# TFLEX Workshop

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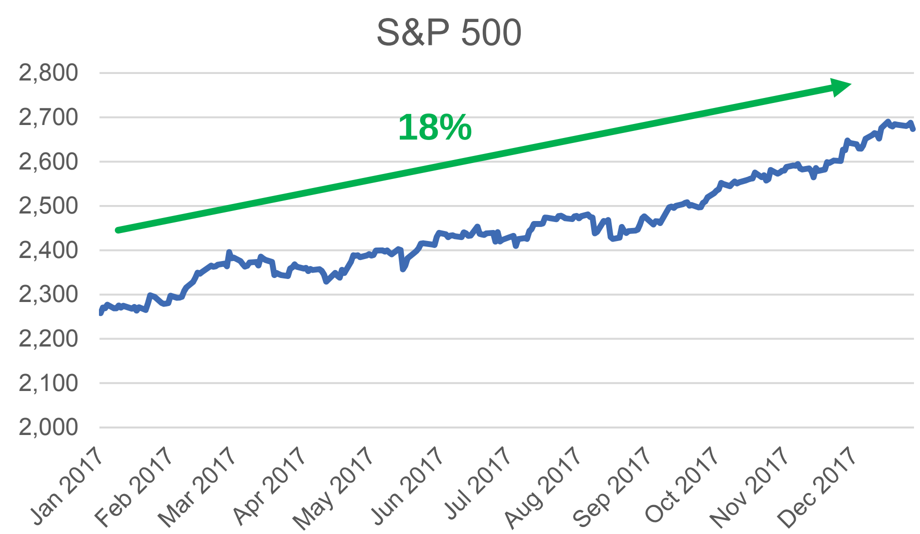
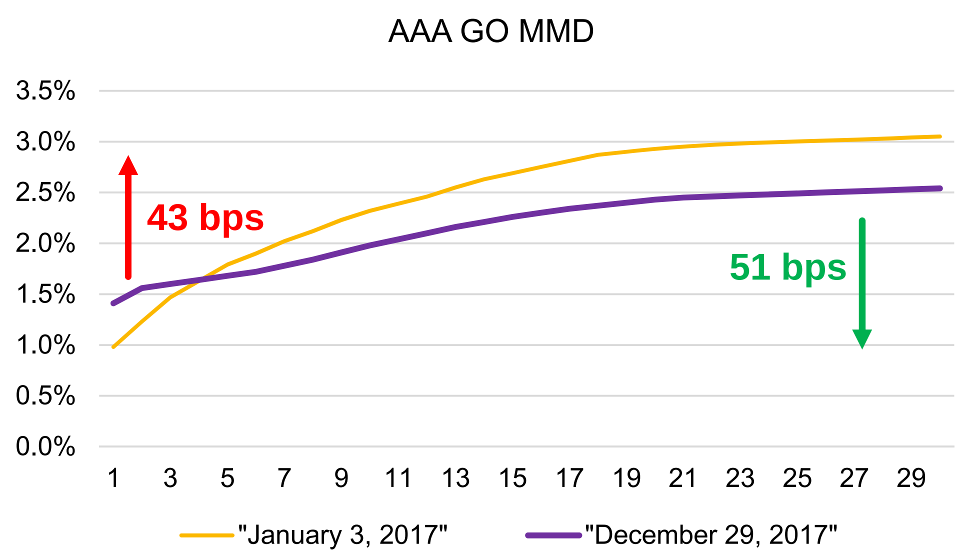
## 2017 In Review

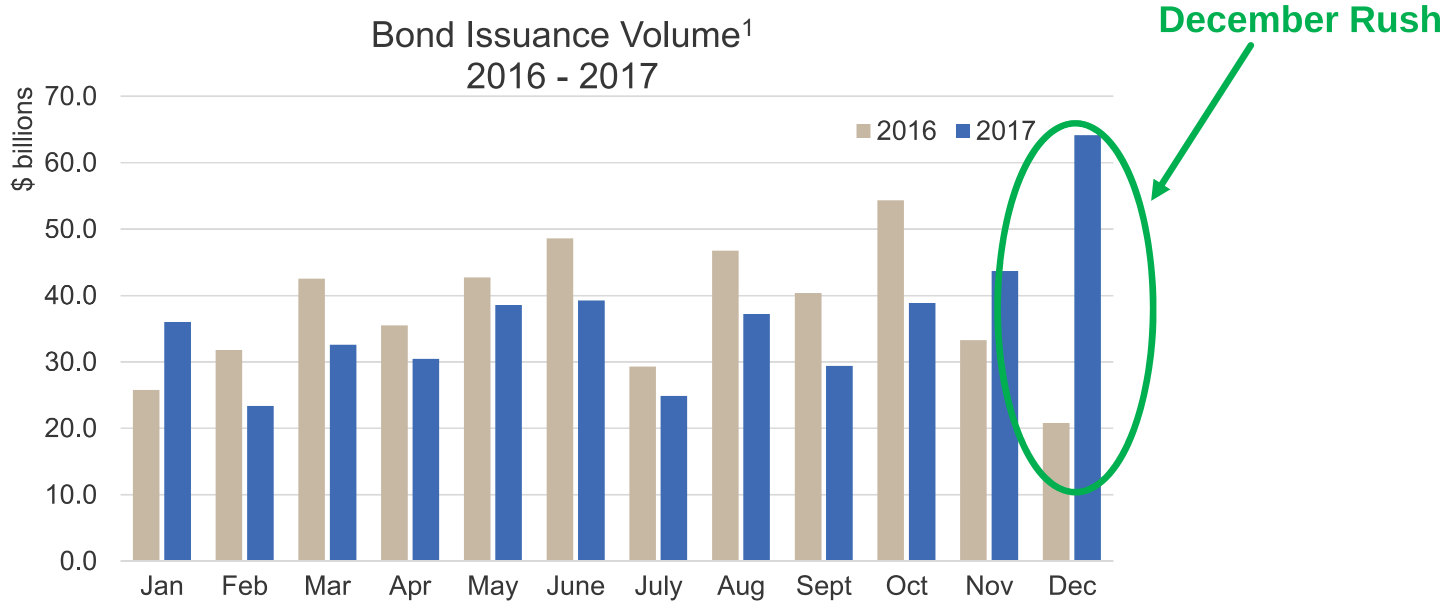
- Strong equity market performance – S&P 500 up 18%
- Tax-exempt rates remained low with Fed actions elevating short-term rates
- Passage of the Tax Cuts and Jobs Act
  - Material changes to municipal market
  - Tremendous rate volatility in the last quarter of the year
  - Surge in issuance resulting in record issuance in December of $60 billion



