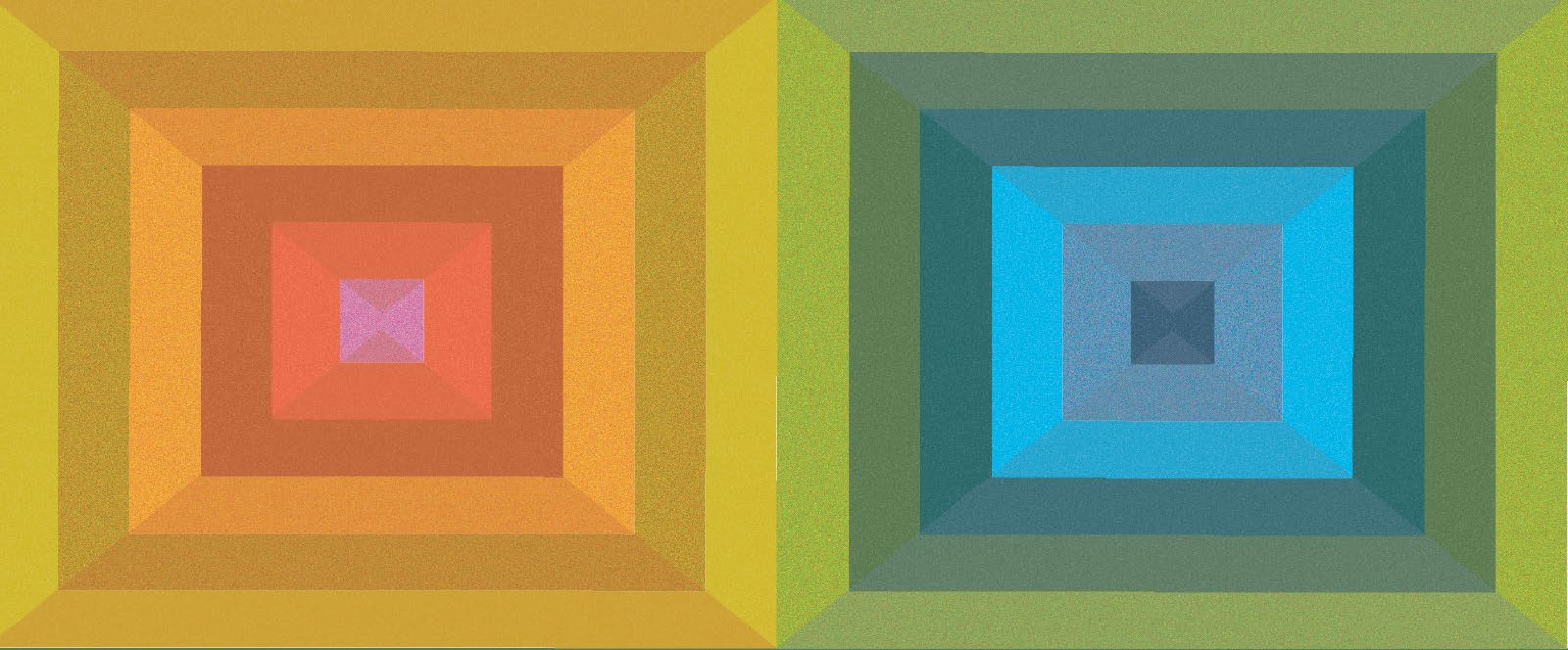

PRACTICAL ADAPTATIONS TO THE EVOLUTION OF CREDIT RATINGS

