Asset Allocation Analysis

North Broward Hospital District Pension Fund and Unrestricted Fund

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Rosemary Guillette
Vice President

Segal Marco Advisors

Overview

- **Considerations on asset allocation**
  While we believe capital market assumptions are an important foundation to properly constructing a long-term investment portfolio, great care should be taken not to fully rely on the expected risk and return output, or the mean-variance optimization. By doing so, you would over allocate to investments that are less liquid in nature and less frequently priced. When designing your investment program, a variety of factors should also be included such as risk and drawdown tolerance, cash flow needs, liability and liquidity risk, among others.

- **Assumptions should be used as a guide**
  The creation of capital market assumptions is a multi-facet process that focuses on establishing forward-looking inputs for the purpose of making informed asset allocation decisions. These assumptions are not intended to predict the future but rather put into perspective potential outcomes and set realistic expectations. Given the inputs are forward looking and incorporate various time periods, actual outcomes may differ materially.

- **Diversification a key tenet**
  Diversification is the backbone of modern portfolio theory which suggests the best way to construct an investment portfolio is through the use of multiple asset classes and investments. By allocating capital across lesser correlated asset classes, volatility and risk can be reduced which can improve risk-adjusted return.

- **Current market conditions**
  Where possible, current macro-economic and asset class specific market conditions are incorporated into our assumptions. These market conditions are global in nature, and may include, but are not limited to, metrics such as current interest rates, inflation, growth forecasts, valuations.

- **Allowance for active management**
  Assumptions are based on expected market returns for a specified index and do not incorporate additional return from active management. Given some asset classes can not be invested in passively such as hedge funds and private equity, these are an exception.

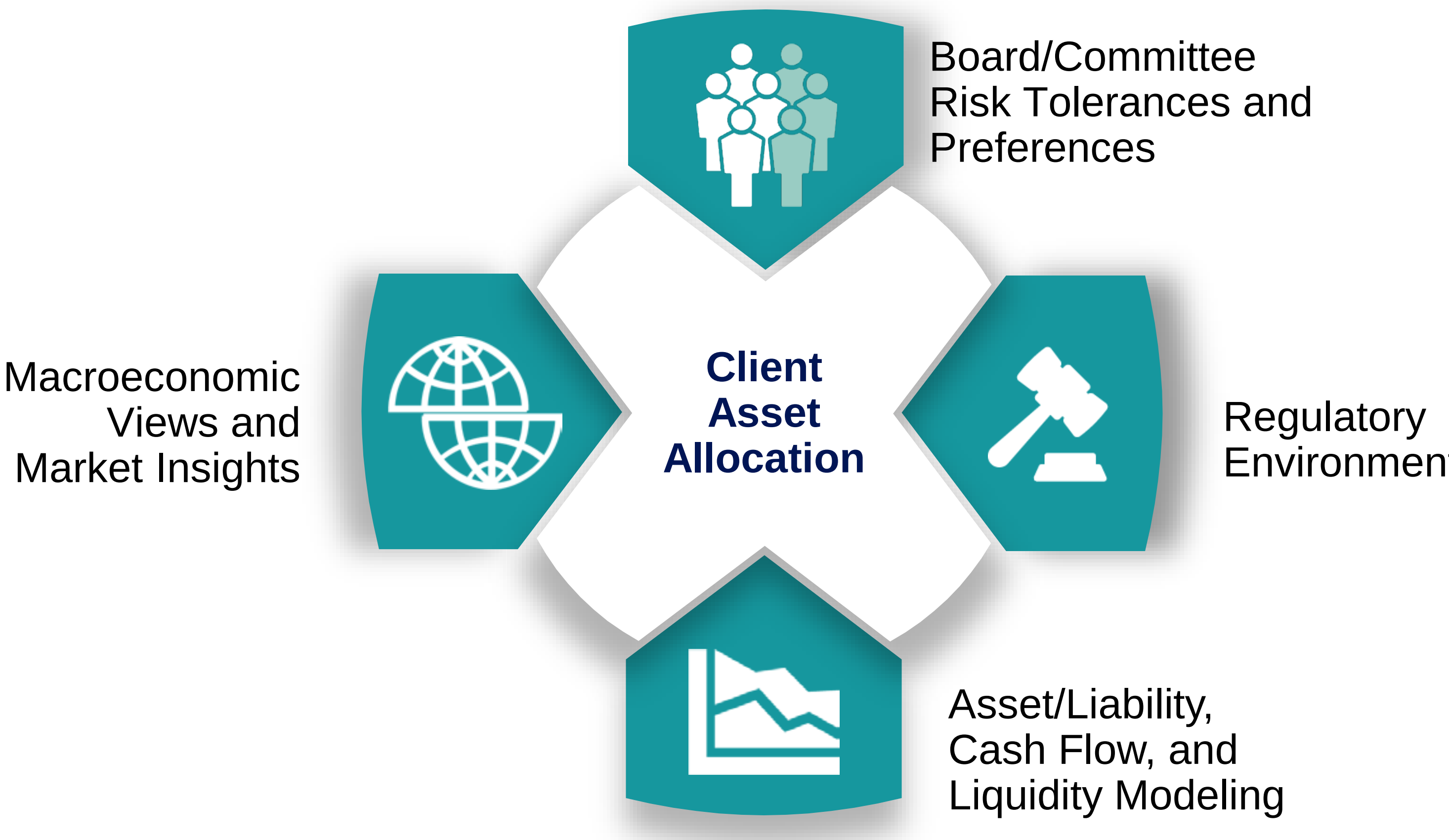
All numbers represent Segal Marco Advisors' forward looking asset class assumptions, and as such, reflect estimates as of a certain date. These assumptions are not a guarantee of future performance, do reflect high levels of uncertainty, and are subject to change without notice.

Investment Characteristics of Asset Classes

- Segal Marco Advisors assumption methodology incorporates a top-down (Capital Asset Pricing Model or "CAPM" reverse optimization) and bottom-up (yield curve for bonds and equity building block for U.S. equities) analyses of asset class characteristics
- Risk, return, and correlations are projected on a forward looking basis in equilibrium, i.e. irrespective of business market cycles
- Asset class returns and risks can be thought of as a summation of multiple factors:
  - Risk free rate
  - Inflation
  - Macro Economic Factors
  - Asset class specific factor
    - Example: liquidity, currency
- Decomposition helps to identify drivers of risk and return
  - Fully understand if an asset class is a true diversifier or not
  - Identifying hedging properties of asset classes

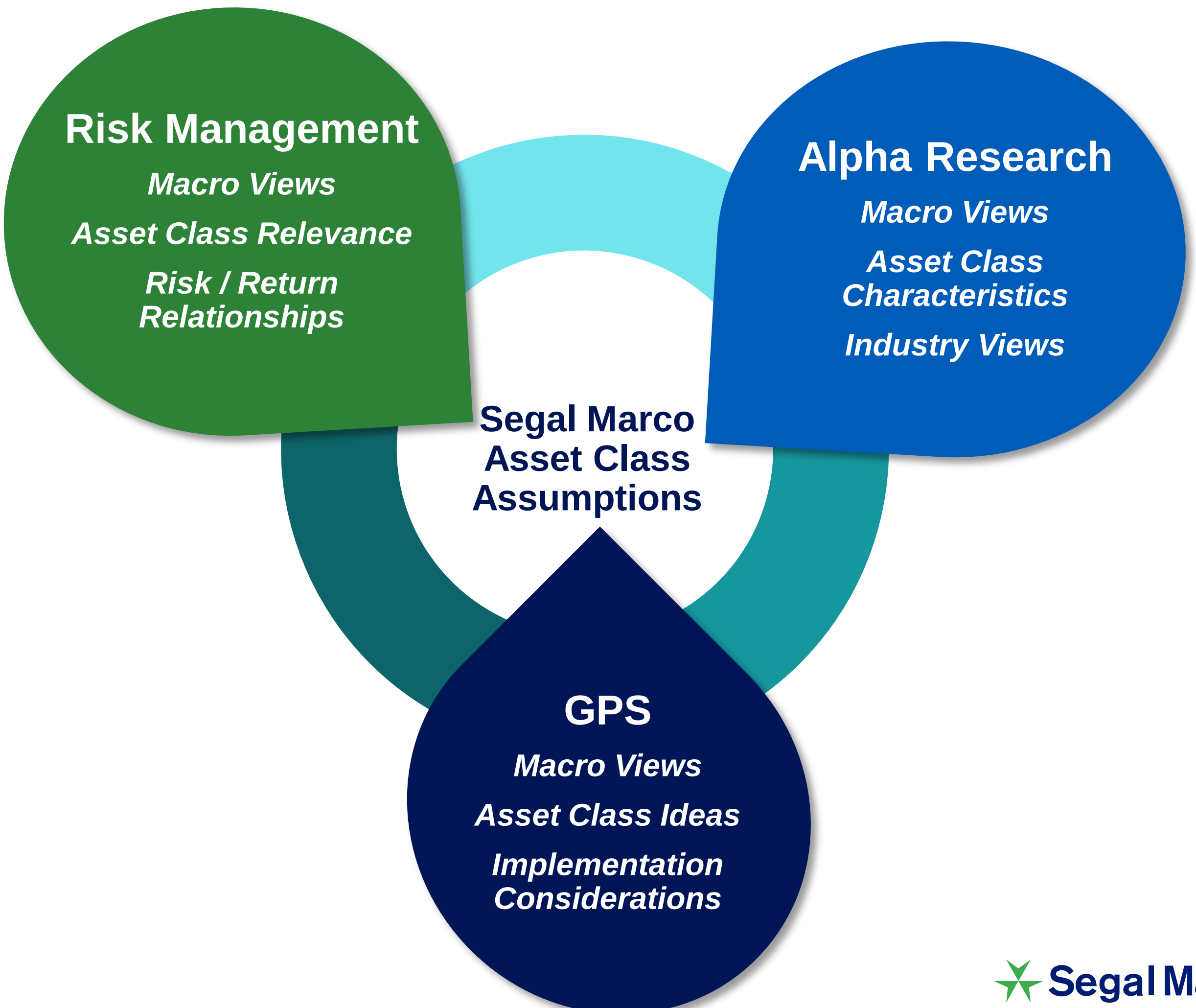
The Asset Allocation Decision: Multiple Information Inputs

Our primary objective is to enable our clients to make <u>informed</u> decisions regarding strategic and/or dynamic asset allocation and portfolio structure.



Research Collaboration for Asset Class Assumptions

- Each research group (Risk Management, Alpha Research, Global Portfolio Solutions/GPS) provides input into the development of new and existing asset class assumptions
- Risk Management is responsible for maintenance, communication and modeling of assumptions



Assumption Methodology: Triangulation

- Our assumption methodology contemplates a triangulation approach, where component inputs and outputs serve as a system of checks-and-balances

Yield Curve Analysis

Current and Projected
Risk Free Rates

Asset Class Volatilities, Returns, Correlations

Building Block Analysis

Equities, Fixed Income, Alternatives

Total Return

Capital Asset Pricing Model Reverse Optimization

Volatilities
Risk Premiums

Risk Free Rate + Risk Premium = Asset Class Total Return

Risk Governance: Defining and Managing Risk

- By breaking risk into distinct categories an organization can more effectively measure and manage risk toward the end of reducing the probability and severity of losses.

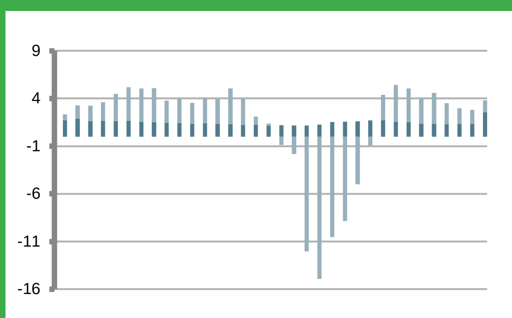
Market Risk*

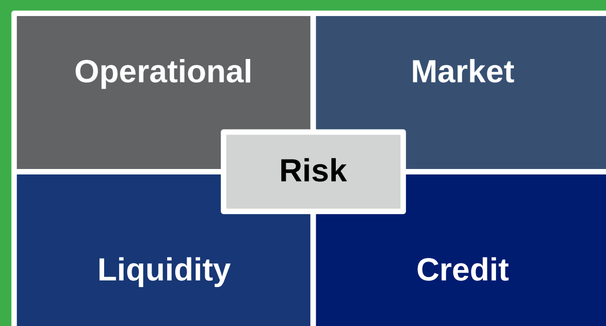
– Risk related to adverse movement in market factors such as asset prices, exchange rates or interest rates.

