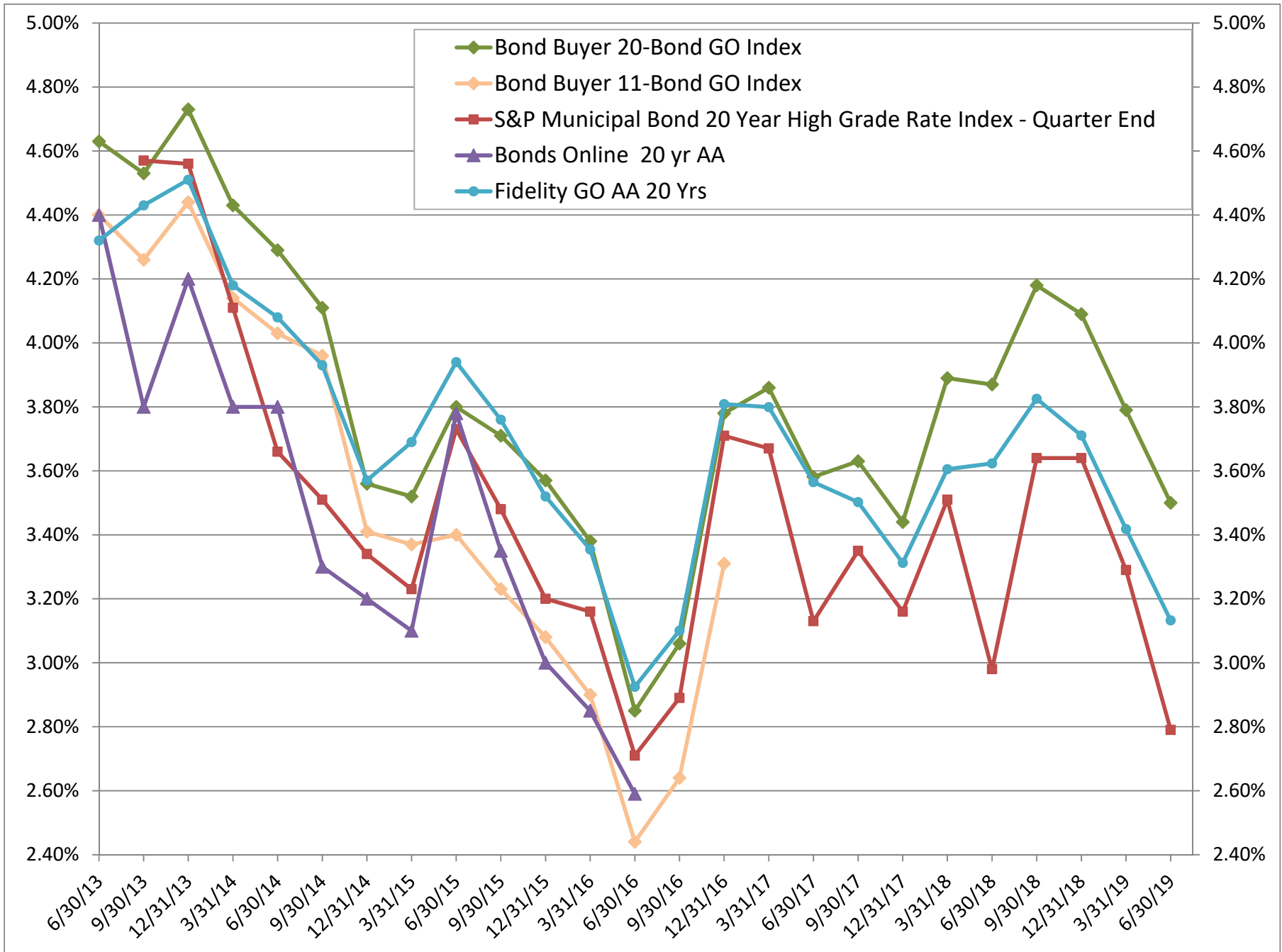


20 Year AA Municipal Bond Quarterly Rates

GASB Statements 67 and 68, which govern accounting for pension benefits, are effective beginning in 2014. One key item is the determination of the discount rate. When benefits are projected to not be paid by plan assets, a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher must be used.

The following graph shows quarterly rates for select municipal bond indices that likely meet the GASB criteria. We do not endorse any particular index and suggest these are not the only possible indices that may be used as the discount rate under these new accounting standards. Links to the indices are included.