NOVEMBER 19, 2024

10:00AM – 11:30AM

HOUSEKEEPING

SLIDES
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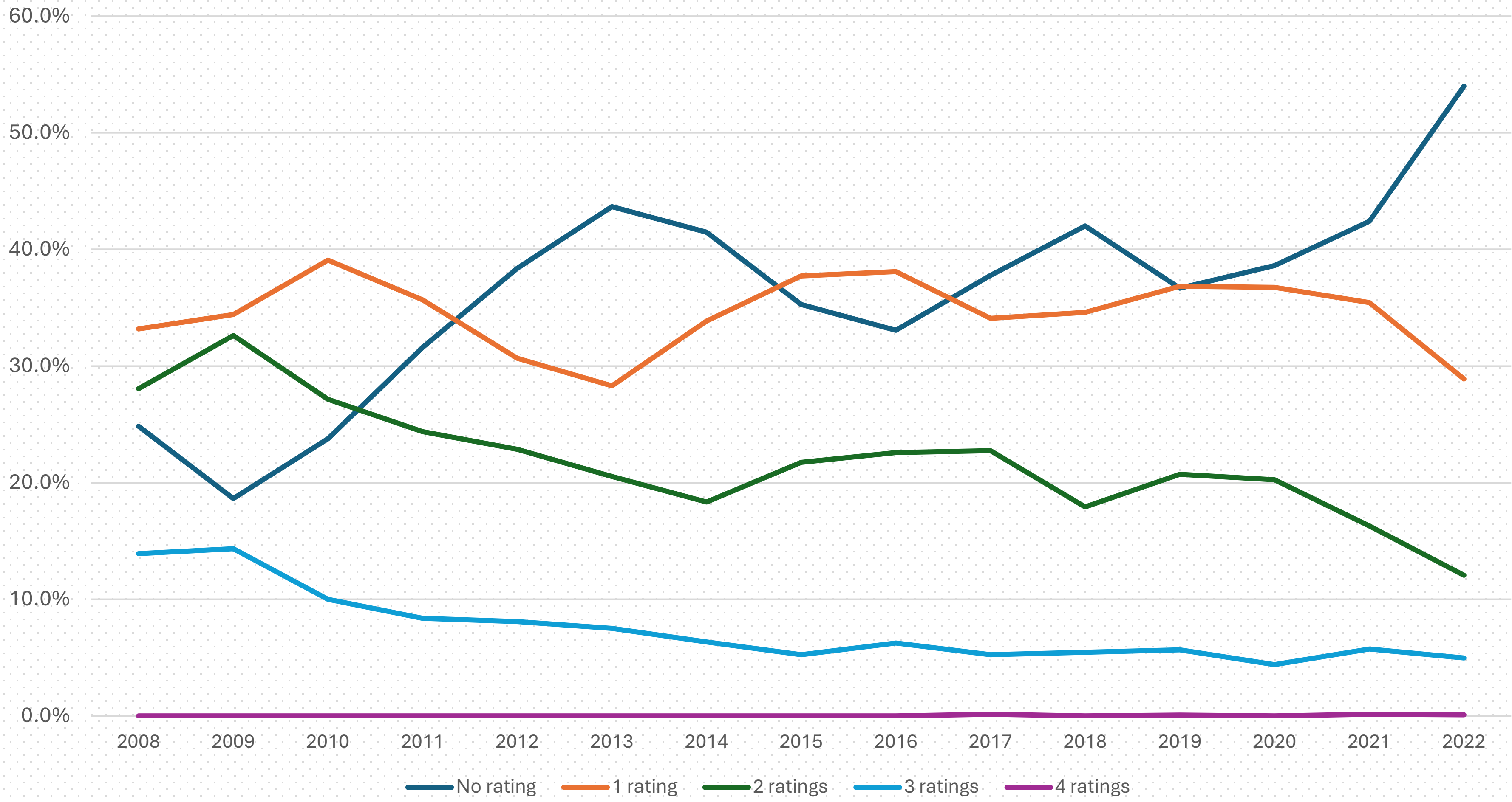
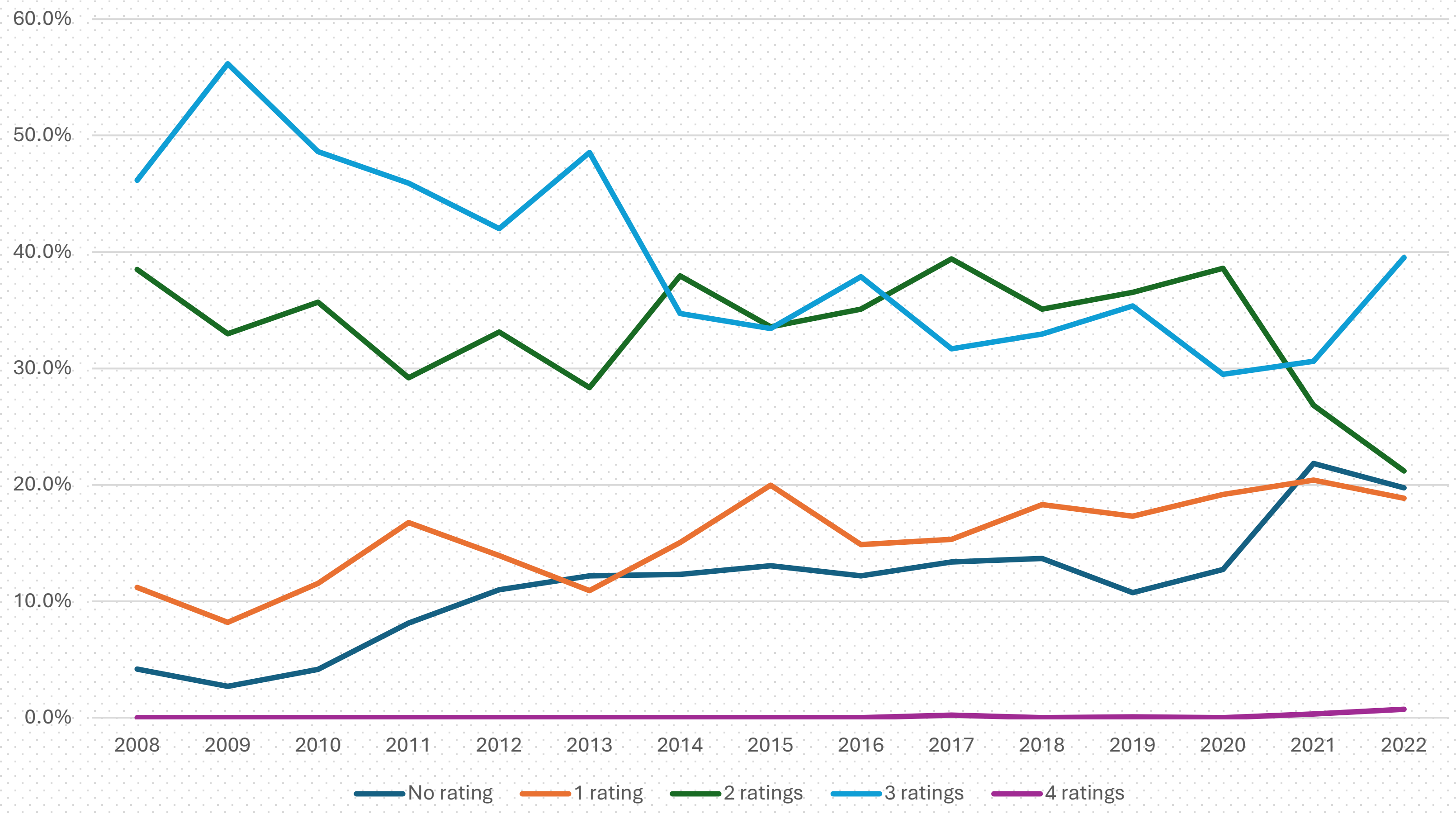
CREDIT RATING TRENDS

