

# Downside Risk Mitigated – Passively Managed with Tax Management Preference

Strategy Summary | Fourth Quarter 2017

## Strategy summary

Downside Risk Mitigated – Passively Managed Strategies are designed to offer a diversified allocation that reduces downside market participation while using managers who seek to efficiently replicate the performance of their underlying benchmarks (indexing). These strategies also shift a portion of the traditional equity allocation to investments designed to reduce portfolio risk, including high-yield and long/short equity strategies.

Investments selected to implement these strategies are generally indexed, seeking to minimize any deviation from the performance of their underlying benchmark. Where no suitable indexed investment options are currently available, actively managed options will be used. To the extent possible, fixed income exposures are fulfilled using bonds exempt from federal income taxes. In addition, tax managed equity portfolios are employed where a competitive offering exists.

The information shown below is for the selected base models of the referenced strategies. A client's tolerance for risk, investment time frame and investment preferences, among other factors, will ultimately determine the most appropriate strategy for each particular client.

## Investment Strategy

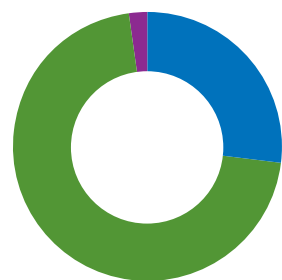
Downside Risk Mitigated -  
Passively Managed

## Preference Overlay

Tax Management

## Strategy composition

### Conservative Long-Term

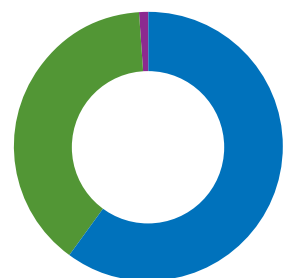


- 30% Equity
- 68% Fixed Income
- 2% Cash/Money Market

Asset Allocation	Asset Class	Investment	Strategy Weight (%)
	Large Cap Growth Stocks	iShares Russell 1000 Growth	7.00%
	Large Cap Value Stocks	iShares Russell 1000 Value	5.00%
	Mid Cap Value Stocks	iShares Russell Mid-Cap Value	4.00%
	International Stocks	iShares MSCI EAFE	4.00%
	Equity Long/Short	361 Global Long/Short Equity	5.00%
	Municipal Bonds	T. Rowe Price Summit Municipal Intermediate	7.00%
	Municipal Bonds	Thornburg Intermediate Municipal	7.00%
	Short-Term Municipal Bonds	Wells Fargo Ultra Short-Term Muni	19.00%
	Short-Term Municipal Bonds	AB Diversified Municipal	19.00%
	High Yield Municipal Bonds	Nuveen High Yield Municipal Bond	13.00%
	Emerging Markets Bonds	PIMCO Emerging Local Bond	3.00%
	Managed Futures	AQR Managed Futures Strategy	5.00%
	Cash/Money Market	Cash	2.00%

## Strategy composition (continued)

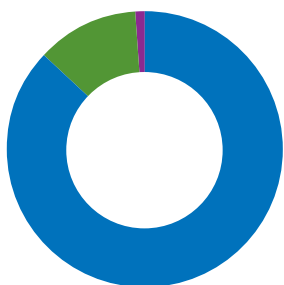
### Moderate Long-Term



- 52% Equity
- 47% Fixed Income
- 1% Cash/Money Market

Asset Allocation	Asset Class	Investment	Strategy Weight (%)
	Large Cap Growth Stocks	iShares Russell 1000 Growth	9.00%
	Large Cap Value Stocks	iShares Russell 1000 Value	11.00%
	Mid Cap Growth Stocks	iShares Russell Mid-Cap Growth	3.00%
	Mid Cap Value Stocks	iShares Russell Mid-Cap Value	8.00%
	International Stocks	iShares MSCI EAFE	5.00%
	REITs	SPDR DJ Wilshire REIT	3.00%
	Equity Long/Short	Diamond Hill Long-Short	8.00%
	Municipal Bonds	T. Rowe Price Summit Municipal Intermediate	6.00%
	Municipal Bonds	Thornburg Intermediate Municipal	6.00%
	Short-Term Municipal Bonds	Wells Fargo Ultra Short-Term Muni	10.50%
	Short-Term Municipal Bonds	AB Diversified Municipal	10.50%
	High Yield Municipal Bonds	Nuveen High Yield Municipal Bond	11.00%
	Emerging Markets Bonds	PIMCO Emerging Local Bond	3.00%
	Managed Futures	AQR Managed Futures Strategy	5.00%
	Cash/Money Market	Cash	1.00%

