Taxable Equivalent Yield – The Tax Free Advantage

May 8, 2018

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$$TEY = \frac{\text{Tax Free Yield}}{(1 - \text{Tax rate})}$$

The tax reform package enacted by Congress and signed by President Trump in the waning days of 2017 lowered tax rates for taxpayers in most brackets. However, despite reductions (top rate dropped to 37% from 39.6%), federal tax rates remain high, especially since the 3.8% Medicare Investment Tax is added to the tax rate for high bracket investors, bringing the top rate to 40.8% (37% + 3.8%). The value of the tax exemption available with most municipal bonds is not always obvious, but the concept of taxable equivalent yield clarifies the tax free advantage.

Married Joint Filers Taxable Income	$165K-$315K	$315K-$400K	$400K-$600K	>$600K
Federal Tax Rate (2018)	24.0%	32.0%	35.0%	37.0%
Rate with Medicare Tax	24.0%	35.8%	38.8%	40.8%
Tax Free Yields	Taxable Equivalent Yields			
2.00%	2.63%	3.12%	3.27%	3.38%
3.00%	3.95%	4.67%	4.90%	5.07%
4.00%	5.26%	6.23%	6.54%	6.76%
5.00%	6.58%	7.79%	8.17%	8.45%
6.00%	7.89%	9.35%	9.80%	10.14%

Assumes Medicare Tax is applied to investment income in federal brackets of 32% and above. Certain investors in the 32% bracket may not be subject to all or any of the Medicare tax.

Taxable Equivalent Yield

Taxable Equivalent Yield (TEY) is a method of comparing the yields of tax-exempt bonds to those of taxable bonds on a pre-tax basis. TEY, the yield required on a taxable bond to equal the yield of a tax-free bond after considering the tax bite is calculated by dividing the tax-free yield by the reciprocal of the federal tax rate. The top table lists TEY for various tax free yields and federal tax brackets. A 35% bracket investor considering a municipal bond with a tax free yield of 3% needs a taxable bond yielding 4.90% (yellow highlight) to earn equivalent income after tax.

State Income Taxes

State taxes also impact taxable equivalent yield. Most states exempt interest of same-state municipals from state income taxes, but do impose tax on out-of-state-bond interest, so the impact of state tax, if appropriate, should also be factored into the TEY calculation. If the tax-free yield comparison is to a corporate bond, for example, the state rate should be added to the federal rate in the TEY calculation. Since interest on US Treasury issues and certain US Agency issues is exempt from state taxation, the state tax rate should not be considered if comparing to a US Treasury issue. While in the past we considered the deductibility of state tax on federal returns, this is less of a consideration, since the December tax bill capped the amount of state and local tax deduction at $10,000.

State	State Tax Rate	Total Tax Rate	TEY for 3% Tax Free Yield
California	9.30%	48.1%	5.78%
Connecticut	6.90%	45.7%	5.52%
Delaware	6.60%	45.4%	5.49%
Washington DC	8.50%	47.3%	5.69%
Florida	NA	38.8%	4.90%
Georgia	6.00%	44.8%	5.43%
Illinois	4.00%	42.8%	5.24%
Maine	7.15%	46.0%	5.55%
Maryland	8.58%	47.4%	5.70%
Massachusetts	5.10%	43.9%	5.35%
Michigan	4.25%	43.1%	5.27%
New Jersey	6.37%	45.2%	5.47%
New York State	6.85%	45.7%	5.52%
New York City	10.73%	49.5%	5.94%
North Carolina	7.75%	46.6%	5.61%
Ohio	5.00%	43.8%	5.34%
Pennsylvania	3.07%	41.9%	5.16%
Rhode Island	5.99%	44.8%	5.43%
South Carolina	7.00%	45.8%	5.54%
Tennessee	5.00%	43.8%	5.34%
Texas	NA	38.8%	4.90%
Virginia	5.75%	44.6%	5.41%
West Virginia	6.50%	45.3%	5.48%

Assumes married investors filing jointly with $250,000 annual taxable income (35% federal bracket). Maryland includes state tax (5.75%) and county tax (Baltimore Co = 2.83%)

Example 1

A Florida resident, in the 35 percent federal tax bracket (plus 3.8% Medicare Tax), is considering a municipal bond with a 3.00% tax-free yield. She is comparing the tax free municipal yield to a corporate bond issue with a 4.00% yield. Since she is a Florida resident, state taxation need not be considered.

The calculation of her taxable equivalent yield is: TEY = 3.00% / (1-.388) = 3.00% / .612 = 4.90%. After considering taxes, the municipal bond's 4.90% TEY is higher than the 4.00% corporate bond yield.

Example 2

A Georgia resident in the 35 percent federal bracket is considering a municipal bond with a tax-free yield of 3.00% and comparing it to a corporate bond issue with a 4.00% yield. The Georgia tax rate of 6% added to the 38.8% federal tax bite generates a total tax rate of 44.8%, generating a 5.43% TEY.

The calculation of his taxable equivalent yield is: TEY = 3.00% / (1-.448) = 3.00% / .552 = 5.43%. After considering taxes, the municipal bond's 5.43% TEY is above the corporate bond yield of 4.00%.

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