Percentage of Debt Transactions By Number Of Credit Ratings



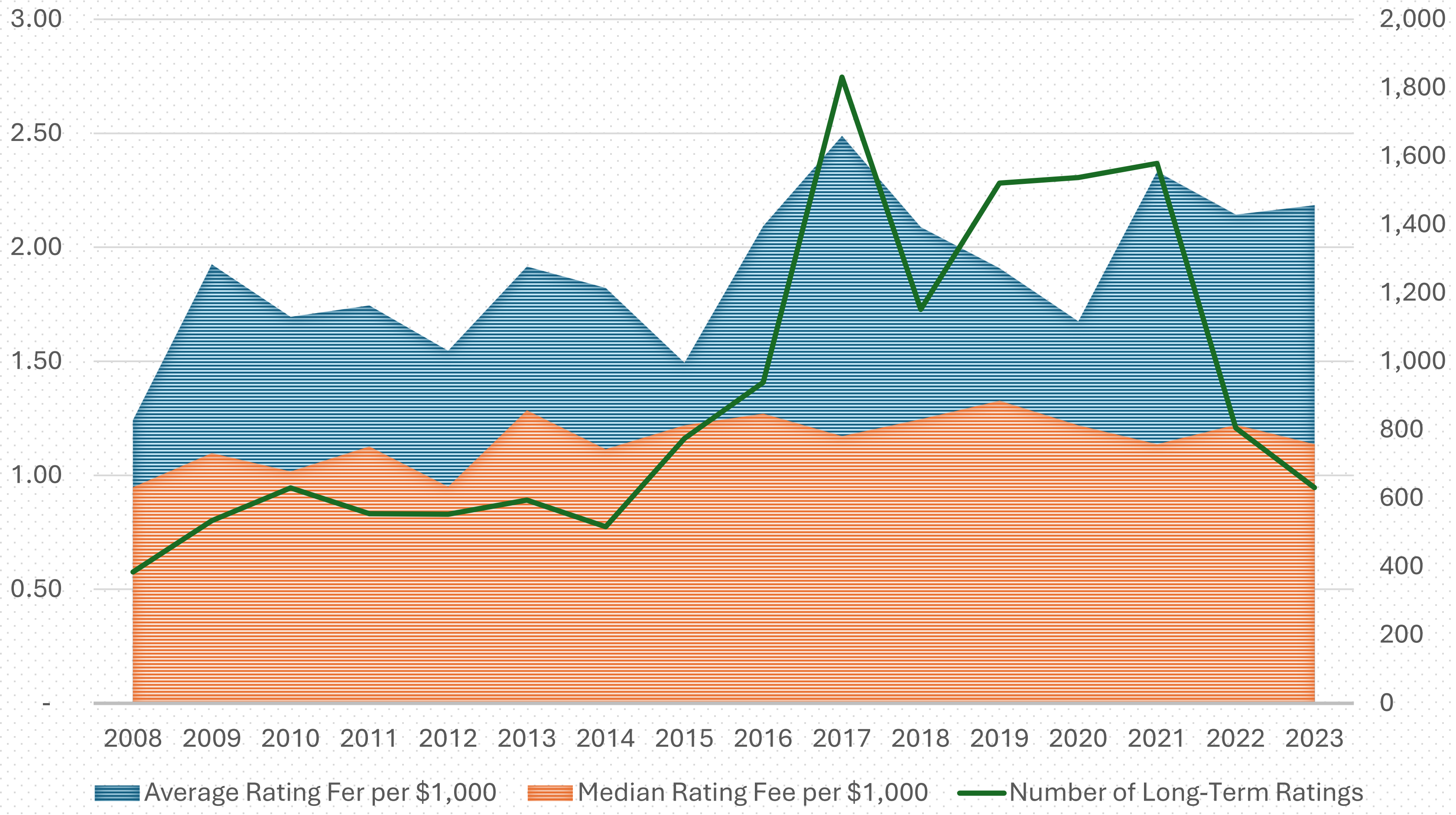
Data Source: CDIAC DebtWatch Database, Issues between 01/01/2008 – 12/31/2022