# Late 2017, December in Particular, Was a Historic Time

- With the threat of the elimination of both tax-exempt PABs and advance refundings, the municipal market saw a rush of volume in December
  - $64.1 billion in December (1,194 transactions) – a new record
    - 3x higher than December 2016
    - Previous monthly issuance record: $54.7 billion (December, 1985)



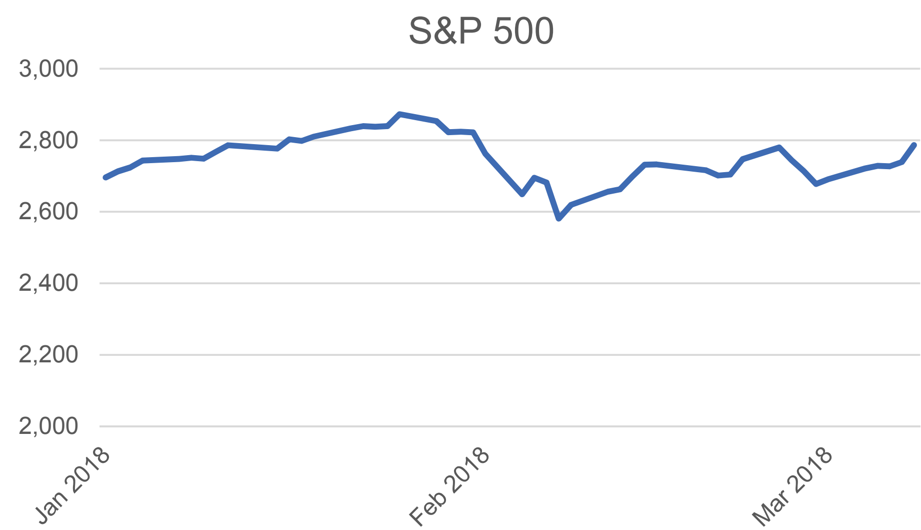

- Events of Q4 2017 set the stage for 2018

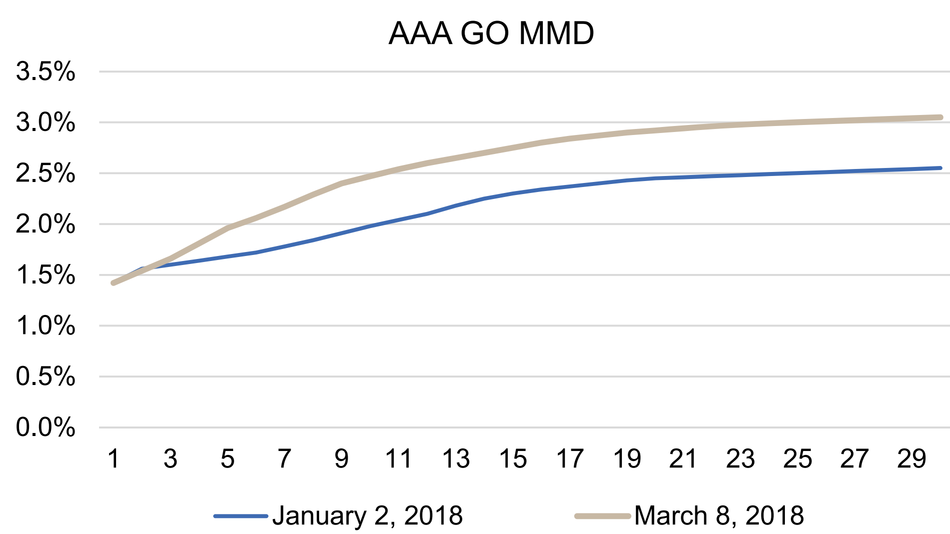


1. Source: Thomson-Reuters

# 2018 Has Begun with a Slightly Weaker Tone for Municipals

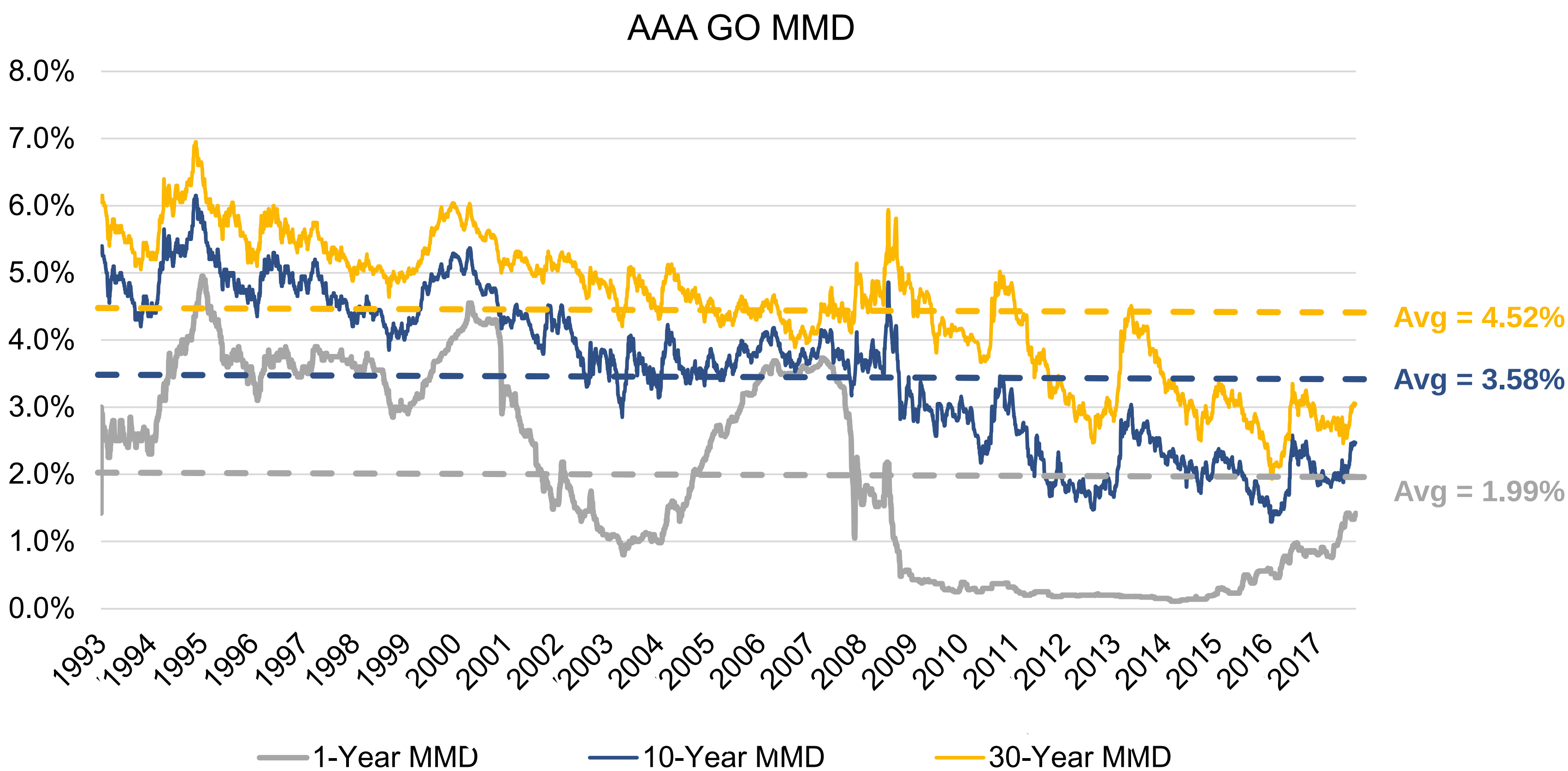
- Macro
  - Continued global recovery and economic growth
  - Fed Chief Powell's hawkish tone indicates 4 rate hikes a possibility
