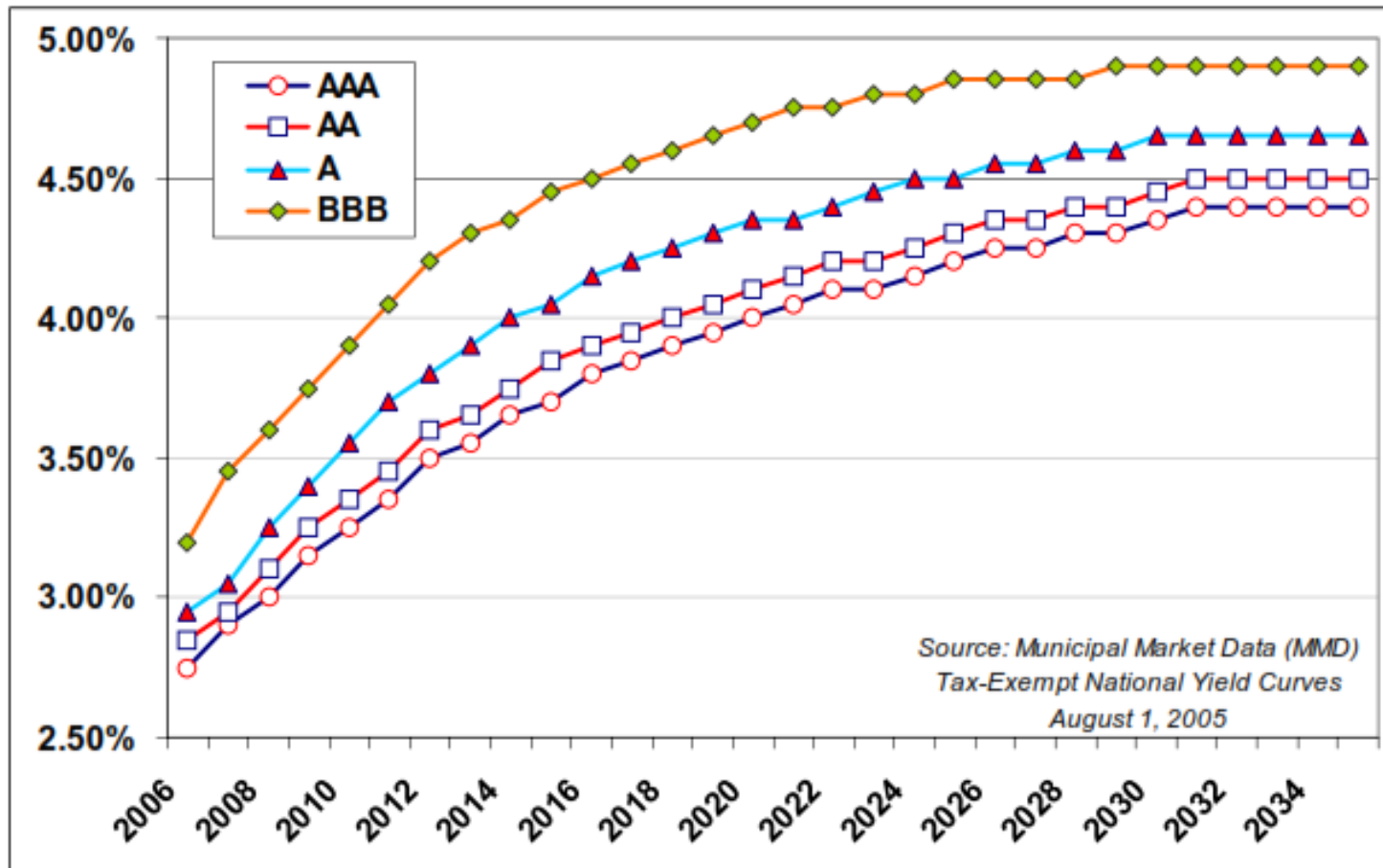
More Stable Rate Structure: Ocala is the second-largest participant in the ARP, and purchases nearly all of its power from FMPA. Like many Florida utilities, FMPA is exposed to natural gas price movement, which resulted in above-average costs to the members until 2009. Ocala's utility rates have since normalized below the Florida municipal average.

Service Area Pressure: The service area continues to suffer from a stagnant local economy, as Florida lags behind some other states in post-recession growth.

What Could Trigger a Rating Action

Weaker Financial Metrics: Failure to maintain strong financial metrics could result in downward rating pressure.

Impact of Ratings on Yields



Default Experience

- Great Depression 1935
 - ◉ Greatest single year default rate 1.8%
 - ◉ 95% recovery within 2 years
- Very low 10 year cumulative default rates
- Compare favorably to Corporate Bonds