### Aggressive Long-Term



- 81% Equity
- 18% Fixed Income
- 1% Cash/Money Market

Asset Allocation	Asset Class	Investment	Strategy Weight (%)
	Large Cap Growth Stocks	iShares Russell 1000 Growth	12.00%
	Large Cap Value Stocks	iShares Russell 1000 Value	11.00%
	Mid Cap Growth Stocks	iShares Russell Mid-Cap Growth	3.00%
	Mid Cap Value Stocks	iShares Russell Mid-Cap Value	11.00%
	Small Cap Stocks	iShares Russell 2000	3.00%
	International Stocks	SPDR MSCI ACWI ex-US	8.00%
	Intl Small Cap Stocks	iShares MSCI EAFE Small-Cap	3.00%
	Emerging Markets Stocks	TIAA-CREF Emerging Markets Equity Index	7.00%
	REITs	SPDR Dow Jones REIT	6.00%
	Equity Long/Short	Diamond Hill Long-Short	12.00%
	Municipal Bonds	Thornburg Intermediate Municipal	1.50%
	Municipal Bonds	T. Rowe Price Summit Municipal Intermediate	1.50%
	Short-Term Municipal Bonds	AB Diversified Municipal	4.00%
	High Yield Municipal Bonds	Nuveen High Yield Municipal Bond	8.00%
	Emerging Markets Bonds	PIMCO Emerging Local Bond	3.00%
	Managed Futures	AQR Managed Futures Strategy	5.00%
	Cash/Money Market	Cash	1.00%

## Strategy performance

### Conservative Long-Term

	Quarter To Date	6 Months To Date	1 Year To Date	3 Years To Date	5 Years To Date	Return Since Inception 9/30/09	Standard Deviation <sup>3</sup> Since Inception 9/30/09
Strategy - Gross of Fees <sup>1</sup>	2.00	3.97	8.15	3.56	3.85	4.31	3.00
Strategy - Net of Fees	1.80	3.57	7.31	2.75	3.09	3.59	2.95
<b>Indexes<sup>2</sup></b>							
Russell 3000	6.34	11.20	21.13	11.12	15.58	14.26	12.30
MSCI ACWI ex-USA	5.00	11.48	27.19	7.83	6.80	5.98	14.66
Bloomberg Barclays Municipal Bond	0.75	1.82	5.45	2.98	3.02	4.08	3.66

### Moderate Long-Term

	Quarter To Date	6 Months To Date	1 Year To Date	3 Years To Date	5 Years To Date	Return Since Inception 5/31/09	Standard Deviation <sup>3</sup> Since Inception 5/31/09
Strategy - Gross of Fees <sup>1</sup>	3.09	5.26	10.32	5.20	6.41	7.58	5.73
Strategy - Net of Fees	2.88	4.84	9.45	4.36	5.56	6.73	5.68
<b>Indexes<sup>2</sup></b>							
Russell 3000	6.34	11.20	21.13	11.12	15.58	15.73	12.34
MSCI ACWI ex-USA	5.00	11.48	27.19	7.83	6.80	7.84	14.84
Bloomberg Barclays Municipal Bond	0.75	1.82	5.45	2.98	3.02	4.64	3.83

### Aggressive Long-Term

	Quarter To Date	6 Months To Date	1 Year To Date	3 Years To Date	5 Years To Date	Return Since Inception 9/30/09	Standard Deviation <sup>3</sup> Since Inception 9/30/09
Strategy - Gross of Fees <sup>1</sup>	4.35	7.78	15.59	7.00	8.92	8.90	9.00
Strategy - Net of Fees	4.15	7.37	14.71	6.15	8.06	8.03	8.93
<b>Indexes<sup>2</sup></b>							
Russell 3000	6.34	11.20	21.13	11.12	15.58	14.26	12.30
MSCI ACWI ex-USA	5.00	11.48	27.19	7.83	6.80	5.98	14.66
Bloomberg Barclays Municipal Bond	0.75	1.82	5.45	2.98	3.02	4.08	3.66

The performance numbers are annualized average total returns. Please refer to the following pages for important disclosure information.

The performance data quoted represent past performance, and are no guarantee of future results. Returns and the principal value of an investment will fluctuate so that the accumulation units or shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance quoted above.

You cannot invest directly in any index. Unlike mutual funds, index returns do not reflect a deduction for fees or expenses.

The performance data quoted represent past performance and are no guarantee of future results. The performance is as of December 31, 2017.

Prior to June 30, 2016, the strategy performance was represented by a synthetic blend of strategy holdings based on the strategic asset allocation of the base model. The performance of the underlying holdings of the strategy was provided by Morningstar, Inc. The impact of an individual fund on overall performance was measured by the fund's performance multiplied by its weight in that strategy. The synthetic blend also represented quarterly rebalancing. In June 2016, the firm implemented the use of actual client account performance to present the strategy performance. The use of client performance has been applied retroactively since inception.