Percentage of Debt Volume by Number of Credit Ratings



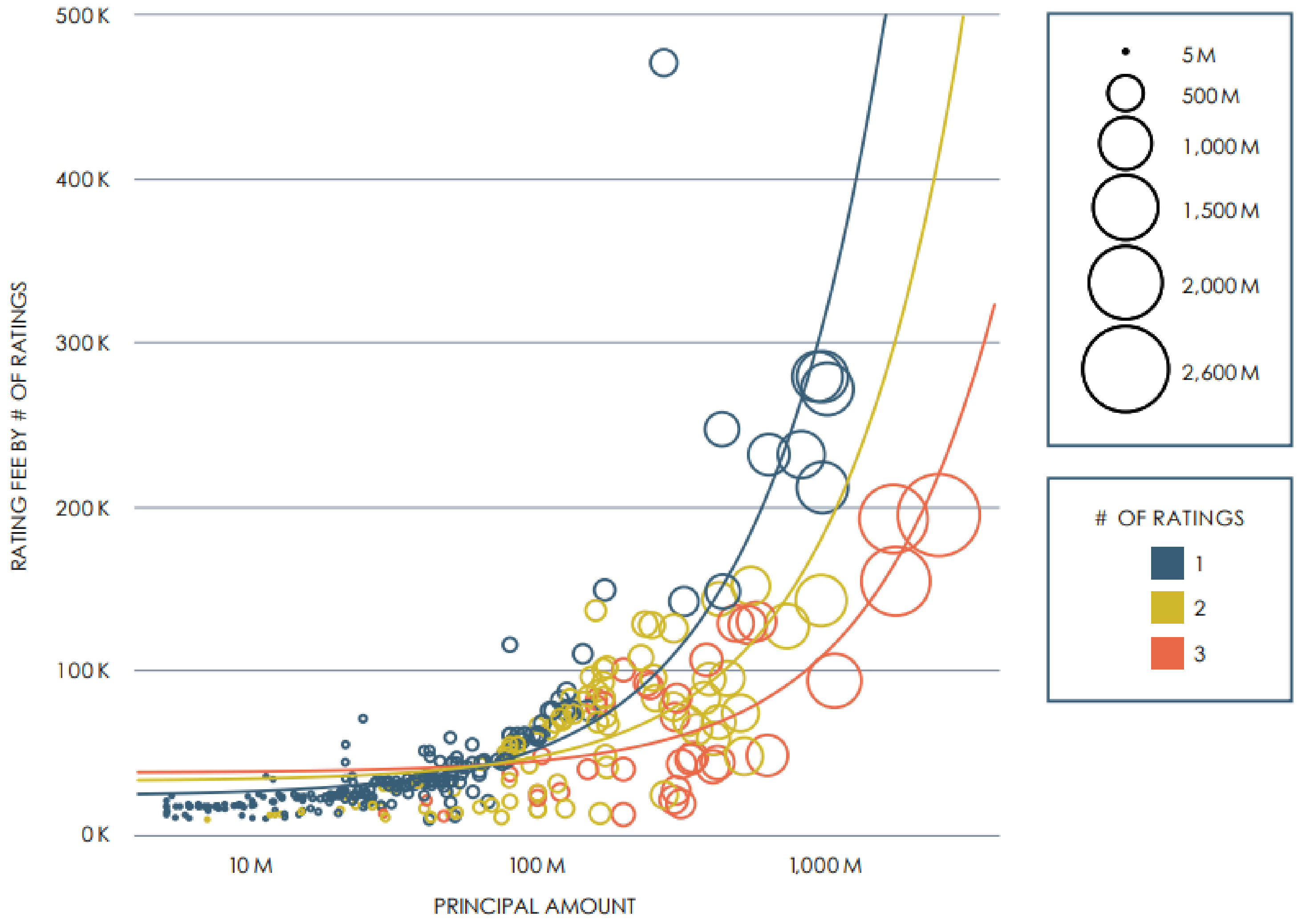
Data Source: CDIAC DebtWatch Database, Issues between 01/01/2008 – 12/31/2022

