

## Municipal CEF PGI vs. Benchmark based on Discount/Premium Level

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Peer Group Index (PGI): Morningstar All Municipal CEFs

Benchmark: Bloomberg US Municipal Bond Index

12.29.2000 – 5.31.2022

### 20+ Year History of Municipal CEF Discounts and Returns

Closed-end fund (CEF) discount levels play an important role in expected future total returns. Historically speaking, investors have benefited by purchasing CEFs when discounts are wide (price of security trading below the net asset value) vs. when CEFs are trading at premiums (price of security trading above the net asset value). The table below looks at 20+ years of municipal CEF discounts and attempts to quantify the next-twelve-month return expectation given a specific discount level.

As an example, let's look at the -12% to -10% discount row (second row down in the table). The first two columns (# of days and % of days) highlight the frequency of days which this discount level has occurred over the past 20+ years. As can be seen, it is a fairly rare opportunity to be able to invest in municipal CEFs at such wide discounts. The next section highlights the average

returns 1-year forward (next twelve months' return) when discounts are at levels within the specified range. Historically, when discounts were between -12% and -10%, municipal CEFs returned 23.96% over the next year. Looking at the total return differential column, one can see that this would have significantly outperformed a more traditional municipal bond portfolio as represented by the Bloomberg US Municipal Bond Index (+14.42% excess return). The last three columns look at the "hit rate" — what percentage of time municipal CEFs produced positive absolute returns or outperformed the benchmark over the next twelve months. In this example, over the past 20+ years, when discounts were -10% or wider, municipal CEFs always produced both positive absolute returns and outperformed the benchmark.

Current discount: <b>-11.1%</b> <sup>1</sup>				Percent of days						
	Disc/prem grouping	Number of days in range	Percent of days in range	Avg 1 year PGI NAV total return	Avg 1 year PGI price total return	Avg 1 year benchmark total return	Total return differential	Positive PGI NAV total return	Positive PGI price total return	PGI price total return beats benchmark
<b>Discounts</b>	< -12%	44	0.8%	29.50%	49.17%	14.50%	34.67%	100.0%	100.0%	100.0%
	<b>-12% to -10%</b>	<b>63</b>	<b>1.2%</b>	<b>14.71%</b>	<b>23.96%</b>	<b>9.54%</b>	<b>14.42%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	-10% to -8%	285	5.3%	9.06%	13.63%	6.62%	7.01%	91.9%	91.9%	91.9%
	-8% to -6%	803	14.9%	7.95%	11.10%	5.15%	5.95%	87.9%	87.2%	84.3%
	-6% to -4%	1,157	21.5%	4.57%	5.50%	3.83%	1.68%	81.8%	79.3%	65.6%
	-4% to -2%	1,573	29.2%	4.99%	4.46%	4.08%	0.38%	82.3%	69.5%	54.3%
<b>Premiums</b>	-2% to 0%	942	17.5%	2.98%	1.37%	2.86%	-1.49%	69.1%	53.9%	36.1%
	0% to +2%	407	7.6%	2.33%	-1.09%	1.98%	-3.07%	58.7%	45.5%	28.0%
	+2% to +4%	114	2.1%	-4.15%	-12.17%	-1.37%	-10.80%	11.4%	6.1%	6.1%
	> +4%	0	0.0%	—	—	—	—	—	—	—

1. Current discount is as of 5.31.2023.

2. This analysis references the date range between 12.29.2000 – 5.31.2022 and includes 5,388 distinct trading periods.

3. Forward Peer Group Index (PGI) total returns are computed using unweighted Morningstar PGI price and NAV total return indexes for the 1 year period forward from the observed discount/premium level. Benchmark returns are computed for the 1 year period forward from the observed discount/premium level using FactSet Analytics.

4. NAV total return is defined as the total return computed using beginning NAV, ending NAV, and any distributions made during the calculation period. Price total return is defined as the total return computed using beginning price, ending price, and any

distributions made during the calculation period.

5. This analysis relies on figures produced by Morningstar and FactSet. Calculations based on this data are estimates made by RiverNorth and are subject to change. RiverNorth cannot objectively guarantee the accuracy of data provided by its vendors.

Source: RiverNorth, Morningstar, FactSet.

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