Par Munis — Sub-Par Performance

Brookings Institute | 10th annual Municipal Finance Conference

July 13, 2021

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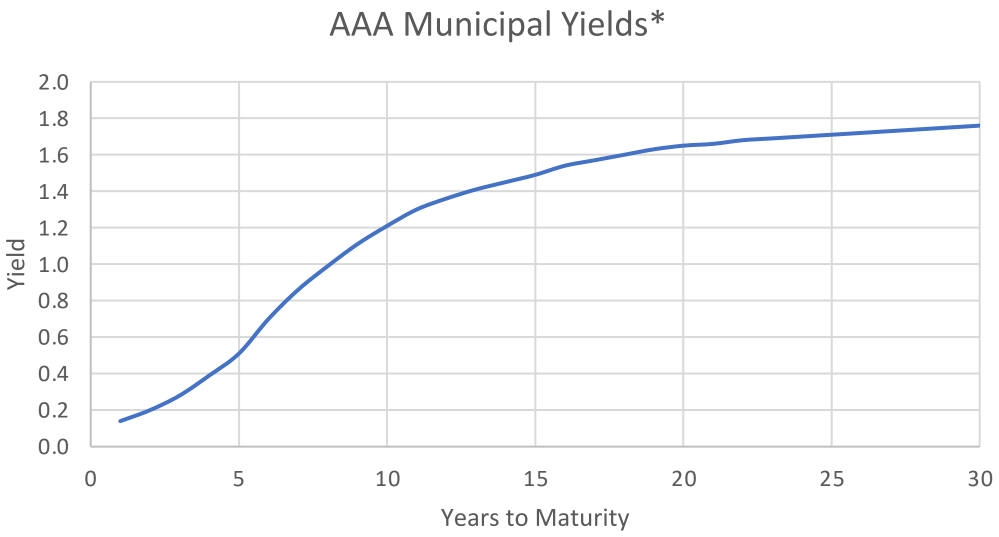
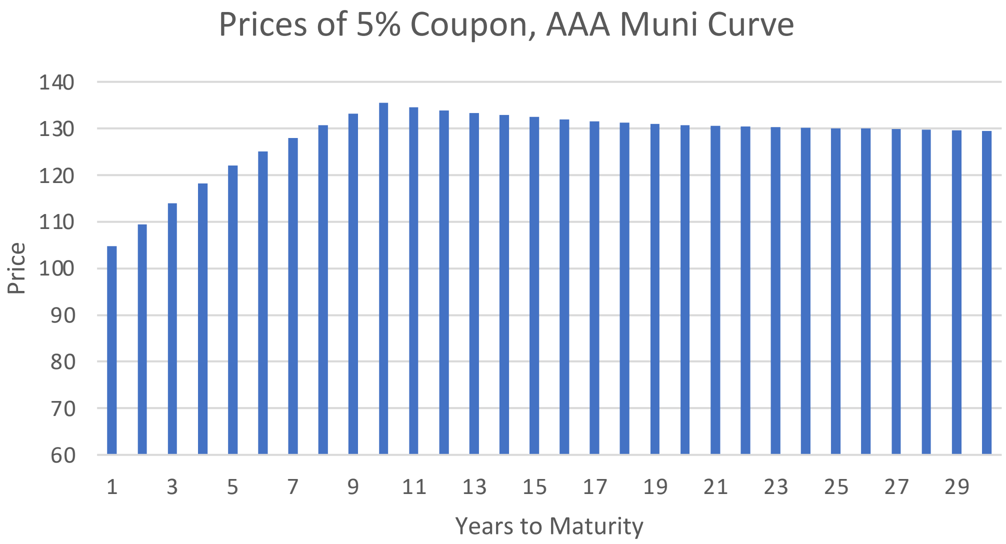
My Perspective: *Portfolio Manager*

- Director of Municipals at AllianceBernstein for 28 years
- Managed for institutions and high-net-worth individuals; all subject to taxes
- AUM grew from $500m to $50B
- Mark-to-market performance important for both compensation and growth
- Clients were highly tax sensitive
- To be successful, we needed to be tax-smart both today and in the future

➔ *Today, we'll show why institutional investors have a strong preference for premium coupon munis*