Average & Median Credit Rating Cost per $1,000 Par Amount



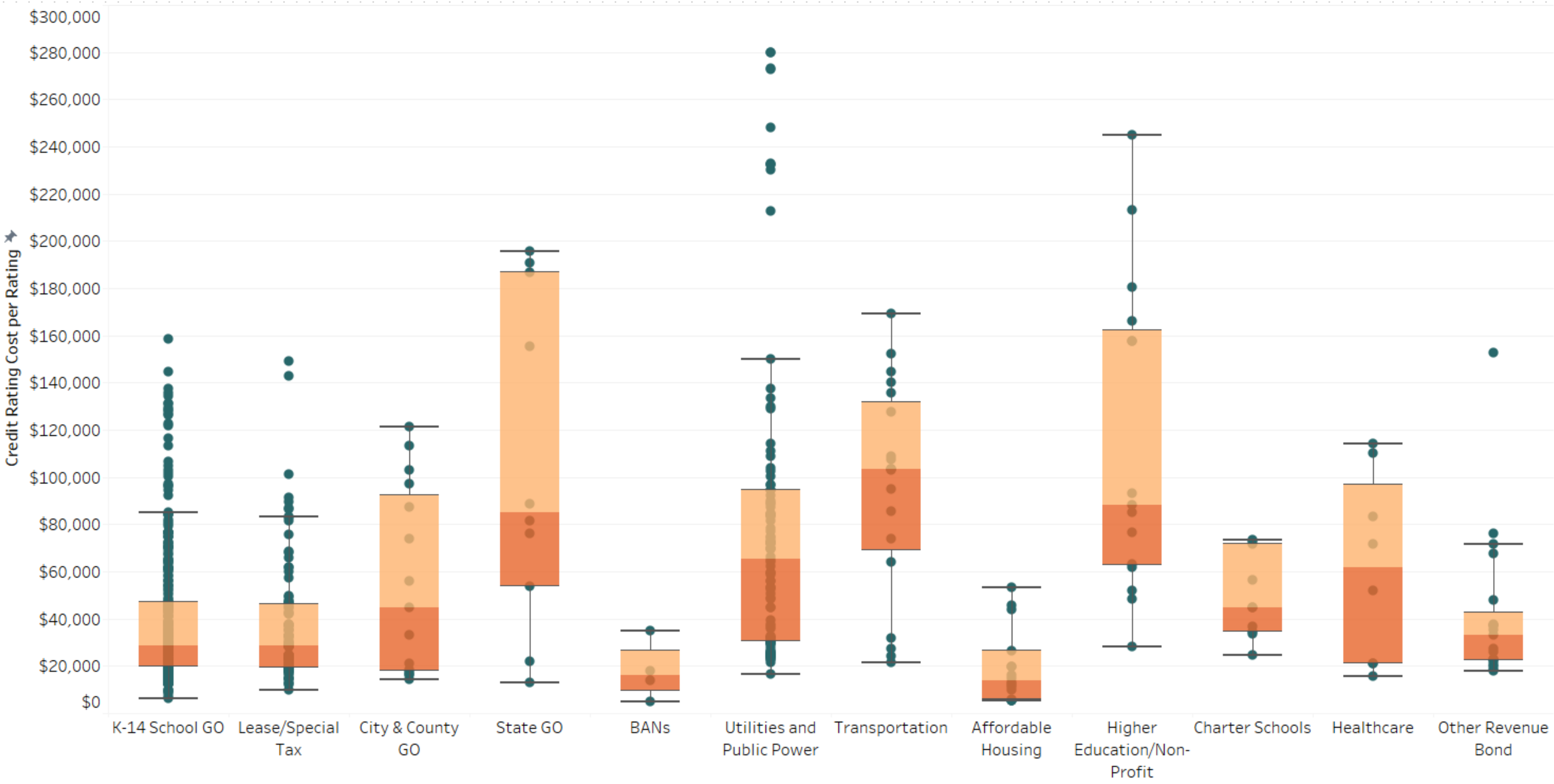
Data Source: CDIAC DebtWatch, Issues with one rating between 01/01/2008 – 12/31/2023