Liquidity Risk

– Risk of loss resulting from an asset owner's inability to sell an asset in a timely manner and for its actual value.

Market





Operational Risk

– Risk resulting from inadequate or failed internal processes, people and systems of from external events.

Credit Risk

– Risk of loss due to failure of obligors (e.g. bond issuers, tenants) to honor their payments.

* Note: Sample for Illustrative Purposes. Market risk types include, but are not limited to equity, inflation, currency and interest rate risk. Asset / Liability Risk: Risk that liquidity will not be adequate to meet operational requirements or financial obligations.

Capital Market Assumptions: 20 Year

Asset Class	Index Proxy	Arithmetic Return	Geometric Return	Standard Deviation
Fixed Income				
Core Fixed Income	Bloomberg Barclays U.S. Aggregate Index	2.5%	2.4%	5.0%
High Yield	Citigroup High Yield Market	5.2%	4.8%	9.5%
Unconstrained Fixed Income	50% HFRI Event Driven / 50% HFRI Relative Value	5.3%	5.1%	7.8%
Equity				
Large Cap	S&P 500	8.4%	6.9%	18.0%
Mid Cap	Russell Mid Cap	9.1%	7.3%	20.0%
Small Cap	Russell 2000	9.5%	7.0%	23.5%
Developed Equity (Unhedged)	MSCI EAFE (Unhedged)	9.4%	7.6%	20.0%
Emerging Markets Equity	S&P / Intl Finance Corp Investable Composite	11.3%	8.6%	25.0%
Alternatives				
Multi-Asset Class Solutions (MACS)	MACS Custom Index	5.6%	5.3%	8.5%
Private Equity	Venture Economics – All Private Equity	12.6%	10.2%	23.5%
Hedge Fund of Funds	HFRI Fund of Funds Composite	4.5%	4.4%	6.3%
Real Assets				
Real Estate – Core	NCREIF Property Index	5.7%	5.0%	12.5%
Real Estate – Value Add	Courtland Partners Index – Value	8.7%	7.6%	15.5%
Real Estate – Opportunistic	Courtland Partners - Opportunistic	11.1%	9.6%	18.5%
Infrastructure	FTSE Global Core Infrastructure 50/50 Index	7.8%	7.0%	13.5%

Correlations

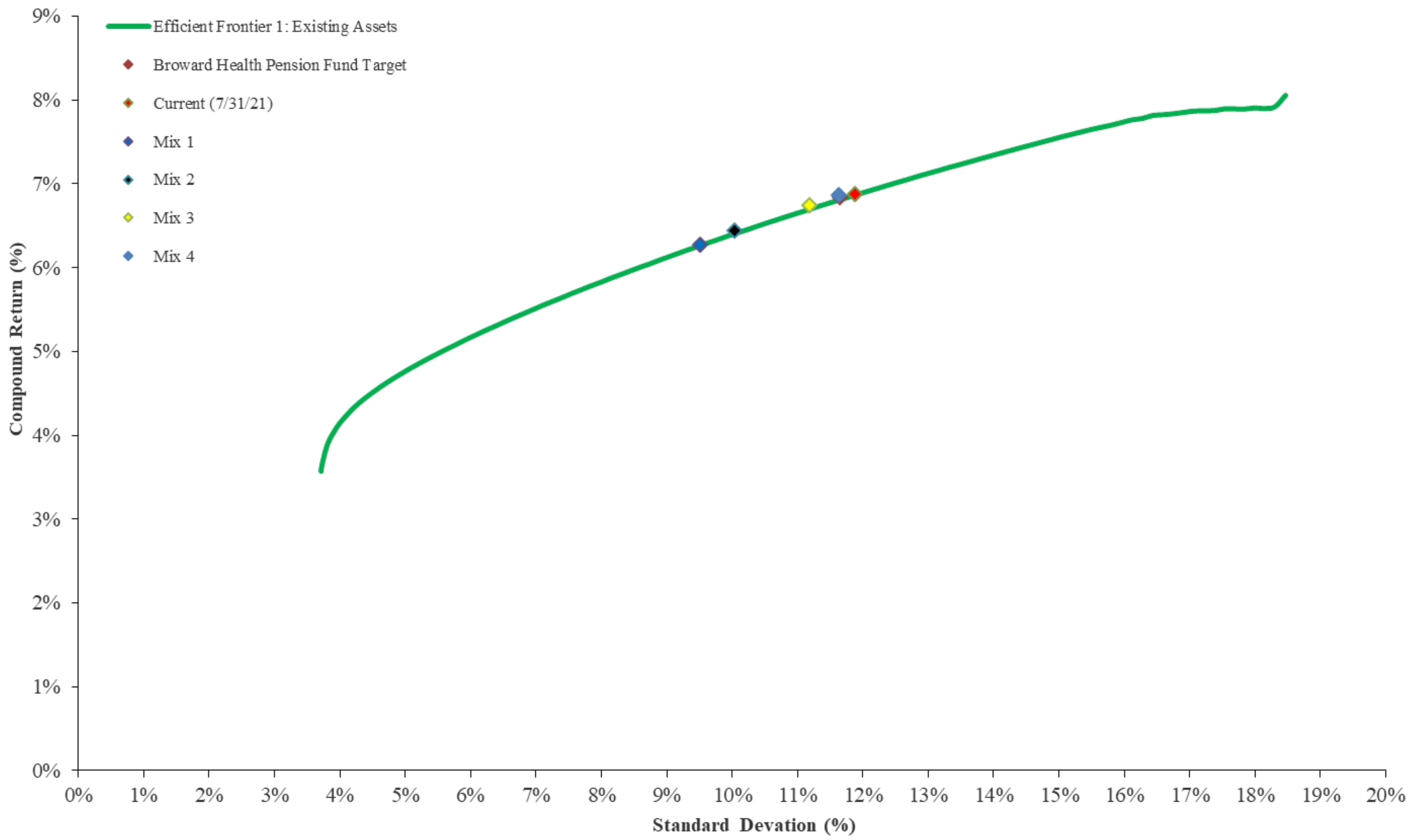
Asset Class	Large Cap	Mid Cap	Small Cap	Developed Equity (U)	Emerging Markets Equity	Core Fixed Income	High Yield	Unconstrained Fixed Income	MACS	Private Equity	Hedge Fund of Funds	Real Estate – Core	Real Estate – Value Add	Real Estate – Opportunistic	Infrastructure
Large Cap	1.00	0.96	0.89	0.86	0.75	-0.09	0.77	0.79	0.79	0.55	0.84	-0.03	0.21	0.43	0.73
Mid Cap	0.96	1.00	0.95	0.83	0.75	-0.05	0.81	0.85	0.78	0.57	0.86	0.01	0.24	0.44	0.75
Small Cap	0.89	0.95	1.00	0.75	0.67	-0.15	0.74	0.79	0.68	0.60	0.80	0.03	0.28	0.47	0.63
Developed Equity (U)	0.86	0.83	0.75	1.00	0.84	-0.05	0.78	0.79	0.86	0.59	0.82	-0.01	0.21	0.47	0.76
Emerging Markets Equity	0.75	0.75	0.67	0.84	1.00	0.08	0.75	0.74	0.80	0.43	0.74	-0.12	0.14	0.41	0.71
Core Fixed Income	-0.09	-0.05	-0.15	-0.05	0.08	1.00	0.19	-0.02	0.15	-0.40	0.03	-0.14	-0.28	-0.43	0.31
High Yield	0.77	0.81	0.74	0.78	0.75	0.19	1.00	0.88	0.77	0.44	0.79	-0.02	0.17	0.24	0.78
Unconstrained Fixed Income	0.79	0.85	0.79	0.79	0.74	-0.02	0.88	1.00	0.76	0.53	0.92	0.04	0.25	0.39	0.69
MACS	0.79	0.78	0.68	0.86	0.80	0.15	0.77	0.76	1.00	0.57	0.81	0.14	0.34	0.49	0.74
Private Equity	0.55	0.57	0.60	0.59	0.43	-0.40	0.44	0.53	0.57	1.00	0.53	0.34	0.54	0.75	0.42
Hedge Fund of Funds	0.84	0.86	0.80	0.82	0.74	0.03	0.79	0.92	0.81	0.53	1.00	-0.04	0.17	0.41	0.66
Real Estate – Core	-0.03	0.01	0.03	-0.01	-0.12	-0.14	-0.02	0.04	0.14	0.34	-0.04	1.00	0.79	0.49	0.05
Real Estate – Value Add	0.21	0.24	0.28	0.21	0.14	-0.28	0.17	0.25	0.34	0.54	0.17	0.79	1.00	0.72	0.25
Real Estate – Opportunistic	0.43	0.44	0.47	0.47	0.41	-0.43	0.24	0.39	0.49	0.75	0.41	0.49	0.72	1.00	0.36
Infrastructure	0.73	0.75	0.63	0.76	0.71	0.31	0.78	0.69	0.74	0.42	0.66	0.05	0.25	0.36	1.00

Asset Mixes – Pension Fund

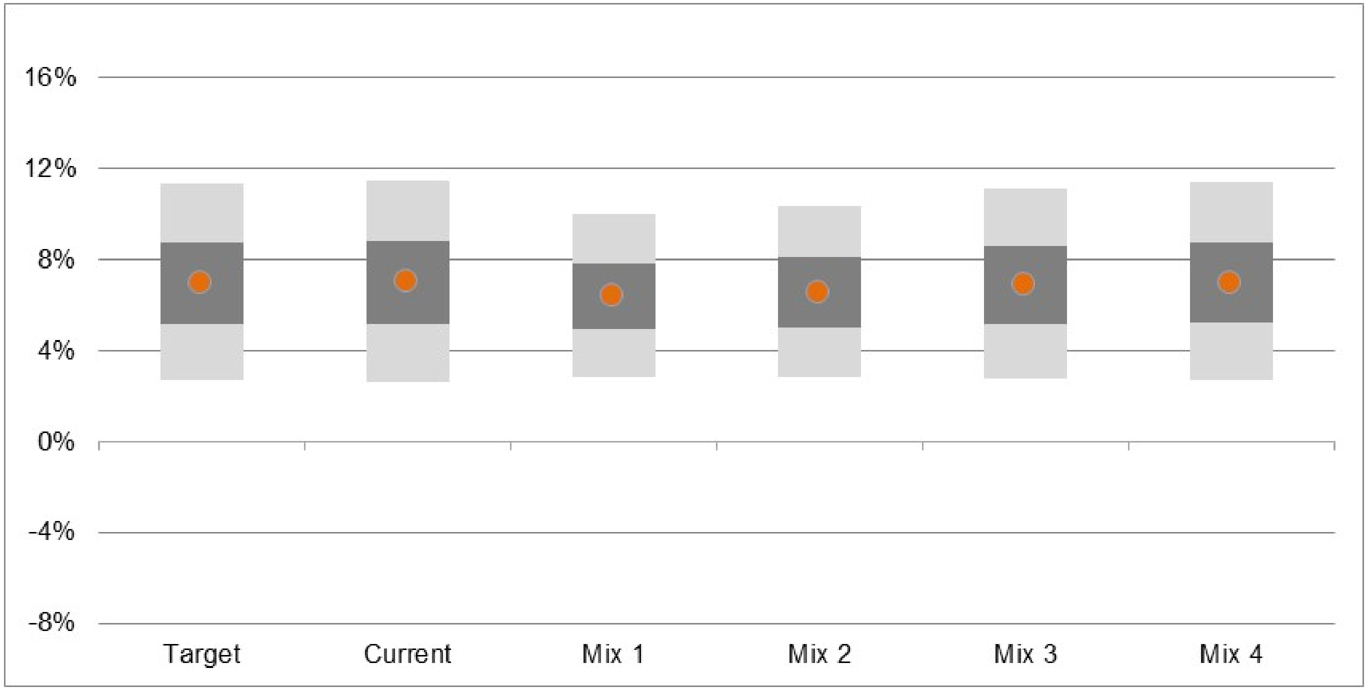
		Broward Health Pension Fund Target	Current (7/31/21)	Mix 1	Mix 2	Mix 3	Mix 4
Fixed - Income	Cash	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%
	Inflation Linked Bonds	0.0%	0.0%	3.0%	0.0%	0.0%	0.0%
	Core Fixed Income	14.0%	11.9%	20.0%	20.0%	16.5%	14.0%
	Unconstrained Fixed Income	8.0%	7.6%	8.0%	8.0%	6.0%	6.0%
Equity	Large Cap	20.0%	23.5%	16.0%	17.0%	18.0%	19.5%
	Mid Cap	5.0%	5.1%	3.0%	3.0%	5.0%	5.0%
	Small Cap	5.0%	5.1%	3.0%	3.0%	5.0%	5.0%
	Developed Equity (U)	15.0%	13.7%	11.0%	12.0%	12.0%	13.0%
	Emerging Markets Equity	4.0%	4.1%	3.0%	4.0%	6.0%	6.0%
Alternatives	MACS	3.0%	2.4%	5.0%	5.0%	5.0%	5.0%
	Private Equity	7.5%	6.5%	7.5%	7.5%	7.5%	7.5%
	Hedge Fund of Funds	3.0%	2.5%	5.0%	5.0%	3.5%	3.5%
	Real Estate (UL)	6.0%	7.0%	6.0%	6.0%	6.0%	6.0%
	Real Estate – Value Add	4.0%	4.6%	4.0%	4.0%	4.0%	4.0%
Real Assets	Infrastructure	5.5%	5.7%	5.5%	5.5%	5.5%	5.5%
	Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% Total Fixed Income	22.0%	19.8%	31.0%	28.0%	22.5%	20.0%
	% Total Equity	49.0%	51.5%	36.0%	39.0%	46.0%	48.5%
	% Total Alternatives	23.5%	23.0%	27.5%	27.5%	26.0%	26.0%
	% Total Real Assets	5.5%	5.7%	5.5%	5.5%	5.5%	5.5%
Risk & Return: Asset Only	Compound Return	6.9%	7.0%	6.4%	6.5%	6.8%	7.0%
	Standard Deviation	11.8%	12.1%	9.7%	10.2%	11.4%	11.8%
	Sharpe Ratio	0.48	0.48	0.51	0.50	0.49	0.48