Muni Benchmark Curve is for 5% Premium Coupon Bonds



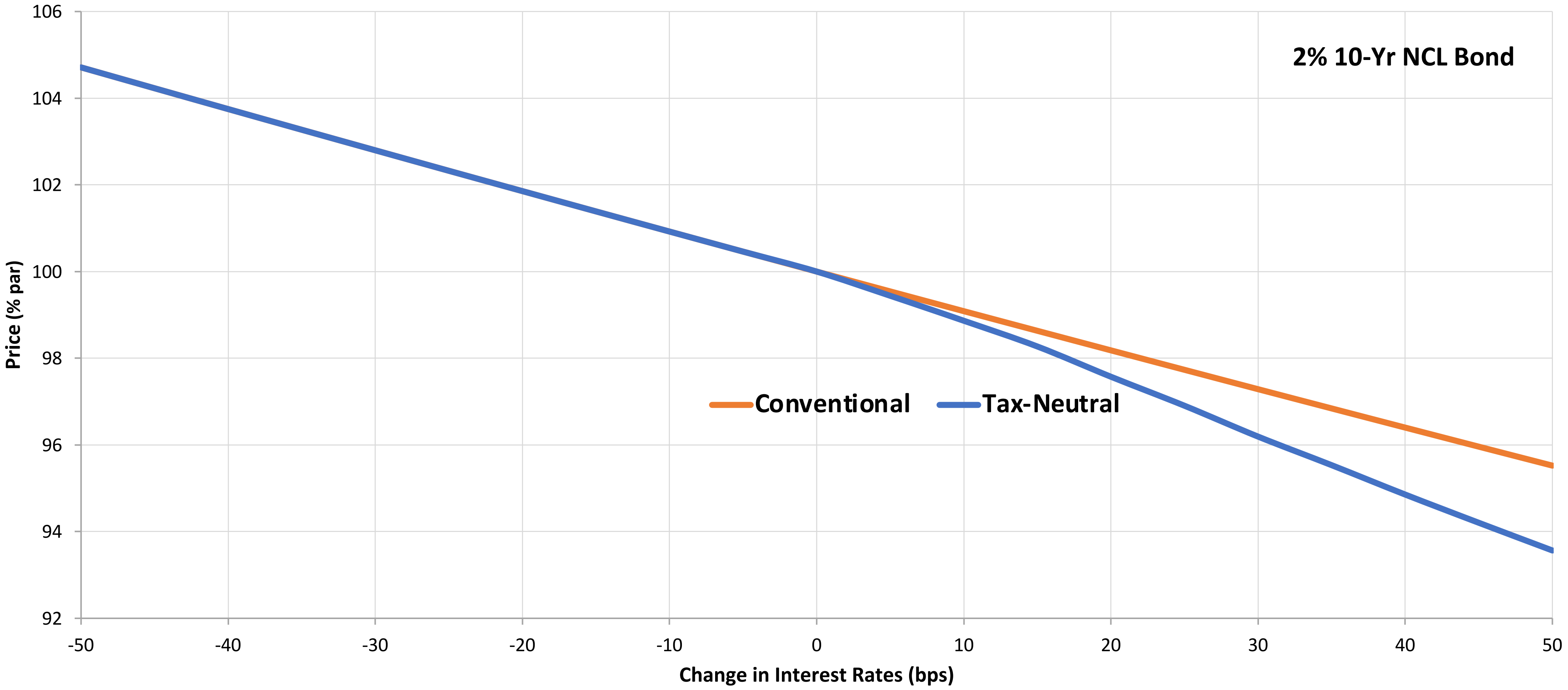


*Municipal Market Advisors 5% 10 year par call as of July 6, 2021

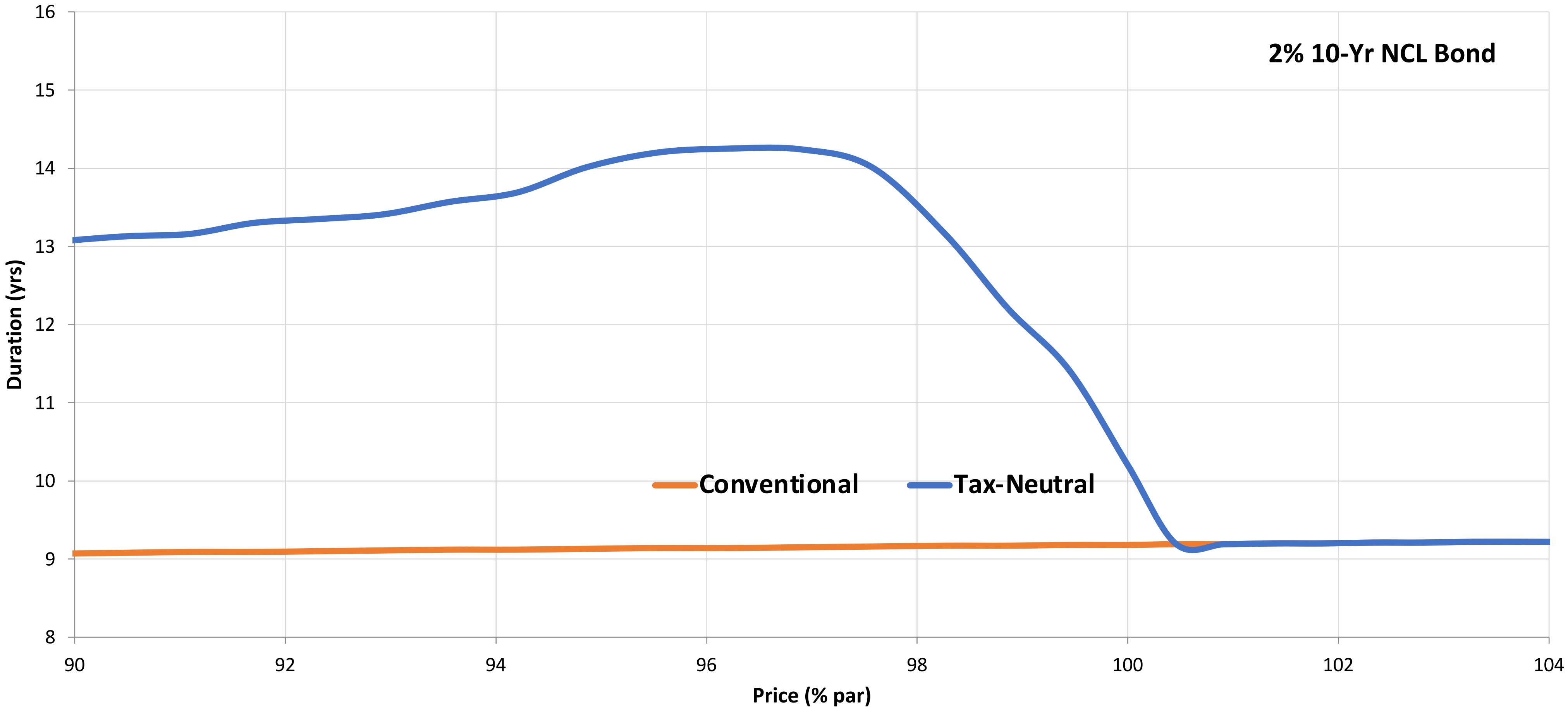
De Minimis Tax Rule – When Tax-Exempt Munis Aren't Tax Free

- Gain on munis purchased at a discount are taxed at maturity:
  - Small gains taxed as capital gains; ~ 20%
  - Large gains taxed as ordinary income; ~ 40%
  - De minimis threshold: 100 minus (0.25 X number of whole years to maturity)
- Market Prices of Discount Munis Reflect Potential Tax
  - Price is reduced by the present value of the tax
  - Future tax liability increases duration:
    - higher interest rates → lower PV of cash flows → higher taxes → lower PV → and so on
  - Process converges to 'tax-neutral' value