20 Year AA Municipal Bond Quarterly Rates



20 Year AA Municipal Bond Quarterly Rates

S&P Municipal Bond

S&P Municipal 20 Year High Grade

Bond 20 Year High Rate Index -

Bond Buyer 20-Bond GO Index	S&P Municipal Grade Rate Index - Quarter End	Following Quarter Rate Index - Beginning	Bonds Online 20 yr AA	Fidelity GO AA 20 Yrs	Bond Buyer 11-Bond GO Index
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Data for last publication date before quarter-end

6/30/13	4.63%		4.40%	4.32%	4.40%
9/30/13	4.53%	4.57%	4.49%	4.43%	4.26%
12/31/13	4.73%	4.56%	4.56%	4.20%	4.44%
3/31/14	4.43%	4.11%	4.12%	3.80%	4.14%
6/30/14	4.29%	3.66%	3.71%	3.80%	4.03%
9/30/14	4.11%	3.51%	3.46%	3.30%	3.96%
12/31/14	3.56%	3.34%	3.29%	3.20%	3.41%
3/31/15	3.52%	3.23%	3.34%	3.10%	3.37%
6/30/15	3.80%	3.73%	3.80%	3.78%	3.40%
9/30/15	3.71%	3.48%	3.48%	3.35%	3.23%
12/31/15	3.57%	3.20%	3.05%	3.00%	3.08%
3/31/16	3.38%	3.16%	3.10%	2.85%	2.90%
6/30/16	2.85%	2.71%	2.49%	2.59%	2.44%
9/30/16	3.06%	2.89%	2.95%		2.64%
12/31/16	3.78%	3.71%	3.73%	3.10%	3.31%
3/31/17	3.86%	3.67%	3.63%	3.81%	
6/30/17	3.58%	3.13%	3.10%	3.80%	
9/30/17	3.63%	3.35%	3.37%	3.56%	
12/31/17	3.44%	3.16%	3.18%	3.50%	
3/31/18	3.89%	3.51%	3.49%	3.31%	
6/30/18	3.87%	2.98%	3.45%	3.61%	
9/30/18	4.18%	3.64%	3.75%	3.62%	
12/31/18	4.09%	3.64%	3.60%	3.83%	
3/31/19	3.79%	3.29%	3.26%	3.71%	
6/30/19	3.50%	2.79%	3.36%	3.42%	

20 Year AA Municipal Bond Quarterly Rates – Index Descriptions

Bond Buyer 20-Bond General Obligation Index

The 20-Bond Index consists of 20 general obligation bonds that mature in 20 years. The average rating of the 20 bonds is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA. The indices represent theoretical yields rather than actual price or yield quotations. Municipal bond traders are asked to estimate what a current-coupon bond for each issuer in the indices would yield if the bond was sold at par value. The indices are simple averages of the average estimated yields of the bonds. Information is available by subscription from bondbuyer.com. Weekly rates are posted here:

<http://www.bankrate.com/rates/interest-rates/bond-buyer-20-bond-index.aspx>

As noted on the announcement posted on September 26, 2016, the **Federal Reserve Board** ceased publication of the several interest rates in its Selected Interest Rates (H.15) statistical release effective October 11, 2016 including state and local bonds. A list of sources for the discontinued data is available at:

http://www.federalreserve.gov/releases/h15/h15_technical_qa.htm

Historical charts before 10/6/2016 are available here: <http://research.stlouisfed.org/fred2/series/WSLB20/>

S&P Municipal Bond 20 Year High Grade Rate Index

The S&P Municipal Bond 20 Year High Grade Rate Index consists of bonds in the S&P Municipal Bond Index with a maturity of 20 years. Eligible bonds must be rated at least AA by Standard and Poor's Ratings Services, Aa2 by Moody's or AA by Fitch. If there are multiple ratings, the lowest rating is used. S&P rebalances the Index after every month end. <http://us.spindices.com/indices/fixed-income/sp-municipal-bond-20-year-high-grade-rate-index>

Bonds Online 20 yr AA

Municipal bond yields, 20-year, AA, Non-taxable, Data provided by ValuBond & BondsOnline. Website discontinued after 6/30/16.

Fidelity General Obligation AA

Use: **Fixed Income Market Data/Yield Curve/Data**

Municipal bonds include only federally tax-exempt municipal bonds. A proprietary curve fitting model is used to capture yield levels across the entire maturity spectrum. This methodology enables the generation of a smooth curve capable of manifesting a rich variety of shapes, while maintaining yield stability from day to day. The municipal curves are constructed using option adjusted analytics of a diverse population of over 10,000 tax exempt securities. Market data is provided by Interactive Data Solutions Inc

<https://fixedincome.fidelity.com/ftgw/fi/FIResearchMarkets?sid=2>

Bond Buyer 11-Bond General Obligation Index

The 11-Bond Index consists of 11 general obligation bonds that mature in 20 years. The rating of each bond is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA. The indices represent theoretical yields rather than actual price or yield quotations. Municipal bond traders are asked to estimate what a current-coupon bond for each issuer in the indices would yield if the bond was sold at par value. The indices are simple averages of the average estimated yields of the bonds. Information is no longer available without subscription.

http://www.bondbuyer.com/marketstatistics/search_bbi.html?details=true