

# The power of tax-equivalent yield

## What is tax-equivalent yield?

The pretax yield a taxable bond needs to possess for its yield to be equal to that of a tax-exempt bond is the tax-equivalent yield. The tax-equivalent yield helps to fairly compare the yield of a taxable and tax-exempt bond. When considering an investment in a tax-exempt security, such as a municipal bond, an investor may forget that the yield on this type of security is not directly comparable to the yield on a taxable security. Unlike the yield on a tax-exempt security, which is not subject to federal income tax<sup>1</sup> and, in some cases, state and local income taxes, the yield on a taxable security reflects its pre-tax yield—which can create an unfair comparison to the benefits of a tax-exempt security.

## Tax-Exempt Investments Appear Attractive, Particularly in Higher Tax Brackets<sup>2</sup>

An investor's tax rate has a significant impact on the results of a tax-equivalent yield. The chart below displays the amount of additional yield that is required from a "taxable" fixed-income investment to equal the "tax free" yield of a municipal bond.

## Calculating tax-equivalent yield

Tax-equivalent yield is determined by taking the yield of a tax-exempt bond and dividing it by one minus an investor's federal income tax bracket.

For instance, if an investor is in the 32.0% federal income tax bracket, and is looking to compare a taxable bond with a 4.0% yield to a tax-exempt bond with a 3.5% yield, the tax-equivalent yield would be calculated as follows:

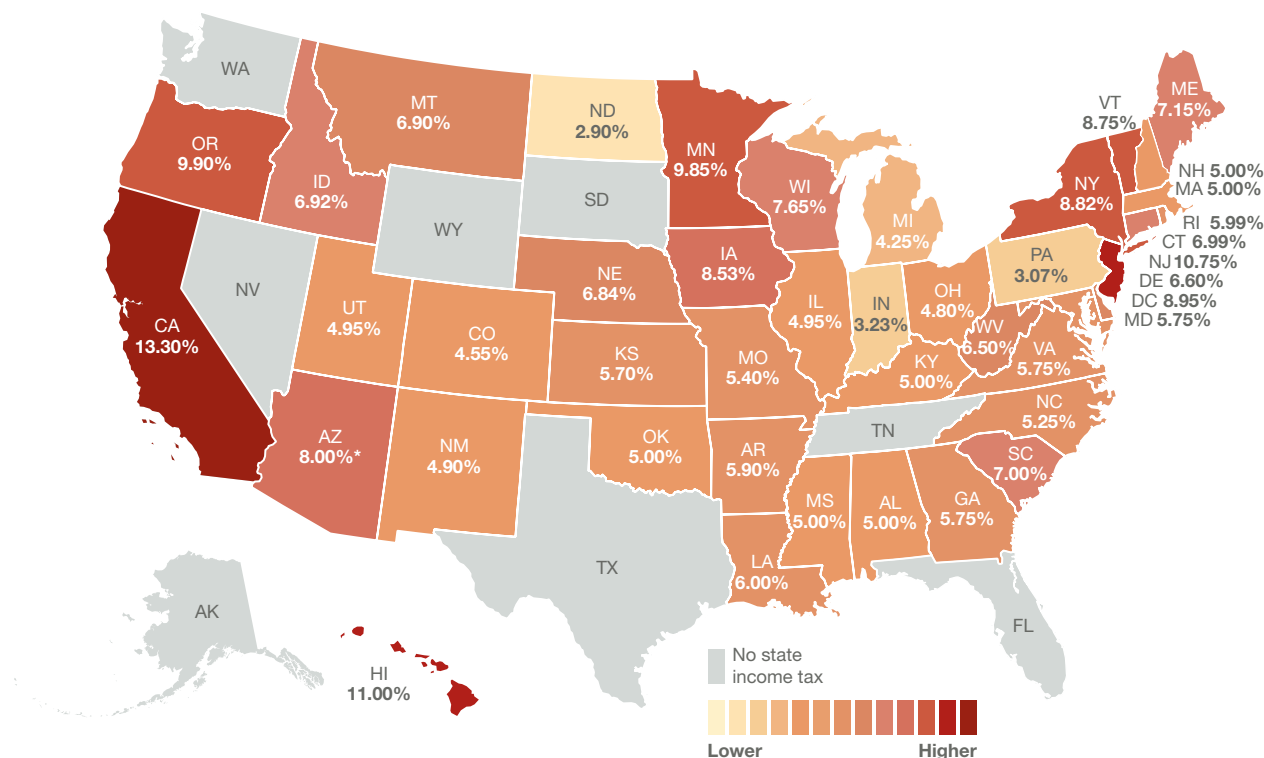
$$3.5\% / (1 - 0.320) = 3.5\% / 0.680 = 5.15\%$$