- Portfolios ‘Mix 1’ through ‘Mix 4’ are new portfolios that make modest changes to the “Target” in order to reduce risk and keep the return the same or slightly lower the return
- Portfolio ‘Mix 1’ adds TIPs at a 3% weight, increases Fixed Income and Alternatives (MACs and Hedge Funds) and reduces Equity by 13%; this reduces the risk and generates a lower return
- Portfolio ‘Mix 2 and Mix 3’ increases Fixed Income and Alternatives (MACs and Hedge Funds) and reduces Equity; this reduces the risk and generates a lower return
- Portfolio ‘Mix 4’ slightly reduces Fixed Income and Equity and increases Alternatives by a 2.5% weight; this produces similar risk but generates a slightly higher return
- Sharpe ratios, or a measure of risk adjusted returns, modestly increase over the Target via the build up to Alternatives

Asset Mixes – Pension Fund (continued)



Pension Fund Percentiles –
20 Year Compound Rate of Return



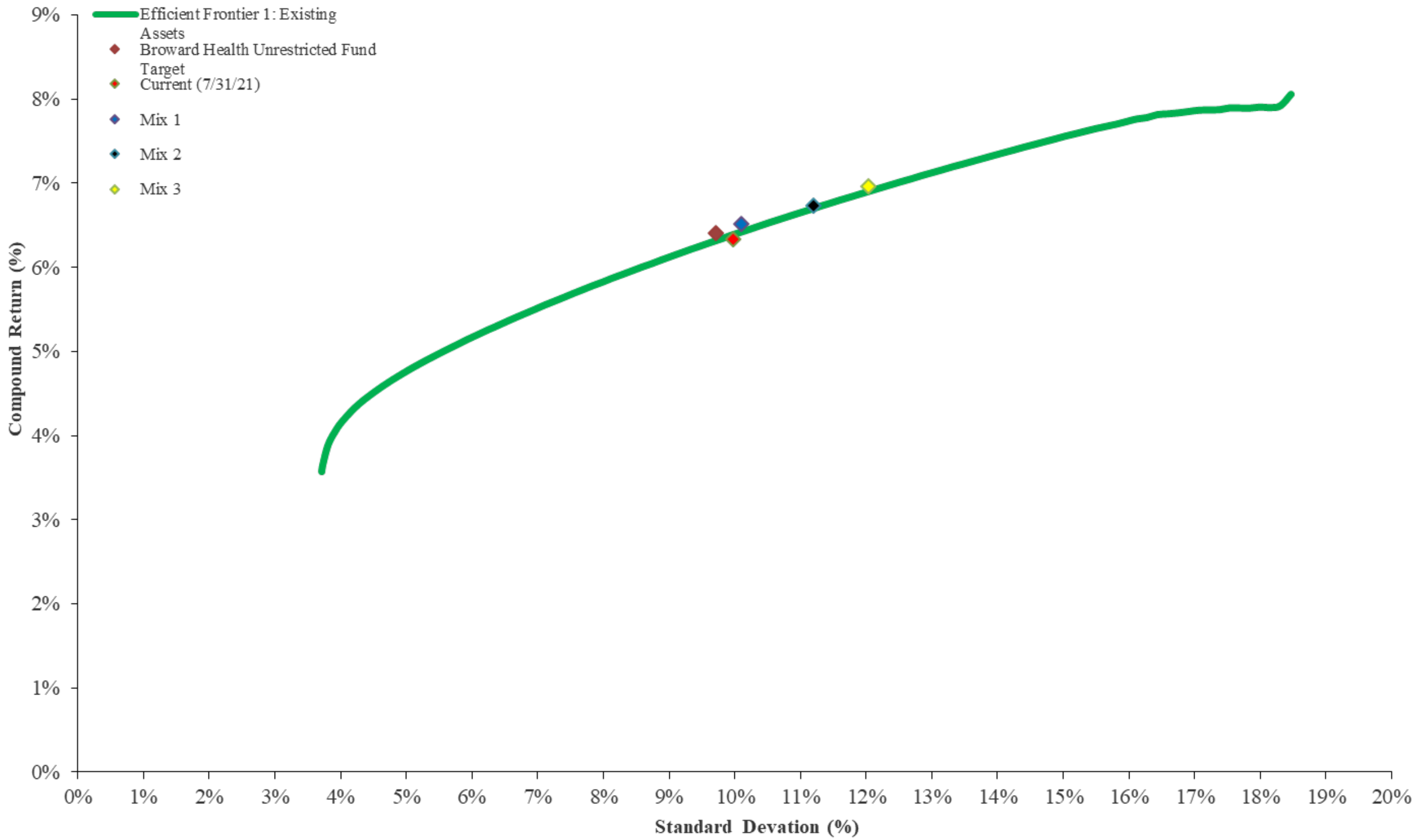
	Target	Current	Mix 1	Mix 2	Mix 3	Mix 4
Very Good (95th Percentile)	11.4%	11.5%	10.0%	10.4%	11.1%	11.4%
Good (75th Percentile)	8.7%	8.8%	7.8%	8.1%	8.6%	8.8%
Median (50th Percentile)	6.9%	7.0%	6.4%	6.5%	6.8%	7.0%
Poor (25th Percentile)	5.2%	5.2%	4.9%	5.0%	5.2%	5.2%
Very Poor (5th Percentile)	2.7%	2.6%	2.9%	2.9%	2.8%	2.7%

Asset Mixes – Unrestricted Fund

		Broward Health Unrestricted Fund Target	Current (7/31/21)	Mix 1	Mix 2	Mix 3
Fixed - Income	Cash	0.0%	0.3%	0.0%	0.0%	0.0%
	Inflation Linked Bonds	0.0%	0.0%	0.0%	0.0%	0.0%
	Core Fixed Income	19.5%	19.6%	18.0%	17.0%	14.0%
	Unconstrained Fixed Income	10.0%	10.6%	8.0%	6.0%	5.0%
Equity	Large Cap	14.0%	16.7%	17.0%	21.0%	24.0%
	Mid Cap	3.0%	3.2%	3.0%	3.0%	3.0%
	Small Cap	3.0%	3.2%	3.0%	3.0%	3.0%
	Developed Equity (U)	12.0%	12.8%	12.0%	16.0%	17.0%
	Emerging Markets Equity	4.0%	3.5%	4.0%	5.0%	6.0%
Alternatives	MACS	7.0%	7.4%	6.0%	4.0%	3.0%
	Private Equity	7.5%	5.9%	7.5%	7.5%	8.0%
	Hedge Fund of Funds	3.0%	2.9%	4.0%	3.5%	3.0%
	Real Estate (UL)	7.0%	5.6%	7.0%	6.0%	6.0%
	Real Estate – Value Add	5.0%	3.7%	5.0%	4.0%	4.0%
Real Assets	Infrastructure	5.0%	4.6%	5.5%	4.0%	4.0%
	Sum	100.0%	100.0%	100.0%	100.0%	100.0%
	% Total Fixed Income	29.5%	30.5%	26.0%	23.0%	19.0%
	% Total Equity	36.0%	39.4%	39.0%	48.0%	53.0%
	% Total Alternatives	29.5%	25.5%	29.5%	25.0%	24.0%
	% Total Real Assets	5.0%	4.6%	5.5%	4.0%	4.0%
Risk & Return: Asset Only	Compound Return	6.5%	6.4%	6.6%	6.8%	7.1%
	Standard Deviation	9.9%	10.1%	10.3%	11.4%	12.2%
	Sharpe Ratio	0.52	0.50	0.51	0.49	0.48

- Portfolios ‘Mix 1’ through ‘Mix 3’ are new portfolios that make modest changes to the “Target” in order to slightly increase risk and to increase the return
- Portfolio ‘Mix 1’ slightly reduces Fixed Income with a corresponding increase to Equity and Real Assets; this slightly increases the risk and generates a slightly higher return
- Portfolio ‘Mix 2 and Mix 3’ reduces Fixed Income, Alternatives and Real Assets while increasing Equity; both Mix 2 and 3 produces higher risk, slightly lower sharpe ratio, but generates a higher return (30-60 bps)

Asset Mixes – Unrestricted Fund (continued)



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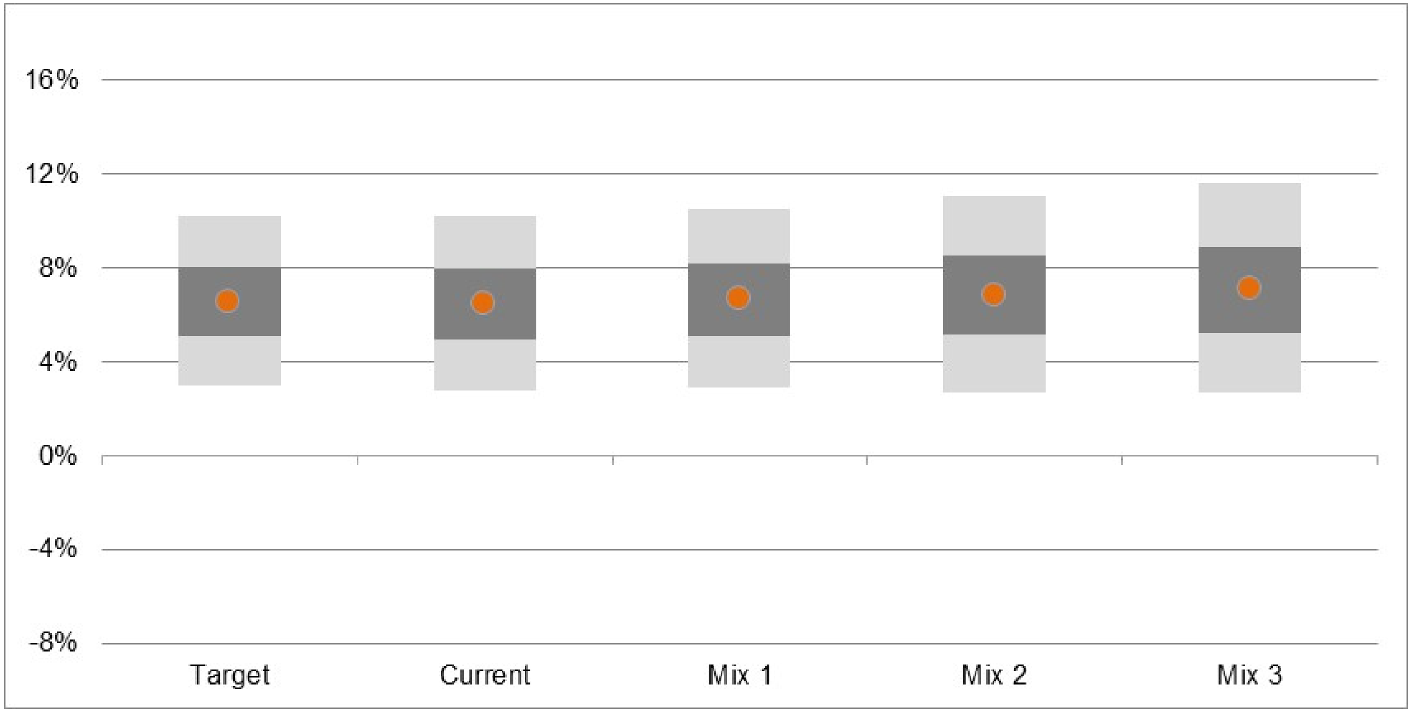
Unrestricted Fund Percentiles – 20 Year Compound Rate of Return