  - Volatility in the market as rallies extended
- Munis have weakened but controlled by favorable supply/demand dynamics
  - Dealer inventories at 4-year highs
  - Demand reduced due to Tax Reform but still sufficient
  - Limited primary market supply



## Keeping Interest Rates In Perspective

- In spite of increasing tax-exempt rates, context is important
- Rates are still, for the most part, at the lower end of historical ranges

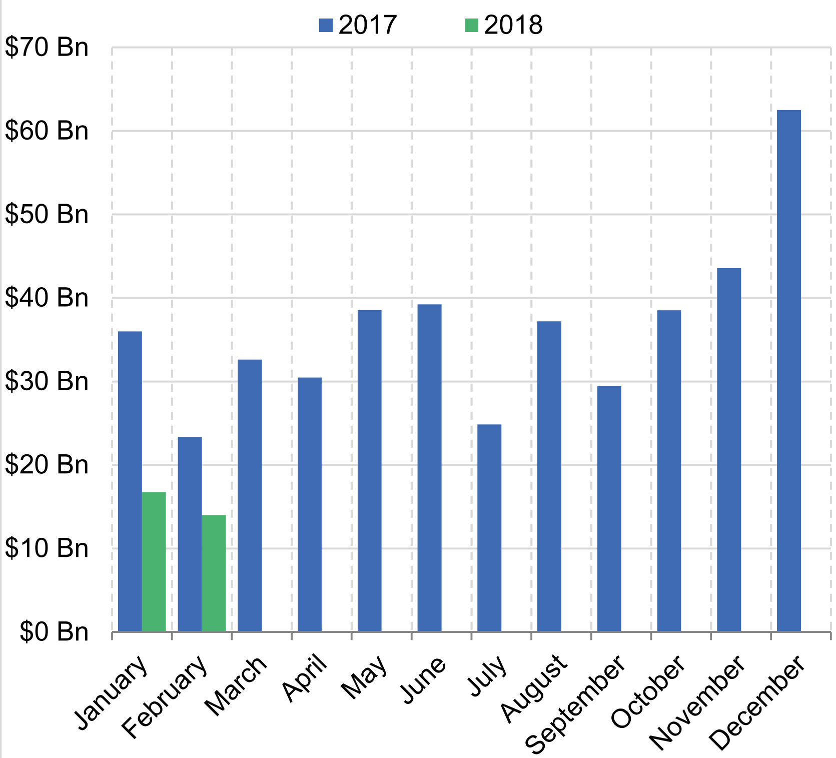


# Municipal Market Supply and Demand

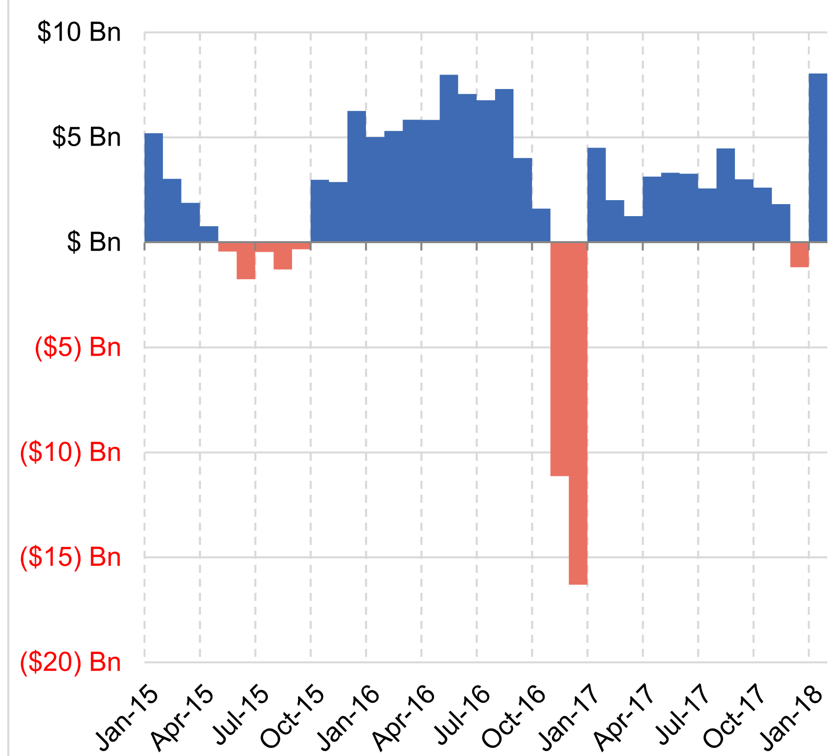
- Municipal bond issuance hit an 18-year low in February, down 35% year-over-year, while cash continues to flow into municipal bond funds

