



KNOWLEDGE BASE

LifeYield Default Capital Market Assumptions

The Taxficient Score measures the tax efficiency of a client's portfolio and the expected after-tax returns projected over a defined period. It is a simple measure of the current tax efficiency of a client's investments compared to best and worst-case scenarios. The score allows advisors to introduce their clients to the opportunity for maximizing after-tax returns by optimally locating assets across their IRA and brokerage accounts.

Capital Market Assumptions (CMAs) are one of the fundamental data inputs in the calculations of where the assets will be located and directly impacts the Taxficient Score. The CMAs define a set of asset categories to be used, along with referenced investable portfolios (e.g. mutual fund or ETF) on how those asset categories performed in the past. The client's effective tax rates are used in conjunction with the CMAs to determine optimal asset location for a multi-account investment portfolio.

The applications have four sets of default CMAs, Level 1 (Locked, Customizable) and Level 2 (Locked, Customizable). The Level 1 CMA Set has 6 asset categories and is used for a Quick Proposal. The Level 2 CMA set is more extensive and has 20 asset categories. The (Locked) CMA sets cannot be edited or changed. The (Customizable) CMA sets may be edited to modify, add, change, or delete any categories or their return statistics. These default CMA sets are updated yearly.

Advisors and firms can create their own CMA sets by making changes to the Customizable Sets, or by importing CSV or text files using the import function on the Capital Market Assumptions page.

The end date of the return periods used in these Capital Market Assumptions is December 31, 2019.

Default – Level 1 CMAs

	1	2	3	4	5	6	7
Category Name	Asset Type	Total Return	Yield	Dividend	Turnover	Standard Deviation	Equivalent Group
Cash	Cash	1.72%	1.72%	—	—	0.49%	—
Taxable Bond	Bond	2.14%	2.14%	—	—	3.07%	Bond
Municipal Bond	Muni	1.65%	1.65%	—	—	3.23%	Bond
Equity (Passive)	Equity	9.27%	—	1.83%	3.00%	4.24%	Equity
Equity (Active)	Equity	9.47%	—	0.48%	90.00%	2.25%	Equity
Other	Other	0.00%	0.00%	—	—		

1 Five supported **Asset Types**: Cash, Bond (Taxable Bonds), Muni (Municipal Bonds), Equity, Other

2 **Total annual return** for an asset category; includes Yield or dividends, plus any return (capital appreciations). Any negative return will be treated as 0.00%.

3 The **Yield** percentages are from distributions over the trailing 12-month period. Taxes on Yield: Tax-free municipal bonds are not taxed; all other yields are taxed at the investors ordinary income tax rate.

4 **Dividends** are treated as qualified when held in a taxable account and are taxed at the long-term capital gains tax-rate.

5 **Turnover** determines the rate at which the Total Return is taxed. Any turnover up to 100% is considered long-term, where the capital gains rate is applied according to the rate provided by the advisor. Turnover above 100% is considered short-term, where the ordinary income tax rate is applied to that portion in excess of 100%.

6 **Standard Deviation** is a measure of the dispersion of the total return from its mean. It is optional and used only on rare occasions, as a tie-breaker in determining where an asset may be placed when two categories have equal tax-related rankings.

7 **Equivalent Assets** are similar to the client's primary asset categories. They may be substituted in the different registration types in order to deliver the highest after-tax returns while maintaining the portfolio's target allocation.

Representative industry standard funds and ETFs used in LifeYield's default **Level 1** CMAs

Category Name	Fund Ticker	Fund Name	Return Period
Cash	VMMXX	Vanguard Prime Money Market Fund	15-Year
Taxable Bond	VBILX	Vanguard Intermediate Bond Index Fund Admiral Shares	15-Year
Municipal Bond	VTEAX	Vanguard Tax-Exempt Bond Fund Admiral Shares	15-Year
Equity (Passive)	VFIAX	Vanguard 500 Index Fund Admiral Shares	15-Year
Equity (Active)	EAERX	Eaton Vance Stock Fund Class A	15-Year
Other	—	—	15-Year

These funds provide the asset category investment characteristics used by LifeYield. The statistics are gathered from each fund's prospectus.