In this instance, the tax-equivalent yield of the tax-exempt bond (5.15%) is greater than the 4.0% yield of the taxable bond by 1.15%.

		With a tax-free yield of :								
		1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
Income*	2021 Federal Income Tax Rate	You need to find a taxable investment yielding :								
\$0 - \$9,950	10.0%	1.11%	1.67%	2.22%	2.78%	3.33%	3.89%	4.44%	5.00%	5.56%
\$9,951 - \$40,525	12.0%	1.14%	1.70%	2.27%	2.84%	3.41%	3.98%	4.55%	5.11%	5.68%
\$40,526 - \$86,375	22.0%	1.28%	1.92%	2.56%	3.21%	3.85%	4.49%	5.13%	5.77%	6.41%
\$86,376 - \$164,925	24.0%	1.32%	1.97%	2.63%	3.29%	3.95%	4.61%	5.26%	5.92%	6.58%
\$164,926 - \$209,425	32.0%	1.47%	2.21%	2.94%	3.68%	4.41%	5.15%	5.88%	6.62%	7.35%
\$209,426 - \$523,600	38.8%**	1.63%	2.45%	3.27%	4.08%	4.90%	5.72%	6.54%	7.35%	8.17%
\$523,601 +	40.8%**	1.69%	2.53%	3.38%	4.22%	5.07%	5.91%	6.76%	7.60%	8.45%

\*Tax brackets shown are for single filers.\*\*Includes additional 3.8% net investment income tax that may be imposed on single filers with modified adjusted gross income exceeding \$200,000.

## Top State Individual Income Tax Rates, 2021



\* As of January 2021, there appear to be some challenges to the increased rate in Arizona, therefore, this rate is subject to change.



### For more information

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1. Certain municipal bonds are subject to the federal Alternative Minimum Tax.
2. The Federal Income tax rates are based on published rates in effect as of February 2021. Actual tax rates will vary depending on the investor's income, investments, and deductions. The tax information shown is current but subject to change. These calculations are for illustrative purposes only, are hypothetical, not guaranteed, and are not representative of any specific investment.
3. Source: Taxfoundation.org, February 2021. Map shows top marginal rates: the maximum statutory rate in each state. This map does not show effective marginal tax rates, which would include the effects of phase-outs of various tax preferences. Local income taxes are not included.

Municipal securities risks include the ability of the issuer to repay the obligation, the relative lack of information about certain issuers, and the possibility of future legislative changes which could affect the market for and value of municipal securities. Bonds are also subject to credit risk, in which the bond issuer may fail to pay interest and principal in a timely manner.

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## Benefits of state tax-exempt securities<sup>3</sup>

Since tax-exempt bonds can potentially be both federal and state income tax free, an investor can combine both income tax rates to determine their overall tax-equivalent yield.

For instance, if an investor is in the 32.0% federal income tax bracket and lives in the state of New York, their combined income tax rate would be 40.8% (using the maximum state income tax rate of 8.8%).

When comparing a taxable bond with a 4.0% yield to a tax-exempt bond with a 3.5% yield, the tax-equivalent yield when using the combined income tax rate would be calculated as follows:

$$3.5\% / (1 - 0.408) = 3.5\% / 0.592 = 5.91\%$$

In this instance, the tax-equivalent yield of the tax-exempt bond (5.91%) is greater than the 4.0% yield of the taxable bond by 1.91% — highlighting the additional impact of state tax advantaged securities.