**Recent Issuance Volume and Municipal Fund Flows**

**Overall Municipal Market Volume**

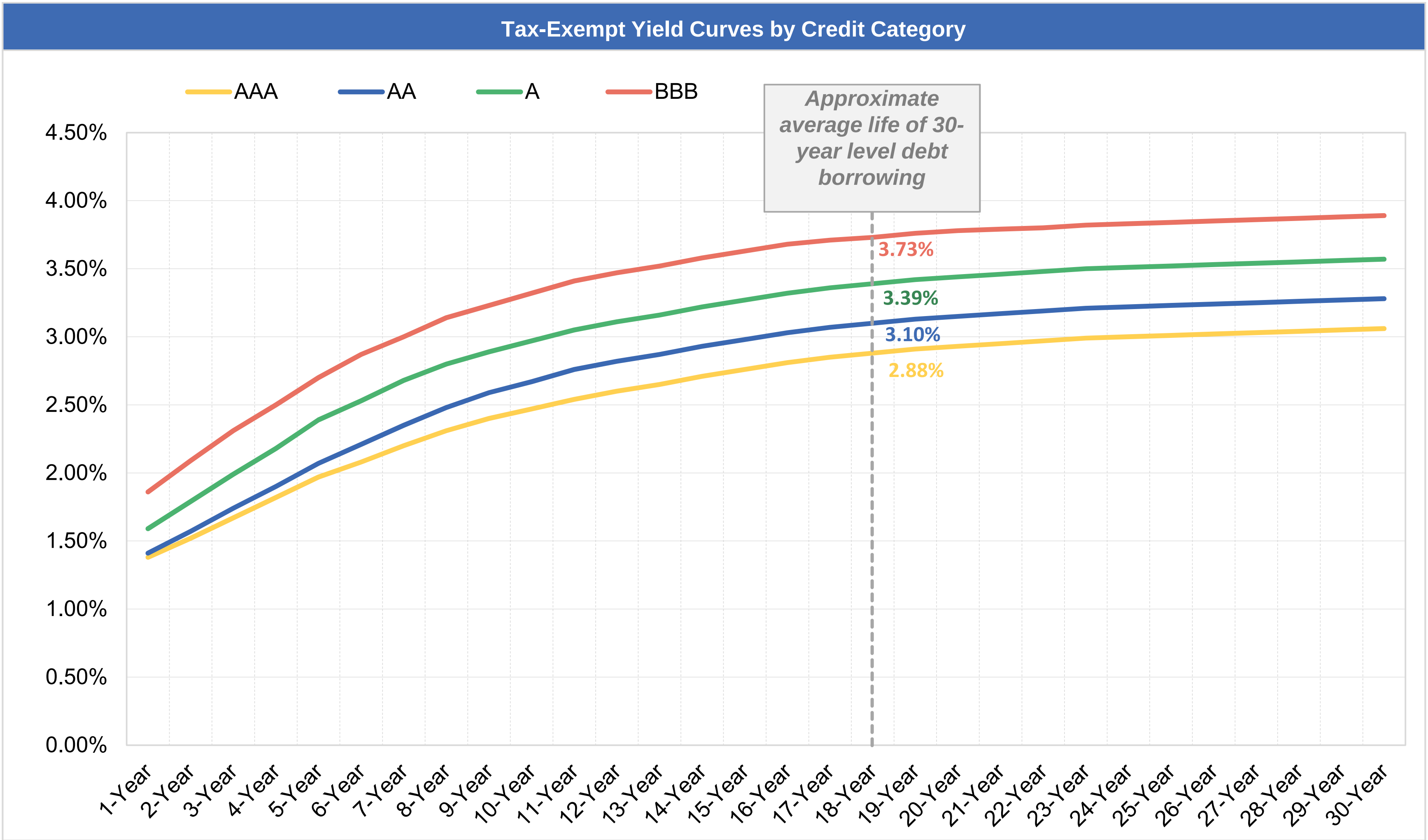



**Municipal Fund Flows**

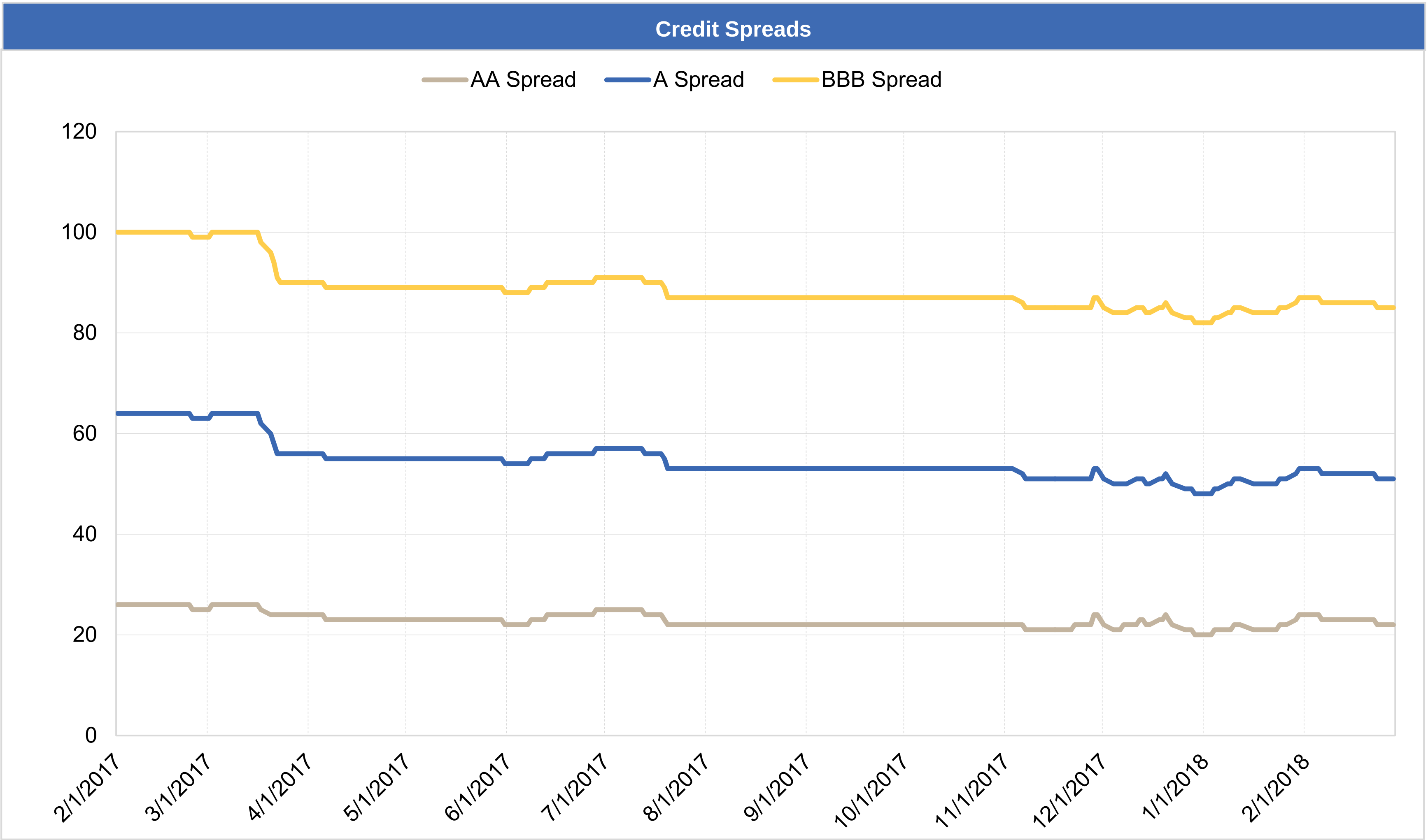



*Source: Bond Buyer; Investment Company Institute*

## Current Credit Spreads



# Credit Spreads Over the Past Year



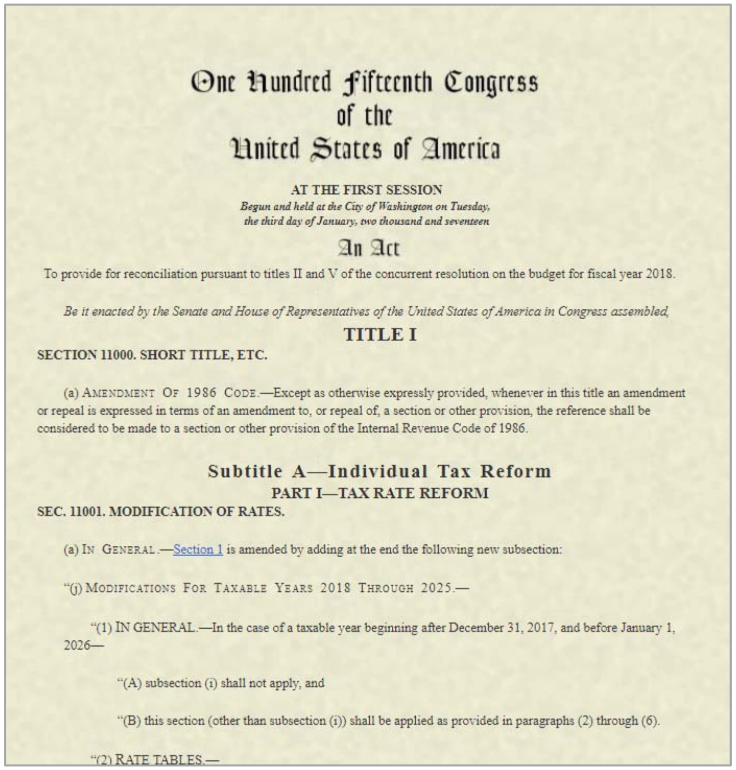
# Tax Reform

## Timeline of Tax Reform

| Date | Event |
|---|---|
| Nov 2 | HR1 Introduced in House |
| Nov 9 | House Ways and Means Committee concludes mark up process, reports Amended Bill out of Committee - Senate releases its version |
| Nov 13 | Senate Finance Committee begins markup process |
| Nov 16 | Full House passes HR 1 by a margin of 227-205<br><br>Senate Finance Committee concludes mark up process, reports amended Bill out of Committee |
| Dec 4 | Reconciliation process begins to resolve differences between House and Senate versions of the Bills |
| Dec 15 - Dec 19 | Reconciliation Committee releases final Bill<br><br>House passes Bill 227-203<br>Senate passes Bill 51-48 |
| Dec 22 | President Trump signs the Tax Reform and Jobs Act into law |

## Municipal Bond Market Impacts of Tax Cuts & Jobs Act of 2017

- Tax reform legislation impacting municipal bonds was effective starting January 1, 2018
  - Eliminated tax-exempt advance refundings
  - Eliminated new tax credit bonds
  - Lower corporate tax rates could change demand patterns for municipal bonds
  - Change to SALT deductions could increase appetite for munis from high-net worth investors in high-tax states



One Hundred Fifteenth Congress
of the
United States of America

AT THE FIRST SESSION

*Begun and held at the City of Washington on Tuesday, the third day of January, two thousand and seventeen*

An Act

To provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

TITLE I

SECTION 11000. SHORT TITLE, ETC.

(a) AMENDMENT OF 1986 CODE.—Except as otherwise expressly provided, whenever in this title an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Internal Revenue Code of 1986.

Subtitle A—Individual Tax Reform

PART I—TAX RATE REFORM

SEC. 11001. MODIFICATION OF RATES.