Credit Rating Cost Per Rating By Par Amount



Data Source: CDIAC DebtWatch, Issues between 01/01/2023 – 12/31/2023

Credit Rating Cost per Rating by Debt Type/Sector



Data Source: CDIAC DebtWatch Database, Issues between 07/01/2022 – 6/30/2024

[CDIAC Credit Rating Cost Interactive Tool]

Summary

- **2008 – 2022** 63% of issues had one or more rating. Unrated borrowings more than doubled. Percentage of multiple-rating issues has been declining.
- **2008 – 2022** Unrated borrowing volume has grown significantly. Percentage of single-rating volume has almost doubled. Multiple-rating volume has shown significant decline.
- **2008 – 2023** Median and average credit ratings fees per $1,000 issued for single rating issues rose by 1.2% and 3.8%, respectively.
- **2023** Fees per rating for multiple-ratings issues increase less rapidly as principal increases with more variability of costs per rating for issues over $100 million.
- **7/2022 – 6/2024** Some issuance sectors (K-14 GO) have very wide ranges of cost per rating with many outliers under the $100 million principal level.

SPEAKER INTRODUCTIONS

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Schwab Asset Management

ERIC HOFFMANN

Associate Managing Director
Moody's Ratings

DEBRA WAGNER SAUNDERS

Consultant
BondLink,
U.S. Department of Energy

Historic and Regulatory Perspective

- Value to investors
- Regulatory framework
- The role of criteria
- Recent criteria changes
- Sources of information
  - Official Statement
  - Annual Comprehensive Financial Report (ACFR)
  - Census and other third-party data sources

Picking Apart Recent Changes

- Changes in methodology
- The scorecard
- Issuer ratings and security ratings
- Factors/subfactors
- Quantitative vs. qualitative
- Notching/outlying information

Perspective From The Buy Side

- Types of municipal bond investors
- Internal ratings vs. public ratings
- How investors use ratings to decide what to purchase and pricing
- How analysts use public ratings
- Primary vs. secondary market - how secondary market liquidity impacts pricing in the primary market

Approaching Rating Agencies: What To Expect

- What has changed
- Criteria-driven rating changes
- Rating agency presentation
- Transparency – more public information
- What tools have been developed and what's publicly available for issuers?

Arriving at the Issuer Rating – Step 1

Scorecard Factors

Step 1

Economy

- Resident Income 10%
- Full Value Per Capita 10%
- Economic Growth 10%

Institutional Framework

- Assesses the control governments have over their revenues and expenditures, and what limitations are placed on that flexibility 10%

Financial Performance

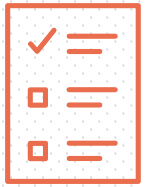
- Available Fund Balance Ratio 20%
- Liquidity Ratio 10%

Leverage

- Long-term Liabilities Ratio 20%
- Fixed-Costs Ratio 10%

Arriving at the Issuer Rating – Step 2

Notching Factors



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

City & County Methodology (City Of ABC)

	WEIGHTS	INPUT	SCORE	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Economy											
Resident Income (MHI Adjusted for RPP / US MHI)	10.0%	81.0%	0.74	>=120%	100 - 120%	80 - 100%	65 - 80%	50 - 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	Aaa	Aa	A	Baa	Ba	B	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, El Paso (City of) TX's financial statements and Moody's Investors Service

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 3

Other Considerations

Step 3

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

- Fund-specific financial considerations
- Competitive enterprise risk in governmental or business-type 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 U.S. Native American Tribal Nations
- Additional metrics