Tax Cost Increases Interest Rate Sensitivity



De Minimis Tax Liability Extends Duration



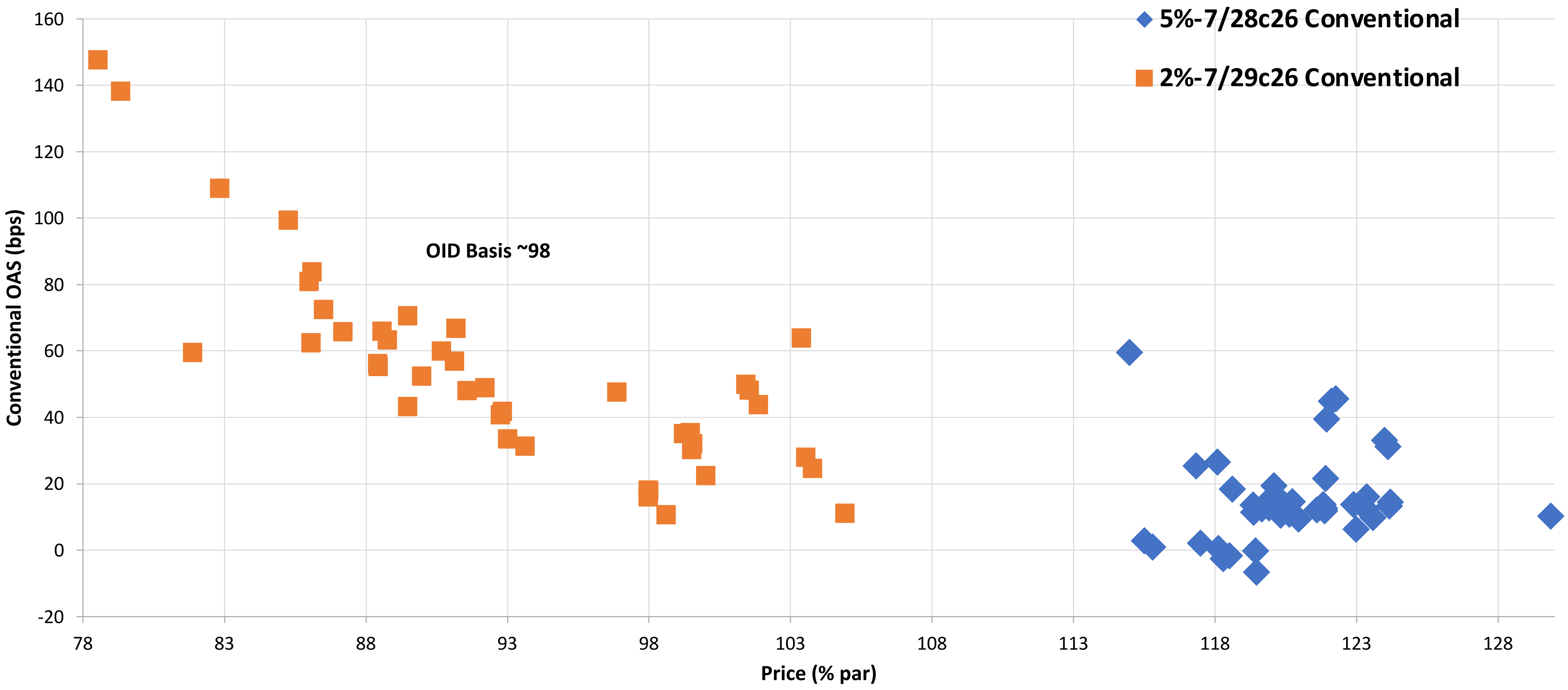
Example: Investors Value Bonds on an After-Tax Basis

In August 2016, Los Angeles Unified School District sold the following two bonds in their General Obligation Series B issue:

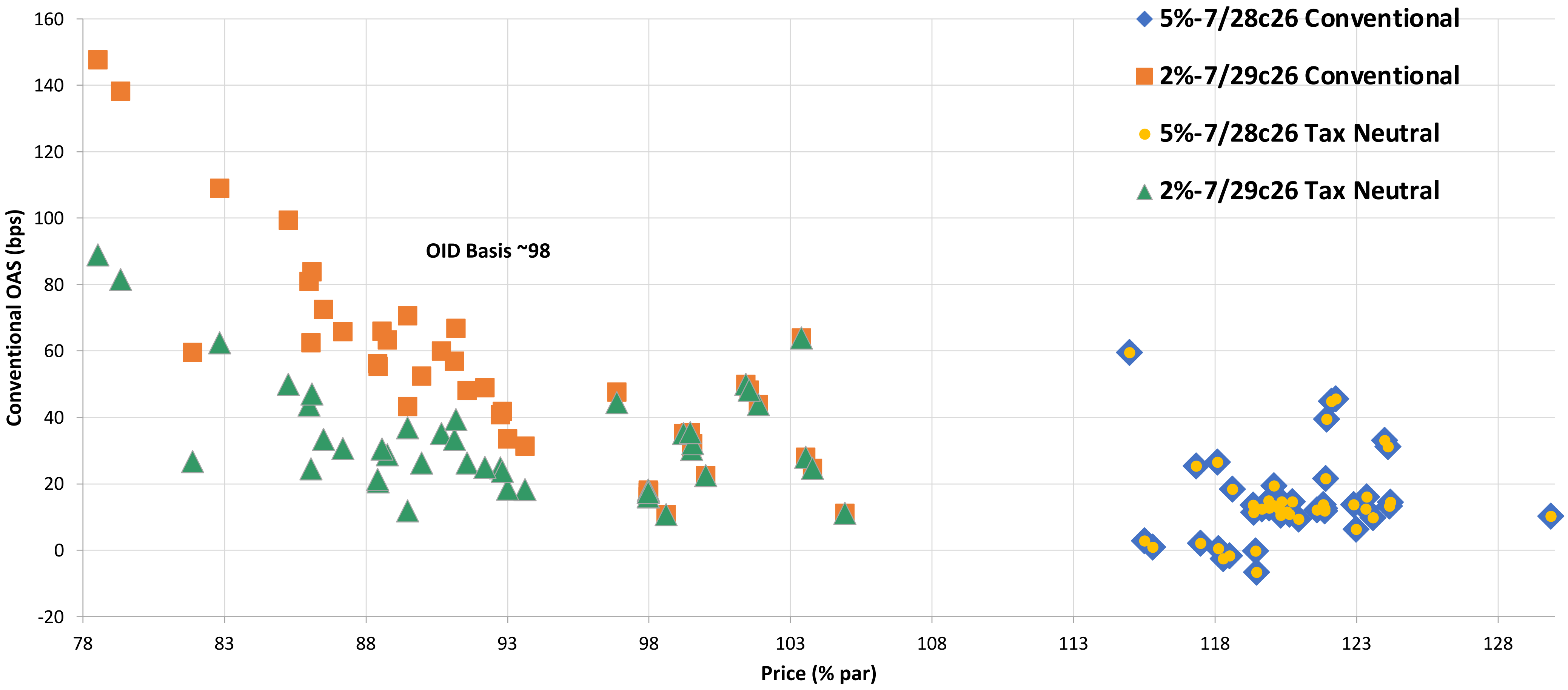
	Par Bond	Premium Bond
Coupon	2.00%	5.00%
Price	98.000	129.865
Maturity	7/1/29	7/1/28
Call Date	7/1/26	7/1/26
Call Price	100.000	100.000
Ratings (Moodys/Fitch)	Aa3/AA+	Aa3/AA+
Size	$75,940,000	$79,740,000
Yield to Worst	2.18%	1.68%
OAS*	16	10

*MMD 5% Callable AAA curve converted to a non-call par, 30% implied volatility

Discount Munis Look Cheap… Are They?