(a) IN GENERAL.—Section 1 is amended by adding at the end the following new subsection:

"(j) MODIFICATIONS FOR TAXABLE YEARS 2018 THROUGH 2025.—

"(1) IN GENERAL.—In the case of a taxable year beginning after December 31, 2017, and before January 1, 2026—

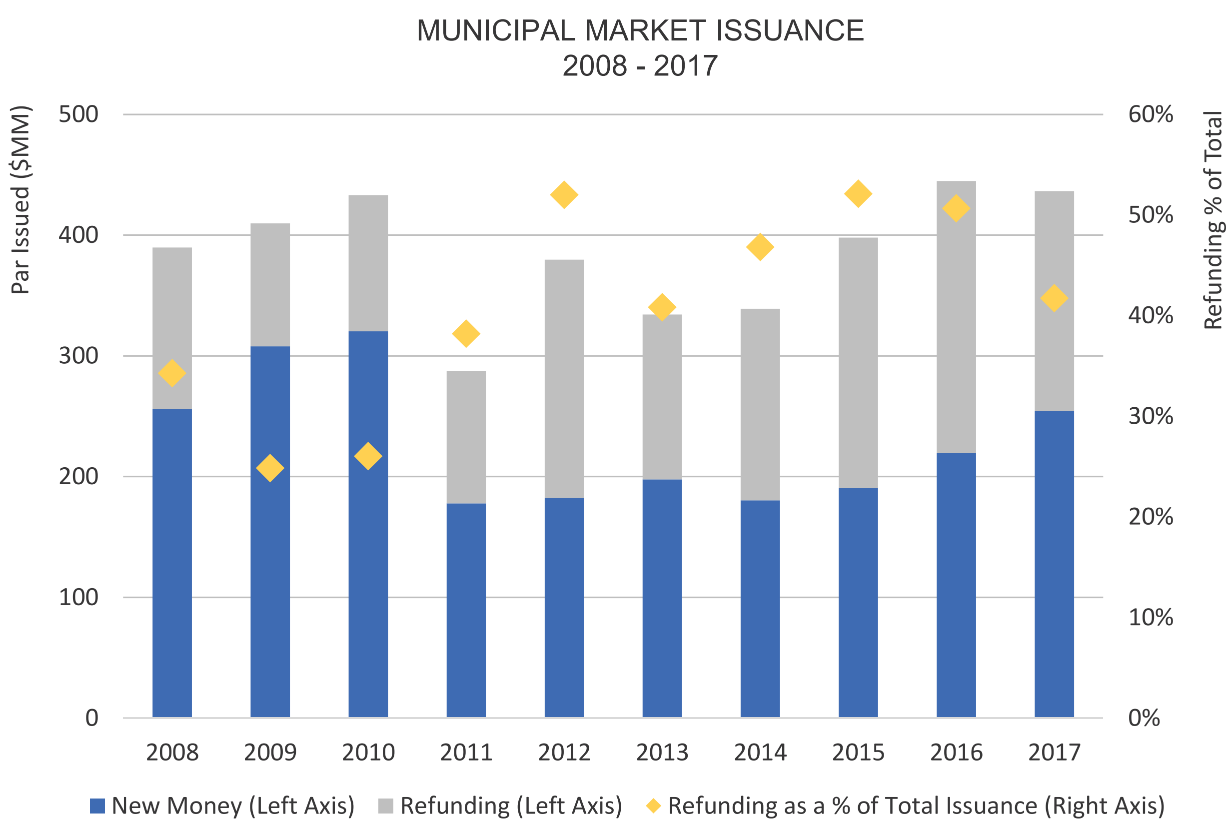
"(A) subsection (i) shall not apply, and

"(B) this section (other than subsection (i)) shall be applied as provided in paragraphs (2) through (6).

"(2) RATE TABLES.—

## Refundings in the Municipal Market

- Total refunding volume since the Great Recession has ranged from 30% – 50% of the total municipal market.
- Total advance refunding volume in in this time period ranged from 13% - 22% of the market.
- Many predict reduction in tax-exempt market volume of 10% - 15% in the coming years due to the loss of tax-exempt advance refundings and those refundings accelerated at the end of 2017
- The popularity of non-callable BABs from 2008 – 2010 will also reduce refunding activity




SOURCE: Ipreo

# 2018 Outlook for the Municipal Market

## Potential Themes for the Municipal Market in 2018

- Higher interest rates and a flatter yield curve
  - Better short-term investment returns
  - Historically low long-term interest rates

- Demand for munis will likely remain sufficient but volatile
  - Lack of supply may offset demand reductions
  - Watch carefully for changes to the supply/demand ratio

- Debt structures will change
  - Non-traditional debt structures providing added future flexibility
  - Potential reduction in the use of direct purchase market

- The need to think and plan strategically is critical
  - Federal and state funding more competitive
  - Preparing for delays in the receipt of Federal funds
  - Increased focus on Public-Private-Partnerships