Very Good (95th Percentile)	10.3%	10.2%	10.5%	11.1%	11.6%
Good (75th Percentile)	8.0%	8.0%	8.2%	8.6%	8.9%
Median (50th Percentile)	6.5%	6.4%	6.6%	6.8%	7.1%
Poor (25th Percentile)	5.1%	4.9%	5.1%	5.1%	5.2%
Very Poor (5th Percentile)	3.0%	2.8%	2.9%	2.7%	2.7%

Appendix

Correlation (2021 Factored)

	Asset Class	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Cash	1.00	-0.90	0.05	0.03	-0.02	0.05	0.02	-0.33	-0.24	-0.10	0.01	0.05	-0.10	-0.19	-0.18	-0.22	-0.22	-0.16	-0.21	-0.11	-0.17	-0.15	-0.13	-0.15	-0.39	-0.25	-0.22	-0.32	-0.04	-0.23	-0.25	-0.08	-0.62	-0.51	-0.26	-0.10	-0.45	-0.30	-0.23	-0.15
2	Stable Value	-0.90	1.00	0.00	0.02	0.11	0.00	0.00	0.34	0.26	0.11	0.02	-0.01	0.11	0.19	0.18	0.22	0.23	0.14	0.19	0.10	0.16	0.15	0.14	0.12	0.41	0.24	0.21	0.31	0.06	0.22	0.24	0.12	0.65	0.51	0.25	0.18	0.42	0.21	0.24	0.16
3	Short Duration	0.05	0.00	1.00	0.97	0.76	0.89	0.50	0.07	0.20	0.38	0.65	0.72	0.64	-0.05	-0.05	-0.02	-0.12	0.02	0.01	0.14	-0.01	0.28	0.19	-0.33	0.06	0.04	0.00	0.01	0.28	-0.11	0.04	0.01	-0.19	-0.29	-0.45	0.75	-0.05	-0.34	-0.06	0.28
4	Intermediate Duration	0.03	0.02	0.97	1.00	0.82	0.96	0.52	0.10	0.24	0.40	0.67	0.83	0.74	-0.05	-0.05	-0.01	-0.12	0.00	0.00	0.13	-0.02	0.32	0.18	-0.39	0.11	0.06	-0.01	0.03	0.30	-0.11	0.06	-0.02	-0.18	-0.31	-0.49	0.76	-0.02	-0.34	-0.05	0.32
5	Inflation Linked Bonds	-0.02	0.11	0.76	0.82	1.00	0.80	0.57	0.24	0.38	0.50	0.70	0.72	0.62	0.13	0.12	0.15	0.06	0.18	0.18	0.31	0.17	0.45	0.31	-0.26	0.20	0.21	0.18	0.19	0.38	0.06	0.21	0.18	-0.10	-0.16	-0.32	0.68	-0.05	-0.34	0.16	0.42
6	Core Fixed Income	0.05	0.00	0.89	0.96	0.80	1.00	0.51	0.05	0.19	0.35	0.66	0.93	0.74	-0.09	-0.09	-0.05	-0.15	-0.05	-0.05	0.08	-0.06	0.29	0.15	-0.40	0.07	0.03	-0.06	-0.02	0.35	-0.14	0.03	-0.10	-0.14	-0.28	-0.43	0.74	-0.04	-0.29	-0.09	0.31
7	Dev. Mkts. Fixed Income (U)	0.02	0.00	0.50	0.52	0.57	0.51	1.00	0.20	0.39	0.65	0.97	0.44	0.42	0.21	0.21	0.22	0.10	0.36	0.38	0.47	0.30	0.49	0.33	-0.16	0.15	0.23	0.27	0.23	0.33	0.14	0.23	0.40	-0.13	-0.19	-0.04	0.48	-0.25	-0.25	0.14	0.50
8	Bank Loans	-0.33	0.34	0.07	0.10	0.24	0.05	0.20	1.00	0.83	0.51	0.24	0.03	0.21	0.67	0.65	0.73	0.66	0.62	0.67	0.56	0.67	0.63	0.55	0.37	0.91	0.77	0.75	0.89	0.16	0.68	0.77	0.50	0.01	0.18	0.25	0.46	0.11	0.08	0.63	0.65
9	High Yield	-0.24	0.26	0.20	0.24	0.38	0.19	0.39	0.83	1.00	0.71	0.46	0.15	0.28	0.78	0.77	0.81	0.74	0.78	0.77	0.75	0.81	0.77	0.77	0.44	0.71	0.79	0.84	0.88	0.29	0.74	0.79	0.64	-0.02	0.17	0.24	0.51	0.17	0.04	0.66	0.78
10	Emerging Markets Debt (50% LC)	-0.10	0.11	0.38	0.40	0.50	0.35	0.65	0.51	0.71	1.00	0.70	0.27	0.42	0.53	0.53	0.55	0.44	0.69	0.65	0.79	0.63	0.75	0.67	0.14	0.43	0.54	0.60	0.60	0.27	0.46	0.54	0.58	-0.10	0.08	0.17	0.47	0.03	-0.07	0.42	0.77
11	Global Fixed Income (U)	0.01	0.02	0.65	0.67	0.70	0.66	0.97	0.24	0.46	0.70	1.00	0.57	0.53	0.24	0.25	0.26	0.14	0.40	0.41	0.51	0.34	0.57	0.41	-0.15	0.19	0.28	0.31	0.28	0.38	0.17	0.28	0.38	-0.15	-0.20	-0.09	0.62	-0.18	-0.26	0.18	0.56
12	Long -Term Fixed Income	0.05	-0.01	0.72	0.83	0.72	0.93	0.44	0.03	0.15	0.27	0.57	1.00	0.70	-0.12	-0.11	-0.08	-0.18	-0.10	-0.10	0.01	-0.10	0.23	0.07	-0.46	0.07	0.00	-0.10	-0.05	0.35	-0.17	0.00	-0.17	-0.13	-0.31	-0.44	0.63	-0.02	-0.25	-0.11	0.25
13	Municipal Bonds	-0.10	0.11	0.64	0.74	0.62	0.74	0.42	0.21	0.28	0.42	0.53	0.70	1.00	-0.03	-0.03	0.02	-0.07	0.06	0.07	0.11	0.01	0.31	0.14	-0.28	0.27	0.16	0.03	0.16	0.23	-0.04	0.16	0.01	-0.02	-0.12	-0.36	0.65	0.12	-0.23	-0.14	0.33
14	US Equity	-0.19	0.19	-0.05	-0.05	0.13	-0.09	0.21	0.67	0.78	0.53	0.24	-0.12	-0.03	1.00	1.00	0.97	0.92	0.86	0.86	0.75	0.97	0.74	0.79	0.56	0.52	0.85	0.93	0.81	0.36	0.86	0.85	0.55	-0.03	0.21	0.43	0.23	0.16	0.18	0.72	0.73
15	Large Cap	-0.18	0.18	-0.05	-0.05	0.12	-0.09	0.21	0.65	0.77	0.53	0.25	-0.11	-0.03	1.00	1.00	0.96	0.89	0.86	0.85	0.75	0.97	0.73	0.79	0.55	0.50	0.84	0.92	0.79	0.38	0.85	0.84	0.55	-0.03	0.21	0.43	0.22	0.16	0.18	0.70	0.73
16	Mid Cap	-0.22	0.22	-0.02	-0.01	0.15	-0.05	0.22	0.73	0.81	0.55	0.26	-0.08	0.02	0.97	0.96	1.00	0.95	0.83	0.86	0.75	0.94	0.78	0.78	0.57	0.58	0.86	0.94	0.85	0.33	0.87	0.86	0.55	0.01	0.24	0.44	0.28	0.20	0.19	0.74	0.75
17	Small Cap	-0.22	0.23	-0.12	-0.12	0.06	-0.15	0.10	0.66	0.74	0.44	0.14	-0.18	-0.07	0.92	0.89	0.95	1.00	0.75	0.79	0.67	0.86	0.70	0.68	0.60	0.53	0.80	0.90	0.79	0.24	0.87	0.80	0.52	0.03	0.28	0.47	0.19	0.21	0.22	0.74	0.63
18	Developed Equity (U)	-0.16	0.14	0.02	0.00	0.18	-0.05	0.36	0.62	0.78	0.69	0.40	-0.10	0.06	0.86	0.86	0.83	0.75	1.00	0.95	0.84	0.95	0.79	0.86	0.59	0.48	0.82	0.88	0.79	0.34	0.76	0.82	0.60	-0.01	0.21	0.47	0.30	0.15	0.15	0.62	0.76
19	International Small Cap	-0.21	0.19	0.01	0.00	0.18	-0.05	0.38	0.67	0.77	0.65	0.41	-0.10	0.07	0.86	0.85	0.86	0.79	0.95	1.00	0.83	0.93	0.78	0.82	0.52	0.54	0.86	0.92	0.83	0.32	0.81	0.86	0.61	0.00	0.16	0.46	0.28	0.08	0.17	0.64	0.74
20	Emerging Markets Equity	-0.11	0.10	0.14	0.13	0.31	0.08	0.47	0.56	0.75	0.79	0.51	0.01	0.11	0.75	0.75	0.75	0.67	0.84	0.83	1.00	0.82	0.78	0.80	0.43	0.46	0.74	0.85	0.74	0.31	0.70	0.74	0.64	-0.12	0.14	0.41	0.34	0.03	0.09	0.61	0.71
21	Global Equity (U)	-0.17	0.16	-0.01	-0.02	0.17	-0.06	0.30	0.67	0.81	0.63	0.34	-0.10	0.01	0.97	0.97	0.94	0.86	0.95	0.93	0.82	1.00	0.79	0.85	0.57	0.51	0.86	0.94	0.83	0.38	0.84	0.86	0.60	-0.05	0.20	0.44	0.27	0.14	0.16	0.70	0.77
22	Global REITs	-0.15	0.15	0.28	0.32	0.45	0.29	0.49	0.63	0.77	0.75	0.57	0.23	0.31	0.74	0.73	0.78	0.70	0.79	0.78	0.78	0.79	1.00	0.80	0.46	0.55	0.70	0.76	0.73	0.36	0.68	0.70	0.53	0.10	0.27	0.40	0.55	0.21	0.17	0.56	0.87
23	MACS	-0.13	0.14	0.19	0.18	0.31	0.15	0.33	0.55	0.77	0.67	0.41	0.07	0.14	0.79	0.79	0.78	0.68	0.86	0.82	0.80	0.85	0.80	1.00	0.57	0.45	0.81	0.82	0.76	0.53	0.64	0.81	0.52	0.14	0.34	0.49	0.40	0.27	0.24	0.55	0.74
24	Private Equity	-0.15	0.12	-0.33	-0.39	-0.26	-0.40	-0.16	0.37	0.44	0.14	-0.15	-0.46	-0.28	0.56	0.55	0.57	0.60	0.59	0.52	0.43	0.57	0.46	0.57	1.00	0.31	0.53	0.55	0.53	0.25	0.51	0.53	0.41	0.34	0.54	0.75	0.08	0.31	0.37	0.47	0.42
25	Private Credit	-0.39	0.41	0.06	0.11	0.20	0.07	0.15	0.91	0.71	0.43	0.19	0.07	0.27	0.52	0.50	0.58	0.53	0.48	0.54	0.46	0.51	0.55	0.45	0.31	1.00	0.71	0.63	0.84	0.12	0.54	0.71	0.38	0.12	0.23	0.25	0.48	0.14	0.11	0.50	0.54
26	Hedge Fund of Funds	-0.25	0.24	0.04	0.06	0.21	0.03	0.23	0.77	0.79	0.54	0.28	0.00	0.16	0.85	0.84	0.86	0.80	0.82	0.86	0.74	0.86	0.70	0.81	0.53	0.71	1.00	0.94	0.92	0.48	0.80	1.00	0.54	-0.04	0.17	0.41	0.38	0.13	0.24	0.62	0.66
27	Hedge Funds- Equity Long/Short	-0.22	0.21	0.00	-0.01	0.18	-0.06	0.27	0.75	0.84	0.60	0.31	-0.10	0.03	0.93	0.92	0.94	0.90	0.88	0.92	0.85	0.94	0.76	0.82	0.55	0.63	0.94	1.00	0.91	0.34	0.89	0.94	0.63	-0.06	0.18	0.44	0.30	0.09	0.18	0.74	0.71
28	Unconstrained Fixed Income	-0.32	0.31	0.01	0.03	0.19	-0.02	0.23	0.89	0.88	0.60	0.28	-0.05	0.16	0.81	0.79	0.85	0.79	0.79	0.83	0.74	0.83	0.73	0.76	0.53	0.84	0.92	0.91	1.00	0.25	0.80	0.92	0.61	0.04	0.25	0.39	0.40	0.16	0.17	0.71	0.69
29	Hedge Funds- Global Macro	-0.04	0.06	0.28	0.30	0.38	0.35	0.33	0.16	0.29	0.27	0.38	0.35	0.23	0.36	0.38	0.33	0.24	0.34	0.32	0.31	0.38	0.36	0.53	0.25	0.12	0.48	0.34	0.25	1.00	0.23	0.48	0.24	0.12	0.15	0.32	0.38	-0.02	0.32	0.13	0.37
30	Hedge Funds- Activist	-0.23	0.22	-0.11	-0.11	0.06	-0.14	0.14	0.68	0.74	0.46	0.17	-0.17	-0.04	0.86	0.85	0.87	0.87	0.76	0.81	0.70	0.84	0.68	0.64	0.51	0.54	0.80	0.89	0.80	0.23	1.00	0.80	0.50	-0.03	0.20	0.46	0.19	0.09	0.25	0.70	0.62
31	Hedge Funds- Opportunistic	-0.25	0.24	0.04	0.06	0.21	0.03	0.23	0.77	0.79	0.54	0.28	0.00	0.16	0.85	0.84	0.86	0.80	0.82	0.86	0.74	0.86	0.70	0.81	0.53	0.71	1.00	0.94	0.92	0.48	0.80	1.00	0.54	-0.04	0.17	0.41	0.38	0.13	0.24	0.62	0.66
32	Commodities	-0.08	0.12	0.01	-0.02	0.18	-0.10	0.40	0.50	0.64	0.58	0.38	-0.17	0.01	0.55	0.55	0.55	0.52	0.60	0.61	0.64	0.60	0.53	0.52	0.41	0.38	0.54	0.63	0.61	0.24	0.50	0.54	1.00	0.00	0.14	0.33	0.17	-0.17	0.01	0.57	0.49
33	Real Estate (UL)	-0.62	0.65	-0.19	-0.18	-0.10	-0.14	-0.13	0.01	-0.02	-0.10	-0.15	-0.13	-0.02	-0.03	-0.03	0.01	0.03	-0.01	0.00	-0.12	-0.05	0.10	0.14	0.34	0.12	-0.04	-0.06	0.04	0.12	-0.03	-0.04	0.00	1.00	0.79	0.49	-0.05	0.40	0.33	0.03	0.05
34	Real Estate - Value Add	-0.51	0.51	-0.29	-0.31	-0.16	-0.28	-0.19	0.18	0.17	0.08	-0.20	-0.31	-0.12	0.21	0.21	0.24	0.28	0.21	0.16	0.14	0.20	0.27	0.34	0.54	0.23	0.17	0.18	0.25	0.15	0.20	0.17	0.14	0.79	1.00	0.72	-0.09	0.40	0.51	0.24	0.25
35	Real Estate - Opportunistic	-0.26	0.25	-0.45	-0.49	-0.32	-0.43	-0.04	0.25	0.24	0.17	-0.09	-0.44	-0.36	0.43	0.43	0.44	0.47	0.47	0.46	0.41	0.44	0.40	0.49	0.75	0.25	0.41	0.44	0.39	0.32	0.46	0.41	0.33	0.49	0.72	1.00	-0.05	0.25	0.66	0.31	0.36
36	Real Estate Debt	-0.10	0.18	0.75	0.76	0.68	0.74	0.48	0.46	0.51	0.47	0.62	0.63	0.65	0.23	0.22	0.28	0.19	0.30	0.28	0.34	0.27	0.55	0.40	0.08	0.48	0.38	0.30	0.40	0.38	0.19	0.38	0.17	-0.05	-0.09	-0.05	1.00	0.13	-0.14	0.12	0.51
37	Timber	-0.45	0.42	-0.05	-0.02	-0.05	-0.04	-0.25	0.11	0.17	0.03	-0.18	-0.02	0.12	0.16	0.16	0.20	0.21	0.15	0.08	0.03	0.14	0.21	0.27	0.31	0.14	0.13	0.09	0.16	-0.02	0.09	0.13	-0.17	0.40	0.40	0.25	0.13	1.00	0.44	0.08	0.18
38	Farmland	-0.30	0.21	-0.34	-0.34	-0.34	-0.29	-0.25	0.08	0.04	-0.07	-0.26	-0.25	-0.23	0.18	0.18	0.19	0.22	0.15	0.17	0.09	0.16	0.17	0.24	0.37	0.11	0.24	0.18	0.17	0.32	0.25	0.24	0.01	0.33	0.51	0.66	-0.14	0.44	1.00	0.02	0.10
39	Oil & Gas	-0.23	0.24	-0.06	-0.05	0.16	-0.09	0.14	0.63	0.66	0.42	0.18	-0.11	-0.14	0.72	0.70	0.74	0.74	0.62	0.64	0.61	0.70	0.56	0.55	0.47	0.50	0.62	0.74	0.71	0.13	0.70	0.62	0.57	0.03	0.24	0.31	0.12	0.08	0.02	1.00	0.57
40	Infrastructure	-0.15	0.16	0.28	0.32	0.42	0.31	0.50	0.65	0.78	0.77	0.56	0.25	0.33	0.73	0.73	0.75	0.63	0.76	0.74	0.71	0.77	0.87	0.74	0.42	0.54	0.66	0.71	0.69	0.37	0.62	0.66	0.49	0.05	0.25	0.36	0.51	0.18	0.10	0.57	1.00