Tax-Neutral OAS Shows Discounts Are Fairly Valued



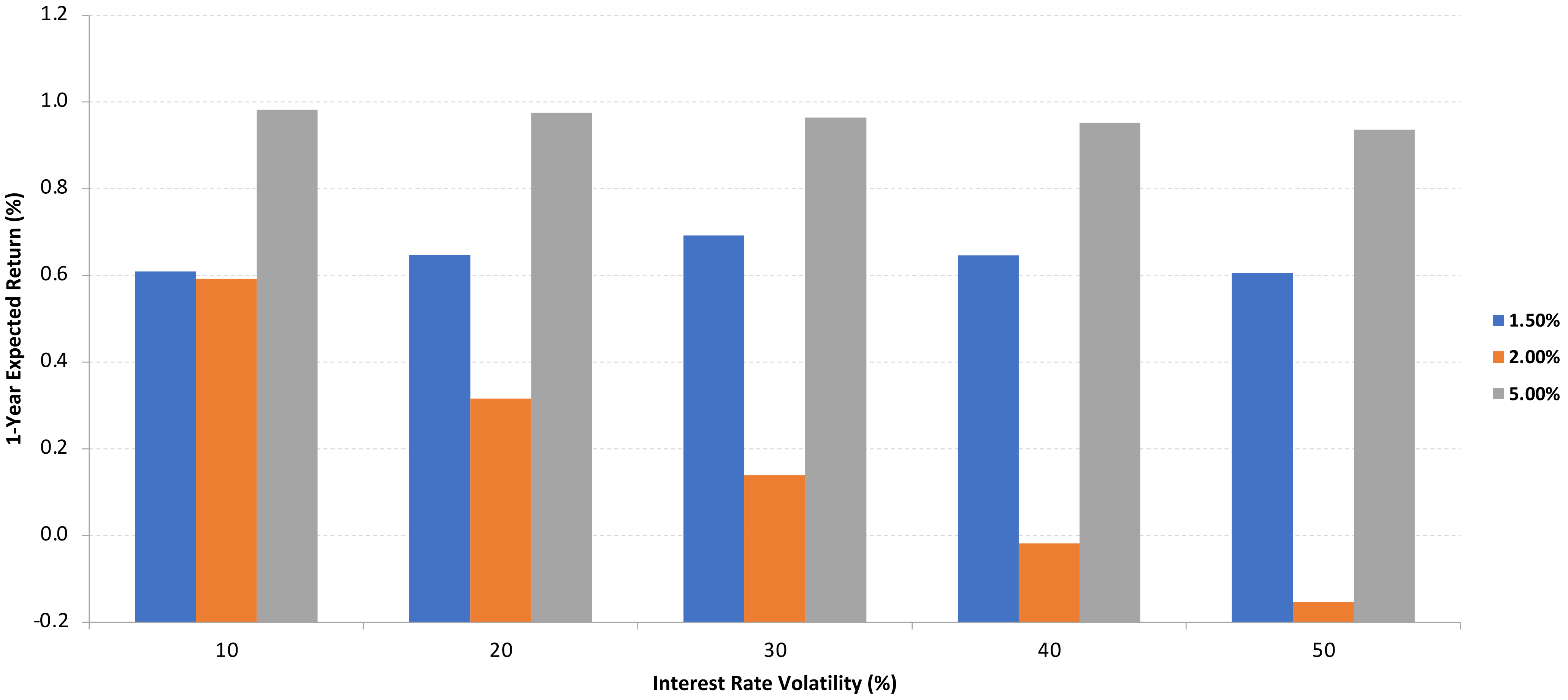
Calculating 1-year Expected Return of a Par Bond

Today		One Year Forward				Expected Mark-to-Market Return
10-Yr Yield	Price	9-Yr Yield	Price	Return	Probability	
		3.86%	80.15	-18.70%	0.1%	
		3.39%	84.74	-13.72%	1.1%	
		2.98%	88.91	-9.29%	4.6%	
		2.64%	92.67	-5.39%	10.8%	
		2.35%	96.00	-2.00%	21.1%	
2.00%	**100**	2.10%	99.16	1.17%	24.6%	**0.14%**
		1.89%	101.01	3.00%	21.1%	
		1.72%	102.46	4.42%	10.8%	
		1.57%	103.69	5.62%	4.6%	
		1.45%	104.73	6.63%	1.1%	
		1.35%	105.60	7.47%	0.1%	

Forward yield and the distribution of potential yields calculated from MMD AAA 5% curve assuming a log-normal distribution at a 30% volatility.

Premium Coupon Bonds Shine!

Par Bonds Expected to Significantly Underperform Due to Their Negative Convexity



Summary – Taxes Matter!

- Tax costs depress municipal bond prices when prices fall below par
- Changing tax liabilities creates unique challenges in determining interest rate sensitivity and expected return of munis
- Fairly priced premium munis expected to outperform par bonds in the near term
- The extent of underperformance depends on the shape of the yield curve, and it is positively correlated with interest rate volatility

Some take-aways…

- **Issuers** should sell premium coupon bonds to attract institutional demand and realize lower financing costs
  - Since 5% bonds callable at par are refunded even if rates move significantly higher, consider higher call prices to extend duration
  - To assure refunding only when rates actually decline, call price for a 30-yr 5% bond in year 10 should be near 150; sale price would increase by 20 points
- **Academics** need to account for the impact of taxes, and call options, on tax-exempt municipal bond prices
- **Investors** should avoid par bonds, unless they yield significantly more than premium bonds

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