## Interest Rate Forecasts

- Market participants continue to call for an increase in interest rates

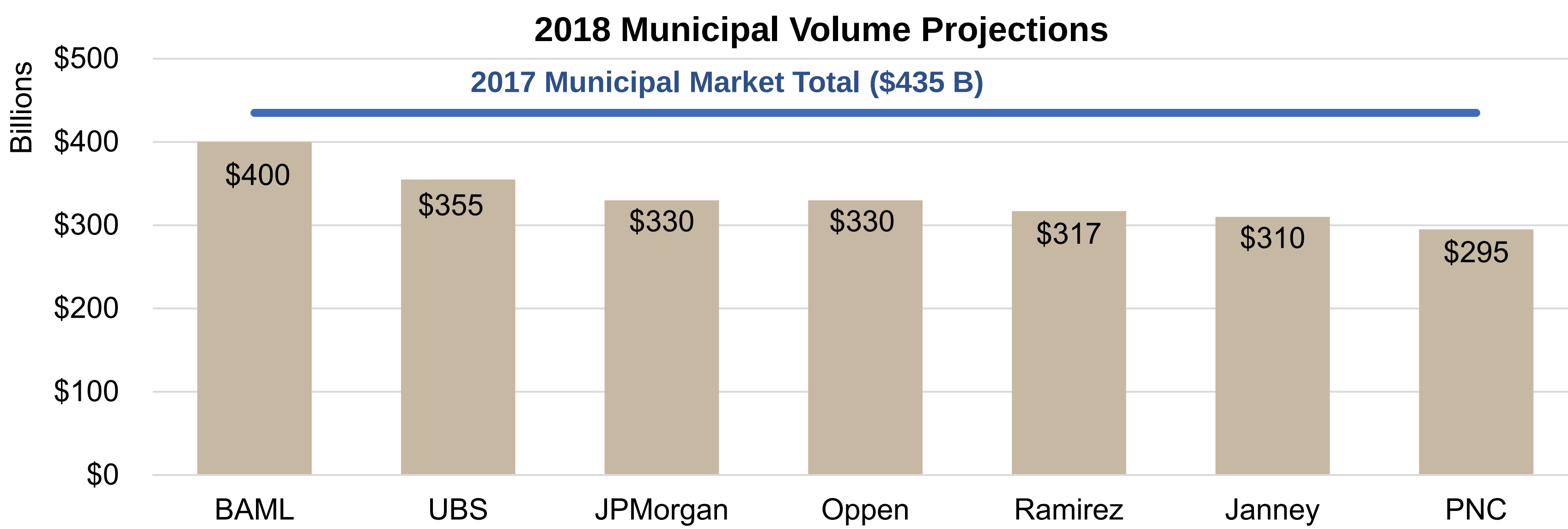
| The Street's Interest Rate Forecast[1] (As of February 28, 2018) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Average Forecasts** | **3/2/2018** | **Q1 18** | **Q2 18** | **Q3 18** | **Q4 18** | **Q1 19** | **Q2 19** |
| **30-Year UST** | 3.13% | 3.09% | 3.18% | 3.29% | 3.40% | 3.48% | 3.59% |
| **10-Year UST** | 2.86% | 2.83% | 2.87% | 2.95% | 3.04% | 3.14% | 3.27% |
| **2-Year UST** | 2.24% | 2.22% | 2.31% | 2.44% | 2.58% | 2.71% | 2.82% |
| **3M LIBOR** | 2.03% | 1.90% | 2.07% | 2.25% | 2.42% | 2.54% | 2.64% |
| **Fed Funds Target (Upper)** | 1.50% | 1.75% | 1.95% | 2.15% | 2.35% | 2.50% | 2.65% |
| **Fed Funds Target (Lower)** | 1.25% | 1.49% | 1.72% | 1.92% | 2.10% | 2.26% | 2.39% |

| J.P. Morgan Municipal Interest Rate Forecast[2] (As of March 2, 2018) | | | | | |
|---|---|---|---|---|---|
| | **3/2/2018** | **Q1 18** | **Q2 18** | **Q3 18** | **Q4 18** |
| **2-Year AAA MMD** | 1.51% | 1.60% | 1.85% | 2.00% | 2.10% |
| **5-Year AAA MMD** | 1.96% | 1.95% | 2.05% | 2.20% | 2.20% |
| **10-Year AAA MMD** | 2.45% | 2.40% | 2.40% | 2.55% | 2.60% |
| **30-Year AAA MMD** | 3.03% | 2.90% | 2.95% | 3.10% | 3.05% |

*Source: (1) Bloomberg, (2) J.P. Morgan*

## Depressed Volume Will Assist in Containing Long-Term Interest Rates

- Lower volume as the market adapts to tax reform and experiences potentially higher rates
  - Projections range from $270 to $400 billion
- Longer term yields will remain below historical averages
  - Supply/demand dynamics in general appear to favor issuers
- A flatter yield curve (flattest in the last decade) could reduce the cost of long-term borrowing






*SOURCE: Municipal Market Data & Bond Buyer*

# Post-Tax Reform Issuance Strategies and Structures

- There are numerous tools and strategies available to take advantage of low interest rates levels prior to the current refunding date. These include:
  - Taxable advance refundings
  - Forward delivery bonds
  - Tenders
  - “Cinderella” structures (taxable bonds beyond current period, tax-exempt bonds at current call date)
  - Synthetic advance refundings (e.g., forward delivery, cash settle swaps)
- New Money bonds may also be issued with a variety of different features to allow for more flexible redemption options in the absence of the ability to advance refund newly issued bonds on a tax-exempt basis:
  - Variable rate bonds and other short-term instruments with flexible call features
  - Short calls
  - Make-whole calls
  - Hybrid calls

## Infrastructure Plan

- The President's infrastructure plan has been released and will be considered by Congress
  - $1.5 trillion in new investment over the next 10 years
  - $200 billion in new federal spending
- Key Themes:
  - Expansion of financing opportunities
    - Increase capacity of existing Federal credit programs to fund investments; and
    - Broaden the use of Private Activity Bonds
  - Federal Funding
    - Provide for targeted Federal investments, encourage innovation and streamline project delivery
    - Investment for rural infrastructure
    - Investment in "bold, innovative, and transformative infrastructure projects that could dramatically improve infrastructure"
  - Streamlining Regulations
    - Seeks to reduce and streamline regulations to help increase timely delivery of certain projects

## Recession History

- Historical recessionary cycles would indicate economic slowdown in the coming years

| Peak | Trough | Duration |
|---|---|---|
| December 2007 | June 2009 | 18 months |
| March 2001 | November 2001 | 8 months |
| July 1990 | March 1991 | 9 months |
| July 1981 | November 1982 | 16 months |
| January 1980 | July 1980 | 6 months |