Capital Market Assumptions: 10 Year

Asset Class	Index Proxy	Arithmetic Return	Geometric Return	Standard Deviation
Fixed Income				
Cash	90 Day U.S. Treasury Bill	1.0%	1.0%	2.0%
Stable Value	Hueler Stable Value	1.1%	1.1%	2.0%
Short Duration	Bloomberg Barclays 1-5 Year Govt/Credit	1.1%	1.1%	3.0%
Intermediate Duration	Bloomberg Barclays Intermediate Govt/Credit	1.2%	1.1%	4.0%
TIPS	Bloomberg Barclays TIPS Index	1.7%	1.5%	5.8%
Core Fixed Income	Bloomberg Barclays U.S. Aggregate Index	1.6%	1.5%	5.0%
Developed Markets Fixed Income	Citigroup Non-U.S. World Gov't Bond (Unhedged)	1.3%	0.9%	9.5%
Bank Loans	Credit Suisse Leveraged Loan	3.5%	3.2%	7.5%
High Yield	Citigroup High Yield Market	4.3%	3.9%	9.5%
Emerging Market Debt (50% LC)	50% JPM EMBI / 50% JPM GBI	4.5%	3.9%	11.5%
Unconstrained Fixed Income	50% HFRI Event Driven / 50% HFRI Relative Value	4.5%	4.2%	7.8%
Long-Term Fixed Income	Bloomberg Barclays U.S. Long Govt/Credit	1.6%	1.0%	11.0%
Municipal Bonds	Bloomberg Barclays Municipal Bond	2.5%	2.3%	5.8%
Equity				
US Equity	Russell 3000	7.8%	6.2%	18.6%
Large Cap	S&P 500	7.5%	6.0%	18.0%
Mid Cap	Russell Mid Cap	8.2%	6.4%	20.0%
Small Cap	Russell 2000	8.6%	6.2%	23.5%
Developed Equity (Unhedged)	MSCI EAFE (Unhedged)	8.5%	6.7%	20.0%
International Small Cap	MSCI EAFE Small Cap	9.6%	7.2%	23.5%
Emerging Markets Equity	S&P / Intl Finance Corp Investable Composite	10.4%	7.7%	25.0%
Global Equity (Unhedged)	MSCI World (Unhedged)	8.0%	6.5%	18.4%
Global REITS	FTSE EPRA Nareit Global	6.5%	5.0%	18.2%
Alternatives				
Multi-Asset Class Solutions (MACS)	MACS Custom Index	4.8%	4.4%	8.5%
Private Equity	Venture Economics – All Private Equity	11.8%	9.4%	23.5%
Private Credit	S&P / LSTA Middle Market Index	7.0%	6.6%	9.0%
Hedge Fund of Funds	HFRI Fund of Funds Composite	3.7%	3.5%	6.3%
Hedge Funds – Equity Long/Short	HFRI Equity Hedge (Total) Index	5.5%	4.9%	11.4%
Hedge Funds – Global Macro	HFRI Macro	3.0%	2.8%	6.0%
Hedge Funds – Activist	HFRX Activist	5.3%	4.6%	12.0%
Hedge Funds – Opportunistic	HFRI Fund of Funds Composite	5.8%	5.3%	9.5%
Real Assets				
Commodities	Bloomberg Commodity Index	4.8%	3.0%	20.0%
Real Estate – Core	NCREIF Property Index	4.9%	4.1%	12.5%
Real Estate – Value Add	Courtland Partners Index – Value	7.8%	6.7%	15.5%
Real Estate – Opportunistic	Courtland Partners - Opportunistic	10.2%	8.7%	18.5%
Real Estate Debt	Bloomberg Barclays CMBS IG	3.3%	3.0%	7.5%
Timber	NCREIF Timberland	4.9%	4.5%	9.8%
Farmland	NCREIF Farmland	6.9%	6.1%	13.2%
Oil & Gas	S&P Oil & Gas Exploration & Production Select Industry	11.4%	7.5%	30.0%
Infrastructure	FTSE Global Core Infrastructure 50/50 Index	7.0%	6.1%	13.5%