The New Framework – Moody's Example

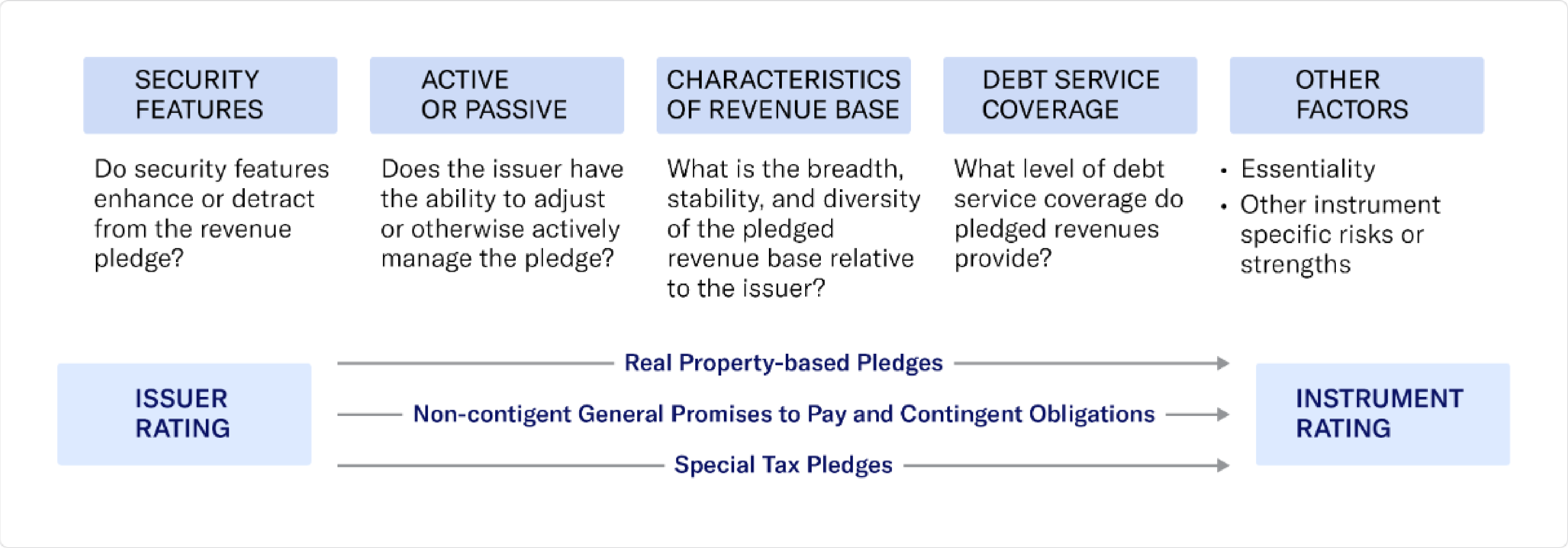
- Inputs plus notching process: quantitative plus qualitative
- The issuer credit rating - scorecard factors and subfactors
  - Economic/demographic
  - Governance
    - Management
    - Institutional framework
  - Financial information
  - Debt/leverage
    - Debt structure
    - Public borrowing vs. private loans
    - Unfunded pension liabilities
    - OPEB/Others
      - Discretionary vs. contractual

Security-Specific Ratings

- Relationship between issuer rating and security rating
- Do changes in security features impact rating?
- Security features, reserves, remedies, covenants coverage, etc.
- Bond insurance

Security-Specific Ratings cont. 2 of 2

- Security ratings are notched from the issuer rating
- Typically, just +1 to -2 notches



Source: Moody's Ratings

Communicating with the Rating Agencies

- Business side vs. analytical side
- How many ratings
- Number of ratings, preference for which?
- Ingredients for a great rating and rating presentation
    - Value in = value out

QUESTIONS?

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THANK YOU

Please complete the survey immediately after the conclusion of this webinar.

UPCOMING EVENTS

Advanced Public Funds Investing: The Analytics of Investment Selection
January 22–23, 2025 | Costa Mesa, CA

Municipal Market Disclosure
April 8–9, 2025 | Costa Mesa, CA

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