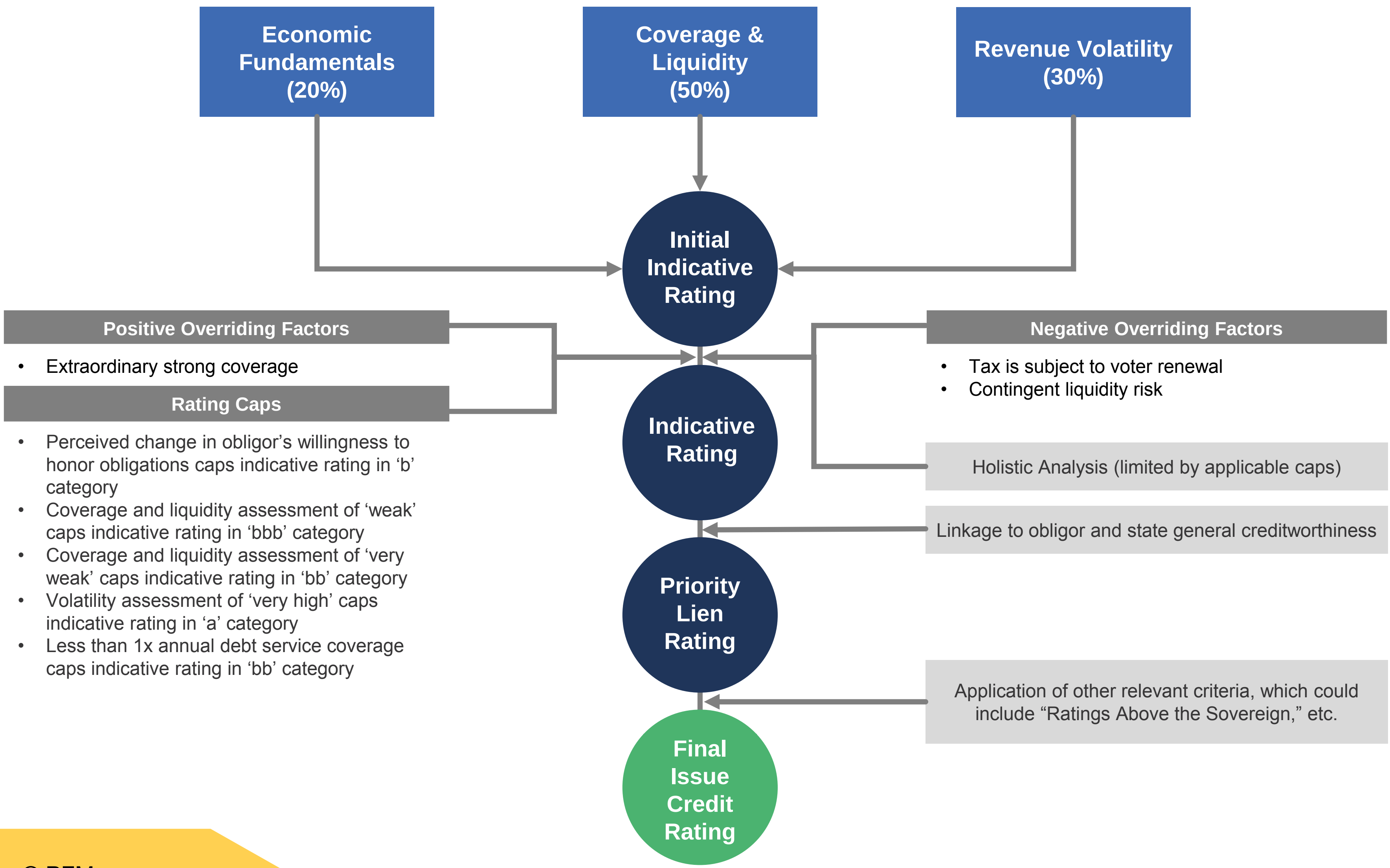
- Financial plans and forecasts should be stressed under recessionary scenarios to better plan for potential slowdowns

# S&P Priority Lien Tax Revenue Rating Criteria

## S&P's Proposed Criteria Request for Comments

- On November 13, 2017, S&P released a Request for Comment relating to its proposed Priority-Lien Tax Revenue Debt criteria
  - Expected to replace the previous criteria "Special Tax Bonds" from June 13, 2007
  - Comments and feedback were due by January 31, 2018
  - S&P is currently in the process of reviewing comments prior to making final determinations on revisions to the existing criteria
- The proposed criteria entails changes to the following rating elements:
  - Revised analytical framework;
  - Defined overriding factors and caps to indicative ratings; and
  - Linking of rating to general creditworthiness of issuer

# Analytical Framework for Priority-Lien Tax Revenue Debt Criteria




*Source: S&P’s Request for Comment: Priority-Lien Tax Revenue Debt published November 13, 2017*

## Proposed S&P Priority-Lien Tax Revenue Debt Methodology

- The proposed methodology would be based on three main factors that would be used to determine an initial indicative rating

| Proposed S&P Priority-Lien Revenue Debt Criteria | | |
|---|---|---|
| **Factor** | **Sub-Factors** | **Additional Comments** |
| **I. Economic Fundamentals (20%)** | Size of population within the tax base | - Population base and diversity |
| | Income levels of residents | - Income levels compared to national levels |
| | Taxing base part of large, broad, and diverse MSA | - Size and involvement in large, broad and diverse metropolitan statistical area (MSA) |
| **II. Coverage and Liquidity (50%)** | Coverage | - Capacity of the obligation to withstand declines in pledged revenues and/or the issuance of additional parity obligations<br>- Forward-looking view of coverage informed by MADS coverage, additional bonds test, or other factors that may affect coverage in the future, such as economic and demographic trends |
| | Liquidity | - Ability to withstand periods of revenue interruption or stress<br>- Focuses on protection provided by liquidity in the form of a DSRF or other available required reserves as laid out in bond documents |
| **III. Revenue Volatility (30%)** | Historical Volatility | - Trends at national level throughout several economic cycles; sensitivity or stability over time<br>- No analysis of aggregate tax revenue collections, instead the underlying economic activity or revenues driving the collections |
| | Future Outlook | - Changes in elasticity of demand for particular goods or services being taxed<br>- Changing market conditions, technological, policy or demographic changes |

*Source: S&P's Request for Comment: Priority-Lien Tax Revenue Debt published November 13, 2017*

## Impact on Outstanding Ratings

- S&P Global Ratings maintains approximately 1,300 ratings on the debt or priority-lien tax revenue obligations included in this scope of proposed criteria
  - Assuming that the obligations maintain their current credit characteristics, testing suggests that:
    - 15% – 25% of the ratings would remain the same
    - 40% – 50% would be raised or lowered by one notch
    - 15% – 25% would be raised or lowered by two notches
    - 10% – 20% of the ratings would go upward or downward by three or more notches



*Source: S&P's Request for Comment: Priority-Lien Tax Revenue Debt published November 13, 2017*

## Disclosures

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