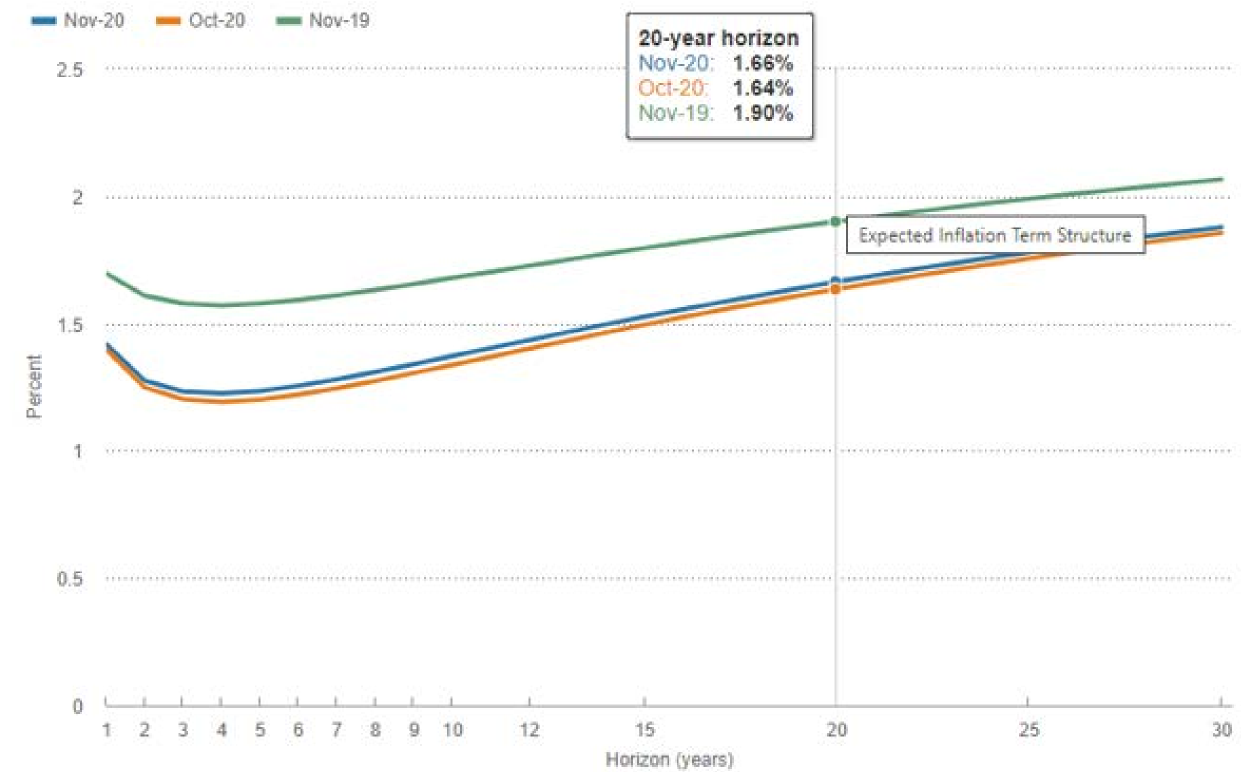
Capital Market Assumptions: 20 Year

Asset Class	Index Proxy	Arithmetic Return	Geometric Return	Standard Deviation
Fixed Income				
Cash	90 Day U.S. Treasury Bill	1.9%	1.9%	2.0%
Stable Value	Hueler Stable Value	2.0%	2.0%	2.0%
Short Duration	Bloomberg Barclays 1-5 Year Govt/Credit	2.0%	2.0%	3.0%
Intermediate Duration	Bloomberg Barclays Intermediate Govt/Credit	2.0%	2.0%	4.0%
TIPS	Bloomberg Barclays TIPS Index	2.6%	2.4%	5.8%
Core Fixed Income	Bloomberg Barclays U.S. Aggregate Index	2.5%	2.4%	5.0%
Developed Markets Fixed Income	Citigroup Non-U.S. World Gov't Bond (Unhedged)	2.2%	1.8%	9.5%
Bank Loans	Credit Suisse Leveraged Loan	4.4%	4.1%	7.5%
High Yield	Citigroup High Yield Market	5.2%	4.8%	9.5%
Emerging Market Debt (50% LC)	50% JPM EMBI / 50% JPM GBI	5.4%	4.8%	11.5%
Unconstrained Fixed Income	50% HFRI Event Driven / 50% HFRI Relative Value	5.3%	5.1%	7.8%
Long-Term Fixed Income	Bloomberg Barclays U.S. Long Govt/Credit	2.5%	1.9%	11.0%
Municipal Bonds	Bloomberg Barclays Municipal Bond	3.4%	3.2%	5.8%
Equity				
US Equity	Russell 3000	8.6%	7.1%	18.6%
Large Cap	S&P 500	8.4%	6.9%	18.0%
Mid Cap	Russell Mid Cap	9.1%	7.3%	20.0%
Small Cap	Russell 2000	9.5%	7.0%	23.5%
Developed Equity (Unhedged)	MSCI EAFE (Unhedged)	9.4%	7.6%	20.0%
International Small Cap	MSCI EAFE Small Cap	10.5%	8.0%	23.5%
Emerging Markets Equity	S&P / Intl Finance Corp Investable Composite	11.3%	8.6%	25.0%
Global Equity (Unhedged)	MSCI World (Unhedged)	8.9%	7.4%	18.4%
Global REITS	FTSE EPRA Nareit Global	7.4%	5.9%	18.2%
Alternatives				
Multi-Asset Class Solutions (MACS)	MACS Custom Index	5.6%	5.3%	8.5%
Private Equity	Venture Economics – All Private Equity	12.6%	10.2%	23.5%
Private Credit	S&P / LSTA Middle Market Index	7.9%	7.5%	9.0%
Hedge Fund of Funds	HFRI Fund of Funds Composite	4.5%	4.4%	6.3%
Hedge Funds – Equity Long/Short	HFRI Equity Hedge (Total) Index	6.4%	5.8%	11.4%
Hedge Funds – Global Macro	HFRI Macro	3.9%	3.7%	6.0%
Hedge Funds – Activist	HFRX Activist	6.1%	5.5%	12.0%
Hedge Funds – Opportunistic	HFRI Fund of Funds Composite	6.6%	6.2%	9.5%
Real Assets				
Commodities	Bloomberg Commodity Index	5.7%	3.8%	20.0%
Real Estate – Core	NCREIF Property Index	5.7%	5.0%	12.5%
Real Estate – Value Add	Courtland Partners Index – Value	8.7%	7.6%	15.5%
Real Estate – Opportunistic	Courtland Partners - Opportunistic	11.1%	9.6%	18.5%
Real Estate Debt	Bloomberg Barclays CMBS IG	4.2%	3.9%	7.5%
Timber	NCREIF Timberland	5.8%	5.3%	9.8%
Farmland	NCREIF Farmland	7.8%	7.0%	13.2%
Oil & Gas	S&P Oil & Gas Exploration & Production Select Industry	12.2%	8.4%	30.0%
Infrastructure	FTSE Global Core Infrastructure 50/50 Index	7.8%	7.0%	13.5%

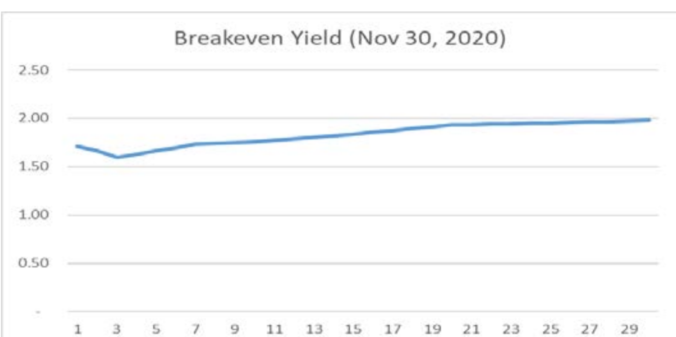
Guiding Themes for 2021 Assumptions

Themes	Comments
Interest rates fall during 2020 in reaction to global pandemic caused by the Coronavirus.	• Yields drop by 100 basis points across the entire maturity spectrum in 2020, impacting the risk free rate and short term/cash projections at ten and twenty years for 2021 assumptions • Zero bound interest rates for many developed economies, with little or no U.S. Fed intervention projected until 2023
Low and slow global growth projected to resume in the second half of 2021. U.S. and global labor markets will take time to retool, re-educate and recover from effects of the pandemic.	• Breakeven inflation climbs above 2% as we move into February 2021. The Fed provides guidance indicating greater "tolerance" for inflationary periods above 2%, but still targeting 2% average. Wage inflation is a key driver • Global inflation projected to remain relatively low across developed and emerging markets
Central Banks' monetary and fiscal stimulus unprecedented in support of global shutdowns. Country debt levels reach record levels for many developed economies, with the potential for more stimulus	• Global fiscal stimulus totaling over $20 trillion appears to have partially mitigated an extended period of weak demand. Additional stimulus continues to be negotiated. The U.S. yield curve shifts down, though has steepened somewhat as we move into 2021. • Lower interest rates, and therefore lower risk free rates for our capital market assumptions, also drives risk premiums higher for several risk asset classes. • Changes to risk premiums are mixed across equities and alternatives.
Stable and recovering growth will depend on mankind's ability to control the Coronavirus with efficient distribution of efficacious vaccines and therapeutics. In the U.S., political uncertainty has been replaced with the "blue wave" democratic legislature and presidency.	• The new administration in the U.S. is keenly focused on getting vaccine shots in arms, however questions around regulation, taxes and trade and next in line. • Brexit moves ahead while trade agreements remain a sticking point. • While some broken supply chains have been reestablished, bottlenecks still exist across certain sectors like computer chip manufacturing and distribution.
Valuations across asset classes are still mixed, though U.S. equity prices remain high by most measures.	• Global monetary and fiscal accommodative measures continue to support equity markets. • Generally, fixed income reflects low yields, tight spreads, and high duration, however pockets of opportunity still exist. • With continued uncertainty regarding the virus, earnings sustainability remains questionable for global economies in 2021
Interest in private market investments still exists with some rich valuations and continued high levels of dry powder	• High prices and strong capital flows continue to be headwinds for mainstream strategies. • More attractive pricing inefficiencies may exist for smaller and niche equity and debt strategies. • Targeted long term expectations should reward patient and selective investors, with some volatility

Inflation Expectations



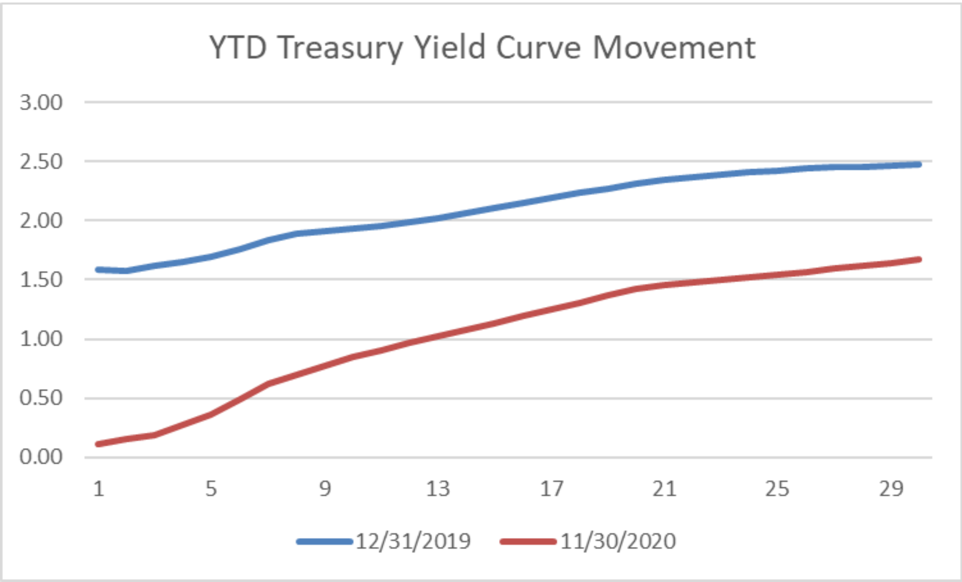
Source: Federal Reserve Bank of Cleveland calculations based on data from Blue Chip, Bloomberg, Bureau of Labor Statistics.