1. The performance presented is a composite of all fee-paying fully discretionary accounts under management by TIAA, FSB, as of December 31, 2017, that are managed in the composite's stated style. Composites are reported quarterly when the minimum of five accounts is met. The composite includes accounts invested in the stated strategy for at least one full month with a minimum market value of \$45,000. Accounts with significant cash flows and/or cash balances are excluded from the composite. The Gross of Fee performance presented reflects the reinvestment of dividends and other earnings but does not reflect the deduction of investment advisory fees and other expenses. Net of Fees performance is calculated net of management fees, transaction costs, and custodial fees. Net of fee returns for the period reflect the actual management fee paid from the accounts in the composite; however in cases where a management fee was not deducted from the account or the account paid the fee for other household accounts, the maximum annual fee of 1.15% was applied. Please see the accompanying fee schedule for specific fee information. Investments and allocations may have changed since the date of this report. Clients will receive trade confirms for trades done on their behalf within the account. Please note: Clients have the option to suppress confirms, at which point clients will need to refer to their monthly custodial statement. Individual client performance may differ from the composite returns based on many factors including, but not limited to, their inception in the program, timing of additional investments, individual preferences, fees, risk, return and time horizon. Since the composite may include accounts of varying types, the fee schedules vary depending on the nature and size of the account as well as the investment vehicle.
2. Index performance information has been obtained from third parties deemed to be reliable. Indices are shown for convenience purposes only. The definitions of the broad market indexes are as follows:  
 Russell 3000 – The Russell 3000 is market capitalization weighted index of the largest 3,000 U.S. publicly traded companies. The companies tracked by this index account for about 98% of companies traded in the United States.  
 MSCI All-Country World ex-US – The MSCI All-Country World ex-US is a free-float adjusted market capitalization index designed to measure the equity market performance of developed markets and emerging markets, excluding the U.S. It includes securities from 44 countries comprising 23 developed and 31 emerging market countries.  
 Bloomberg Barclays Capital – The Bloomberg Barclays Capital Municipal Bond Index is a broad market index of investment-grade, tax-exempt bonds with a maturity of at least one year, and consists of approximately 1,100 bonds, 60% of which are revenue bonds and 40% of which are state government obligations.
3. Standard deviation of return measures the average deviations of a return series from its mean, and is often used as a measure of risk. A large standard deviation implies that there have been large swings in the return series of the manager or index.

The portfolio is subject to the risks associated with the types of securities held by each of the underlying investments in which they invest. An investment in an asset allocated portfolio may be subject to all or some of the following investment risks, depending upon its underlying investments:

**Equity Investment Risks:** **Market Risk** – the risk that the price of securities may fall in response to economic conditions; **Company Risk** – the risk that the financial condition of a company may deteriorate, causing a decline in the value of the securities it issues; **Style Risk** – the risk that an investment style may lose favor in the marketplace; **Large-Cap Risk** – the risk that large companies may grow more slowly than the overall market; **Small-Cap/Mid-Cap Risk** – the risk that smaller company securities may be more volatile than those of larger ones; **Real Estate Risk** – investing is subject to various risks, including fluctuations in property values, higher expenses or lower income than expected, and potential environmental problems and liability; **Foreign Investment Risk** – the risk that securities of foreign issuers may lose value because of erratic market conditions, economic and political instability or fluctuations in currency exchange rates, which may be magnified in emerging markets.

**Fixed-Income Investment Risks:** **Interest Rate Risk** – the risk that the market value of fixed-income securities may fluctuate when interest rates change; **Prepayment Risk** – the risk that the issuers of individual securities may prepay them at a time when interest rates have declined; **Extension Risk** – the risk that the value of individual securities will decline because principal payments are not made as early as possible; **Income Volatility Risk** – the risk that the income from a portfolio of securities may decline in certain interest rate environments; **Credit Risk** – the risk that the issuers of individual securities may default; **Risks of Inflation-Indexed Bonds** – the risks that interest payments on inflation-indexed bonds may decline because of a change in inflation (or deflation) expectations; **Illiquid Securities Risk** – the risk that illiquid securities may be difficult to sell at their fair market value; **Active Management Risk** – the risk that a fund may underperform because of the allocation decisions or individual security selections of its portfolio manager; **Index Risk** – the risk that a portfolio's performance may not match that of its benchmark index; in addition, the portfolio is subject to **Asset Allocation Risk** – whereby the portfolio is impacted by the decisions made regarding the weightings among the different allocations.

Downside Risk - Passively Managed with Tax Management Preference	Number of Portfolios	Dispersion %	Total Composite Assets
Conservative Long-Term	89	0.215	\$31,447,260
Moderate Long-Term	248	0.195	\$100,387,036
Aggressive Long-Term	69	0.315	\$29,963,465

Mutual funds and Exchange-Traded Funds (ETF's) incur embedded expenses (known as their "expense ratio").

All managed accounts are subject to market risk. Consult with your Advisor to ensure that you are comfortable with the level of risk in your portfolio, and advise them of any changes in your financial situation.

Portfolio Advisor is a fee-based investment advisory managed account service offered through Advice & Planning Services, a division of TIAA-CREF Individual & Institutional Services, LLC, a registered investment adviser.

**Investment, insurance and annuity products are not FDIC insured, are not bank guaranteed, are not bank deposits, are not insured by any federal government agency, are not a condition to any banking services or activity, and may lose value.**

©2018 Teachers Insurance and Annuity Association of America-College Retirement Equities Fund, 730 Third Avenue, New York, NY 10017