The Default Level 1 CMAs are used as the default in Quick Proposal.

Default – Level 2 CMAs

	1	2	3	4	5	6	7
Category Name	Asset Type	Total Return	Yield	Dividend	Turnover	Standard Deviation	Equivalent Group
Cash	Cash	1.72%	1.72%	—	—	—	—
Intermediate Bond	Bond	1.65%	1.65%	—	—	3.07	Intermediate Bond
Long-Term Bond	Bond	3.23%	3.23%	—	—	3.23	Long-Term Bond
High-Yield Bond	Bond	4.07%	4.07%	—	—	4.24	High-Yield Bond
Intermediate Municipal Bond	Muni	1.46%	1.46%	—	—	2.25	Intermediate Bond
Long-Term Municipal Bond	Muni	1.84%	1.84%	—	—	2.76	Long-Term Bond
High-Yield Municipal Bond	Muni	2.28%	2.28%	—	—	2.67	High-Yield Bond
US Large Cap Equity (Passive)	Equity	9.19%	—	1.83%	3.00%	12.10	US Large Cap Equity
US Large Cap Equity (Active)	Equity	9.47%	—	0.48%	90.00%	11.42	US Large Cap Equity
US Mid Cap Equity (Passive)	Equity	9.71%	—	1.54%	14.00%	13.00	US Mid Cap Equity
US Mid Cap Equity (Active)	Equity	10.57%	—	—	102.00%	13.48	US Mid Cap Equity
US Small Cap Equity (Passive)	Equity	9.40%	—	1.55%	14.00%	14.94	US Small Cap Equity
US Small Cap Equity (Active)	Equity	10.22%	—	0.00%	161.00%	16.59	US Small Cap Equity
International Equity (Passive)	Equity	5.24%	—	3.03%	3.00%	11.40	International Equity
International Equity (Active)	Equity	6.73%	—	0.37%	133.00%	11.43	International Equity
Emerging Markets Equity	Equity	7.33%	—	3.07%	11.00%	13.63	—
Real Estate	Equity	8.33%	—	2.69%	6.00%	12.08	—
Alternatives	Equity	8.96%	—	0.91%	64.00%	9.68	—
Commodities	Equity	1.23%	—	1.20%	100.00%	12.47	—
Other	Other	0.00%	—	—	—	—	—

1 Five supported **Asset Types**: Cash, Bond (Taxable Bonds), Muni (Municipal Bonds), Equity, Other

2 **Total annual return** for an asset category; includes Yield or dividends, plus any return (capital appreciations). Any negative return will be treated as 0.00%.

3 The **Yield** percentages are from distributions over the trailing 12-month period. Taxes on Yield: Tax-free municipal bonds are not taxed; all other yields are taxed at the investors ordinary income tax rate.

4 **Dividends** are treated as qualified when held in a taxable account and are taxed at the long-term capital gains tax-rate.

5 **Turnover** determines the rate at which the Total Return is taxed. Any turnover up to 100% is considered long-term, where the capital gains rate is applied according to the rate provided by the advisor. Turnover above 100% is considered short-term, where the ordinary income tax rate is applied to that portion in excess of 100%.

6 **Standard Deviation** is a measure of the dispersion of the total return from its mean. It is optional and used only on rare occasions, as a tie-breaker in determining where an asset may be placed when two categories have equal tax-related rankings.

7 **Equivalent Assets** are similar to the client's primary asset categories. They may be substituted in the different registration types in order to deliver the highest after-tax returns while maintaining the portfolio's target allocation.