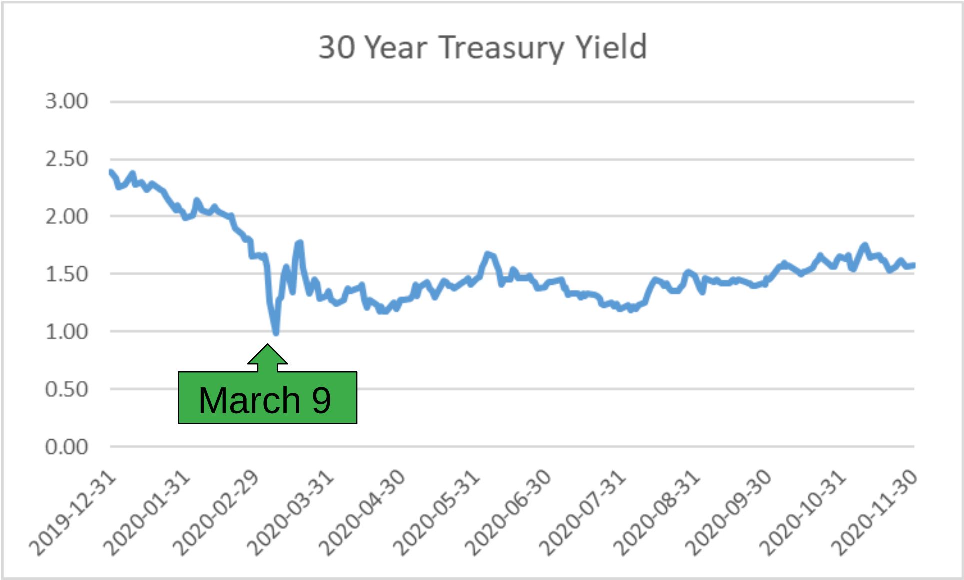
12/9/2020			
Maturity	CPN Yield	TIPS Yield	Breakeven
10	0.95%	-0.96%	1.91%
20	1.48%	-0.53%	2.01%
30	1.69%	-0.32%	2.01%

- Cleveland Fed produces inflation projection models
- Projections for November 2020 and one year prior are shown at the left
- Projected inflation ranges from 1.2% at the short end to 1.9% at the long end
- The breakeven inflation level implied by Nominal Treasuries vs. TIPS is also an inflation projection
- Looking at all these indicators together **we believe an inflation assumption of 2.1% is appropriate**
- Reflects our overweighting the probability of an inflationary scenario (vs. the market) and is consistent with Philadelphia Fed survey of professional forecasters

Treasury Yield Curve Comparison YTD

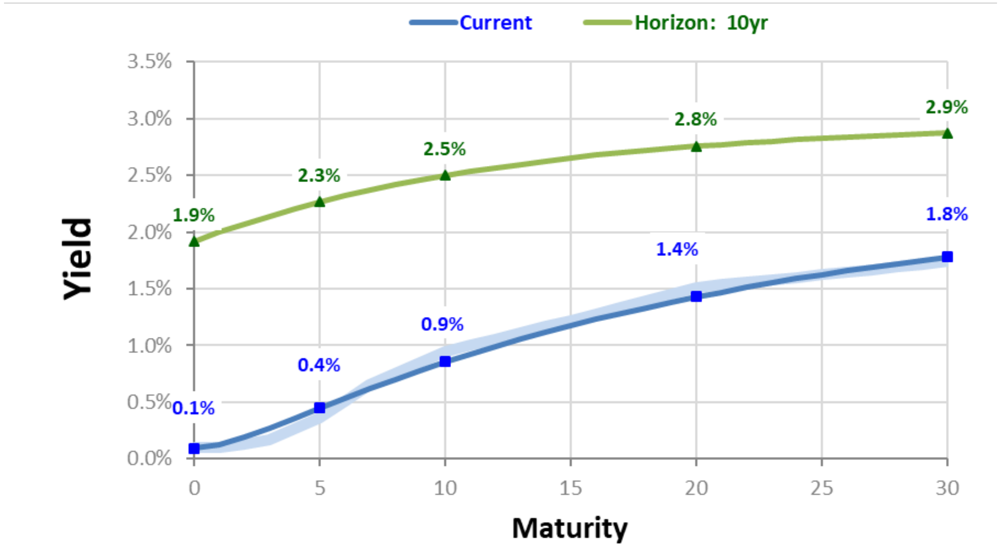


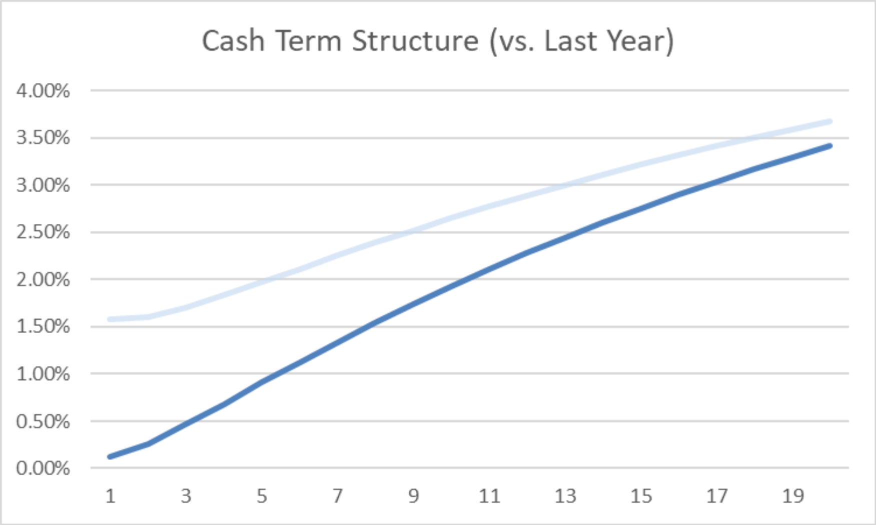
- Treasury yields are down about 100bps on average through November of 2020
- The drop in yields is across the maturity spectrum, but is a bit more dramatic at the short end than the long end
- FOMC reduced Fed Funds target range to 0.00% to 0.25% with two rate cuts in March, where it has remained



- Long Treasury yields are at historic lows
- The yield briefly dipped below 1% in March 2020

2021 CMA Cash Model





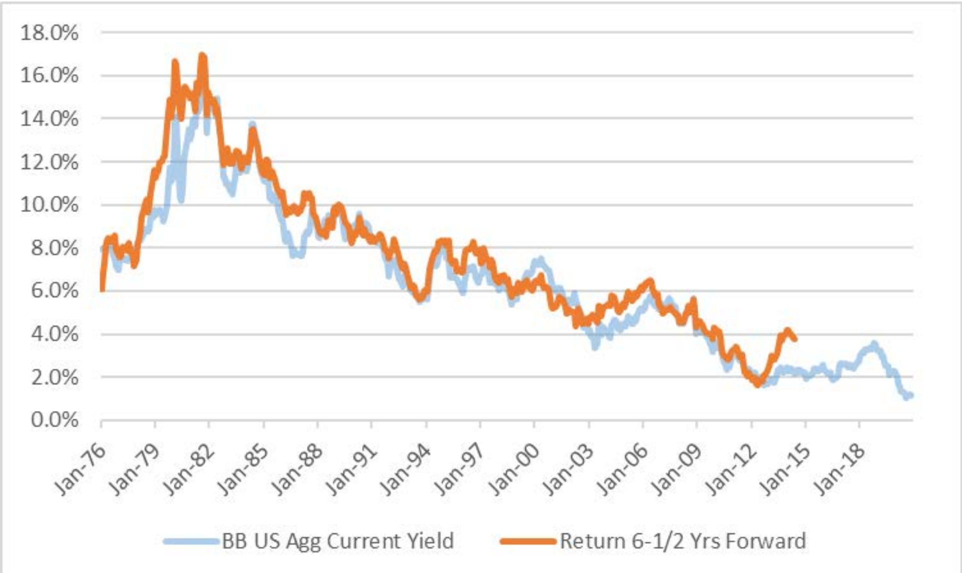
	Cash Return for Horizon	Short Rate at Horizon	Treasury Yield at Year 10	Treasury Yield Today*	Yield Change First 10 Yrs
5 Yr	0.49%	0.98%	2.26%	0.45%	1.82%
10 Yr	1.01%	1.91%	2.50%	0.85%	1.64%
15 Yr	1.48%	2.64%	2.65%	1.18%	1.48%
20 Yr	**1.90%**	3.21%	2.76%	1.43%	1.33%

* From the model (not actual)

- **Long-term cash return is 1.90%** (**a reduction of 75bps** vs last yr.)
- Short rate is projected at 1.9% at year 10, below the Fed's median "longer run" forecast of 2.5%
- Treasury yields expected to increase 133-182 bps over the next 10 years
- Short rate remains below 0.50% until Year 3

Assumed sharpe ratio for long duration bonds in the model above is 0.005

U.S. Core Fixed Income



- Current yield is a very good predictor of core fixed income returns ~6-7 years forward
- Yield on Bloomberg Barclays US Aggregate Bond Index at November 2020 is ~1.2%
- 2021 CMA cash return is of 0.6% for a 6-7 year horizon
- Plus a **proposed risk premium of 0.6%** (10bps higher than last year) would imply a 6-7 year forward return for US core fixed income of 1.3% (in-line with current yield)

2020 CMA

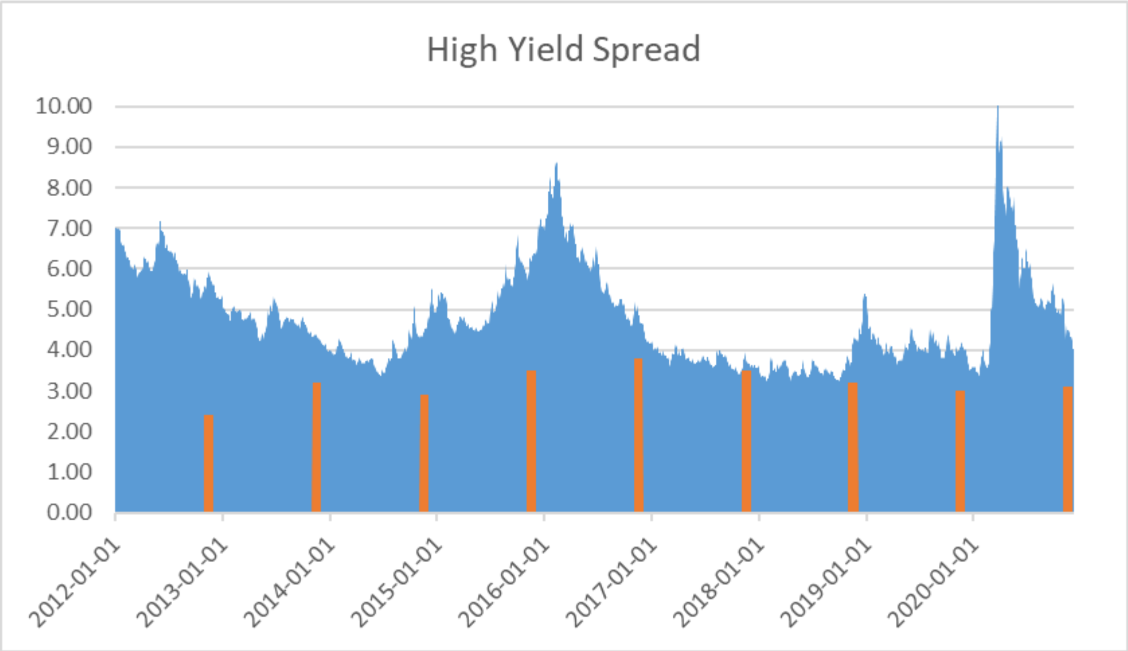
Government Securities	
Duration Compensation	0.10%
Share	0.45
Total Premium	0.05%
Non Government Securities	
Duration Compensation	0.10%
Average IG Spread	1.08%
Fraction Spread Earned	0.75
Avg Spread Earned	0.81%
Subtotal	0.91%
Share	0.55
Total Premium	0.50%
Risk Premium	**0.54%**
Assumed	0.50%

2021 CMA

Government Securities	
Duration Compensation	0.10%
Share	0.45
Total Premium	0.05%
Non Government Securities	
Duration Compensation	0.10%
Average IG Spread	1.25%
Fraction Spread Earned	0.70
Avg Spread Earned	0.88%
Subtotal	0.98%
Share	0.55
Total Premium	0.54%
Risk Premium	**0.58%**
Assumed	0.60%

Disclaimer
All numbers represent Segal Marco Advisors' forward looking asset class assumptions, and as such, reflect estimates as of a certain date. These assumptions are not a guarantee of future performance, do reflect high levels of uncertainty and are subject to change without notice.