Average Cumulative Default Rates, 1970-2011, Municipal vs. Corporates

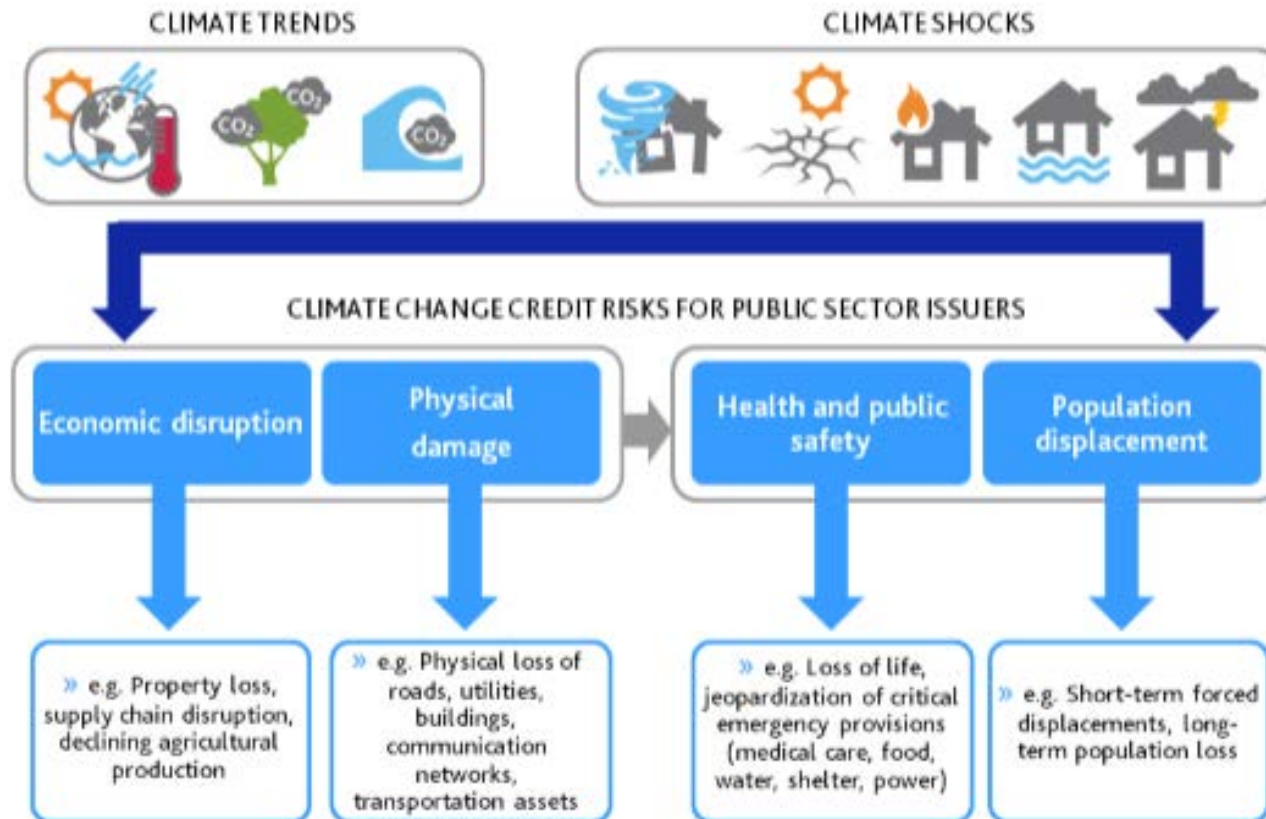
All Municipals

Rating	1	2	3	4	5	6	7	8	9	10
Aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Aa	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
A	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%	0.03%	0.04%	0.04%
Baa	0.01%	0.04%	0.07%	0.11%	0.14%	0.19%	0.24%	0.28%	0.33%	0.37%
Ba	0.28%	0.80%	1.32%	1.83%	2.29%	2.76%	3.26%	3.60%	3.82%	3.92%
B	3.21%	6.27%	9.18%	12.21%	15.20%	17.12%	18.19%	19.06%	20.15%	21.85%
Caa_C	9.17%	13.01%	15.39%	16.65%	17.58%	18.72%	20.15%	21.97%	23.68%	23.68%
Investment-Grade	0.00%	0.01%	0.02%	0.02%	0.03%	0.04%	0.05%	0.06%	0.07%	0.08%
Speculative-Grade	1.33%	2.47%	3.49%	4.45%	5.35%	6.08%	6.71%	7.19%	7.59%	7.94%
All Rated	0.01%	0.03%	0.04%	0.05%	0.07%	0.08%	0.09%	0.10%	0.12%	0.13%

Global Corporates

Rating	1	2	3	4	5	6	7	8	9	10
Aaa	0.00%	0.01%	0.01%	0.04%	0.10%	0.17%	0.24%	0.31%	0.39%	0.48%
Aa	0.02%	0.06%	0.13%	0.24%	0.35%	0.46%	0.57%	0.67%	0.76%	0.86%
A	0.06%	0.19%	0.39%	0.58%	0.80%	1.04%	1.30%	1.61%	1.93%	2.22%
Baa	0.18%	0.50%	0.91%	1.38%	1.89%	2.42%	2.92%	3.44%	4.03%	4.71%
Ba	1.12%	3.10%	5.44%	7.91%	10.15%	12.21%	14.02%	15.83%	17.67%	19.54%
B	4.25%	10.01%	15.73%	20.74%	25.27%	29.51%	33.50%	36.97%	40.16%	43.00%
Caa_C	17.32%	28.95%	38.27%	45.67%	51.97%	56.23%	59.21%	62.60%	66.22%	70.24%
Investment-Grade	0.09%	0.26%	0.49%	0.74%	1.02%	1.32%	1.61%	1.92%	2.26%	2.61%
Speculative-Grade	4.56%	9.35%	13.89%	17.87%	21.34%	24.35%	26.99%	29.37%	31.60%	33.69%
All Rated	1.61%	3.27%	4.82%	6.14%	7.26%	8.22%	9.04%	9.79%	10.50%	11.17%

Climate Change



INTERNATIONAL CONFERENCE ON MUNICIPAL FISCAL HEALTH

WORKSHOP: UNIVERSITY OF CHICAGO U.S. PUBLIC FINANCE WORKSHOP

11:15 AM – 12:15 PM, MAY 23, 2018



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