Representative industry standard funds and ETFs used in LifeYield's default **Level 2** CMAs

Category Name	Fund Ticker	Fund Name	Return Period
Cash	VMMXX	Vanguard Prime Money Market Fund	15-Year
Intermediate Bond	VFITX	Vanguard Intermediate-Term Treasury Fund	15-Year
Long-Term Bond	ILTB	iShares Core 10+ Year USD Bond ETF	15-Year
High-Yield Bond	VWEHX	Vanguard High Yield Corporate Bond Fund	15-Year
Intermediate Municipal Bond	VWITX	Vanguard Intermediate-Term Tax-Exempt Fund	15-Year
Long-Term Municipal Bond	VWLTX	Vanguard Long-Term Tax-Exempt Fund	15-Year
High-Yield Municipal Bond	VWALX	Vanguard High Yield Tax-Exempt Fund	15-Year
US Large Cap Equity (Passive)	VFIAX	Vanguard 500 Index Admiral	15-Year
US Large Cap Equity (Active)	EAERX	Eaton Vance Stock A	15-Year
US Mid Cap Equity (Passive)	VIMAX	Vanguard Mid-Cap Index Fund	15-Year
US Mid Cap Equity (Active)	NMCAX	Voya MidCap Opportunities A	15-Year
US Small Cap Equity (Passive)	VSMAX	Vanguard Small Cap Growth Index Admiral	15-Year
US Small Cap Equity (Active)	NBMIX	Neuberger Berman Small Cap Growth Inv	15-Year
International Equity (Passive)	VTMGX	Vanguard Developed Markets Index	15-Year
International Equity (Active)	FCPAX	Fidelity Advisor International Capital Appreciation	15-Year
Emerging Markets Equity	VEIEX	Vanguard Emerging Markest Stock Index Fund	15-Year
Real Estate	VGSIX	Vanguard Real Estate Index Investor	10-Year
Alternatives	BPLSX	Boston Partners Long/Short Equity Instl	15-Year
Commodities	DBC	PowerShares DB Commodity Index Tracking Fund	3-Year
Other	—	—	—

These funds provide the asset category investment characteristics used by LifeYield. The statistics are gathered from each fund's prospectus.

LifeYield will use a 15 year return period unless the historical returns of the fund are unlikely to be representative of future returns.

Advisors may use LifeYield's default CMAs or create or import their own. New CMAs may be created by editing the default, by drawing on other sources, or by using different representative funds than those listed above.

HOW TURNOVER IS USED IN CALCULATING TAXES ON CAPITAL GAINS

A capital-gains tax is the amount of an asset category's capital appreciation given up in taxes. The turnover rate is used to determine whether an asset's capital gains tax is calculated using an investor's long-term or short-term capital gains rate. A turnover rate of 100% or less is assumed to consist of long-term gain realization. If a turnover rate higher than 100% is specified, then the amount above 100% is treated as short-term gain realization with any remainder being treated as long-term up to a total of 100%.

Examples:

- A turnover rate of 70% would be interpreted as 70% of the category's capital appreciation being taxed at the long-term capital gains rate, with no taxes being due on the remaining 30%.
- A turnover rate of 140% would be interpreted as 40% of the category's capital appreciation being taxed at the ordinary income tax rate, combined with 60% (i.e. 100% minus 40%) taxed at the long-term capital gains rate.
- At the two extremes, a turnover rate of 0% implies no capital gains taxes (because nothing is sold, and all gains are deferred beyond the current year), while a turnover rate of 200% implies all capital appreciation is subject to ordinary income tax. Any turnover above 200% will have no impact on the results and is ignored by the formula.

HOW EQUIVALENT CATEGORIES WORK

Two or more asset categories may be considered equivalent to each other in terms of meeting an asset allocation. This means that a target allocation containing a category with at least one equivalent can be met with any one of the available equivalents, or even a mix of those categories. It also means that a target allocation containing more than one equivalent asset category is treated in the same way as a target allocation which contains a different mix of the same equivalents. This leads to greater flexibility when meeting a target allocation, since a requirement to hold a given target category amount can be met in multiple ways when equivalent categories are available for consideration.

Along with the flexibility in meeting the target allocation, the use of equivalent categories provides an additional opportunity for location optimization, since the same allocation requirement can be met by more than one asset category, and one available category may be better suited to one account type than another. This capability is used to determine the best category to place in each account type to maximize after-tax return.

The two most common applications of equivalents are substituting taxable bonds and municipal bonds that have similar duration and/or substituting active and passive equities that track the same benchmark.