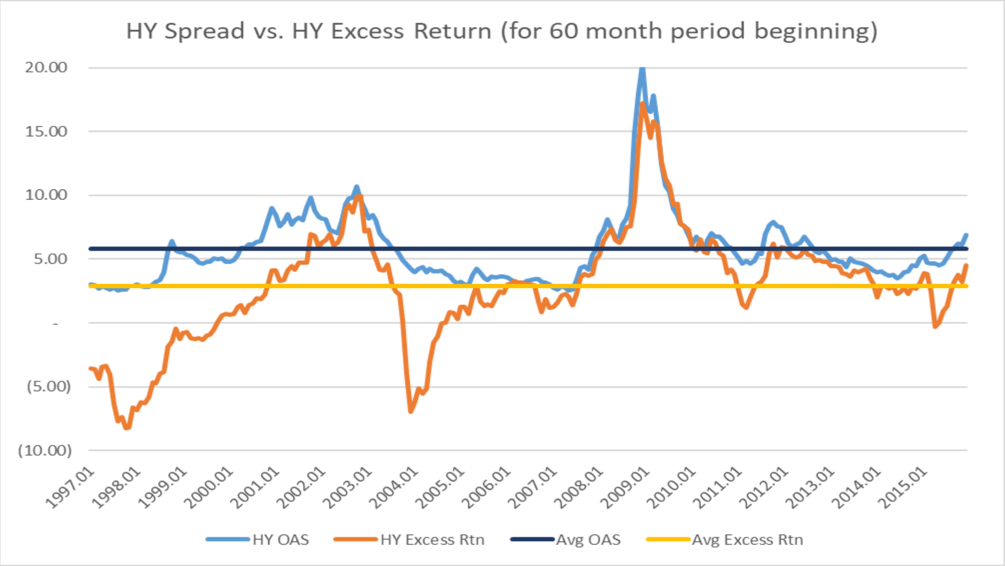
High Yield Fixed Income

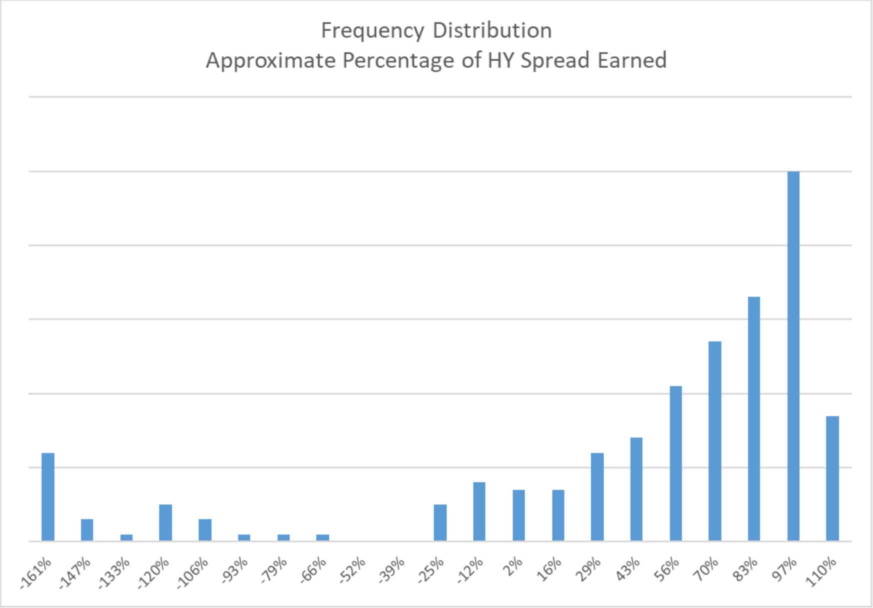


- High-yield bond spreads are about 40bps higher than at last year-end, after expanding significantly during the initial COVID-19 outbreak – and normalizing since then.
- Reverse optimization implies a risk premium for high-yield bonds of about 3.0%
- Something in the range of 3.0% - 3.4% seems appropriate given the increase in spreads – **propose increasing risk premium to 3.3%** (increase of 30bps over last year) consistent with year-over-year increase in spreads

High Yield Bonds – Supporting Data

- Chart of High Yield performance vs. Intermediate Treasuries for rolling 60 month periods
- High Yield spreads have averaged about 579 bps, and High Yield performance over Treasuries has averaged about 287 bps (about 50% of the spread)
- Early in the time series performance was highly negative
- Does appear to be *reasonably good* predictive value in inspecting the HY spread





- When performance (above Treasuries) has been positive it has largely fallen in the range of 56% to 97% of the HY spread
- The current HY spread is about 400 bps (after rallying from a calendar-year high of 1100bps in March) - a risk premium of about 330 bps would represent an expected percent of spread to be earned of about 83%

Equity Building Blocks – Decomposition of US Equity Returns

- Inflation
  - Breakeven Yield and Inflation Models
- Dividend Yield
  - Historical analysis
  - Consider impact of share buybacks
- Real Earnings Growth
  - Historical analysis
  - Projected GDP Growth, Labor Force Growth + Productivity Growth
- Valuation Adjustment
  - Combination of Derived impact of current CAPE and P/E moving to Averages

Inflation * Dividend Yield * Real Earnings Growth * Valuation Adjustment = Compound Return

Equity Building Blocks – U.S. Large Cap Equity

Historical Annualized Return (Nov/Nov)	90 Day T-Bills	S&P 500 (US Large Cap Equity)	Premium	Realized Volatility (Annual)
1980-2020	4.3%	11.3%	7.0%	15.0%
1990-2020	2.6%	10.7%	8.1%	14.6%
2000-2020	1.5%	7.3%	5.8%	15.0%
2010-2020	0.6%	14.2%	13.6%	13.6%
2021 CMA Long-term				
20-yr horizon	1.9%	6.9%	5.0%	18.0%

- Our equity risk premium is conservative compared to realized risk premiums over historical periods
  - Inflation and dividend yields are lower than historical averages
  - Valuations higher than historical average
  - Projected real GDP growth muted
- Current implied volatility for long-dated at-the-money S&P500 options is about 21% - directionally, an increase to last year's volatility assumption (of 17%) seems appropriate

Inflation		Dividend Yield		Real Earnings Growth		Valuation Adjustment		Long-term Compound Return
2.1%	*	1.9%	*	2.9%	*	-0.1%	~	6.9%

- 6.9% long-term median return with 18.0% annual volatility implies a mean annualized **arithmetic return of 8.4%**
- With long-term cash assumption of 1.9%, the implied *arithmetic risk premium* for US large cap equity is 6.50% (a 100bps increase over last year)
- Expected long-term returns for US Large Cap Equity up ~25bps (arithmetic), and ~10bps (geometric) year-over-year

Equity Building Blocks – Developed International Equity

Historical Annualized Return (Nov/Nov)	90 Day T-Bills	MSCI EAFE (u)	Premium	Realized Volatility (Annual)
1980-2020	4.3%	8.6%	4.3%	17.1%
1990-2020	2.6%	6.0%	3.4%	16.3%
2000-2020	1.5%	4.9%	3.4%	16.9%
2010-2020	0.6%	6.3%	5.7%	15.3%
2021 CMA Long-term				
20-yr horizon	1.9%	7.6%	5.7%	20.0%

- Dividend yields are materially higher for developed international stocks than for US stocks
- Generally dividend yields have been in a range between 3% and 3.5% but have dropped below 2.5% during late 2020
- Nominal earnings growth is comprised of inflation expectations and expected real earnings growth that are both a bit lower than in the US

Dividend Yield		Earnings Growth (nom.)		Valuation Adjustment		US Dollar Depreciation		Long-term Compound Return
2.9%	*	4.2%	*	0.2%	*	0.2%	~	7.6%

- 7.6% long-term median return with 20.0% annual volatility implies a mean annualized **arithmetic return of 9.4%**
- With long-term cash assumption of 1.9%, the implied *arithmetic risk premium* for developed international equity is 7.5%

Private Core Real Estate

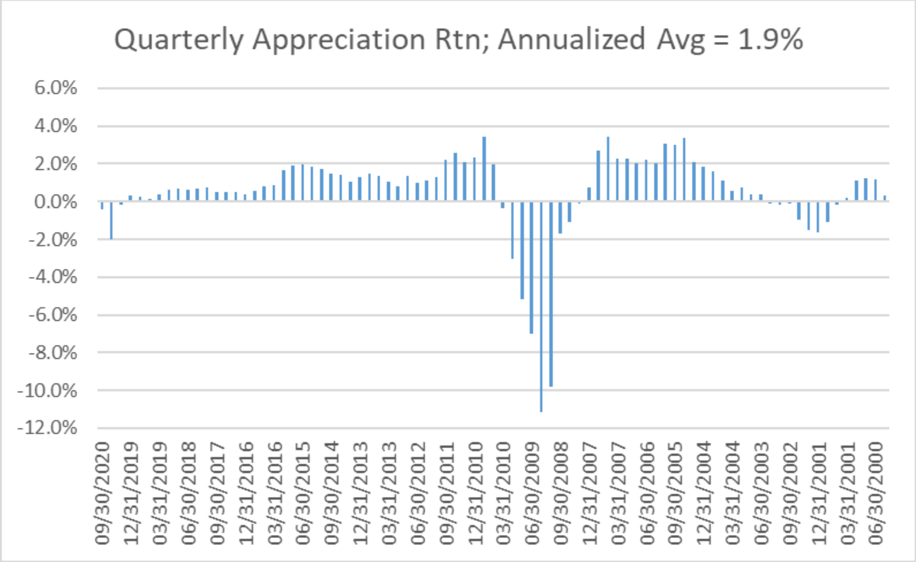
- Overall impact of the Pandemic to private real estate as a whole has not been as bad as initially expected, however some sectors have been disproportionately affected
  - Retail and lodging sectors suffered the biggest declines, outlook for both sectors remains challenging over the shorter term
  - Industrial and apartments have been more resilient, with valuations for the most part holding up, particularly for industrial
  - Office real estate faces the greatest uncertainty as work-from-home may remain
- Outside retail and lodging, little evidence of a widespread 'COVID discount' due to limited transaction volume
  - Conversely, there is even some talk of a 'Covid premium' for industrial assets.
- On balance, risk premium for core real estate to remain the same as last year, nominal return expectations lower in line with reduction to risk free rate

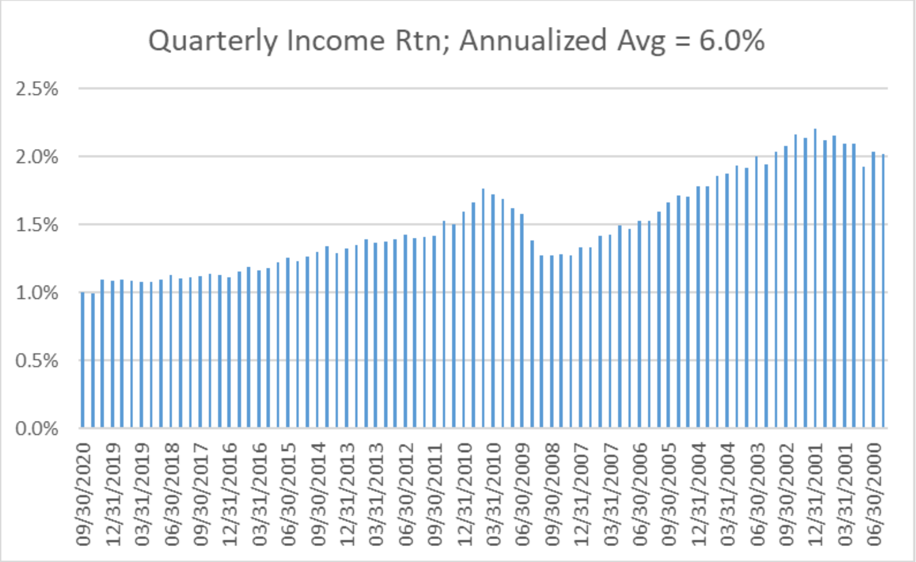
Core Real Estate	**Total Return**	**Income**	**Appreciation**
2020 Nominal Rtn Assumption	*6.50%*	*4.50%*	*2.00%*
2021 Nominal Rtn Assumption	**5.75%**	**4.00%**	**1.75%**
2021 Cash	1.90%		
2021 Risk Premium	3.85%		

Private Real Estate – Historical Data

- Real estate appreciation was slowing materially for a few years pre-pandemic
- Since COVID-19 pandemic property appreciation has turned negative
- Appreciation over the next few years is expected to trail historical averages

- Property income return had been trending downwards for some time
- Since COVID-19 pandemic trend has accelerated somewhat





Commodities, Timber, Farmland, Oil & Gas, Infrastructure

- Commodities
  - Risk Premium up marginally (+15 bps) 2020 to 3.80%
  - Continued price appreciation in some sectors, and price stability in others, supports some notion of reflation. Volatility from exogenous events will remain.

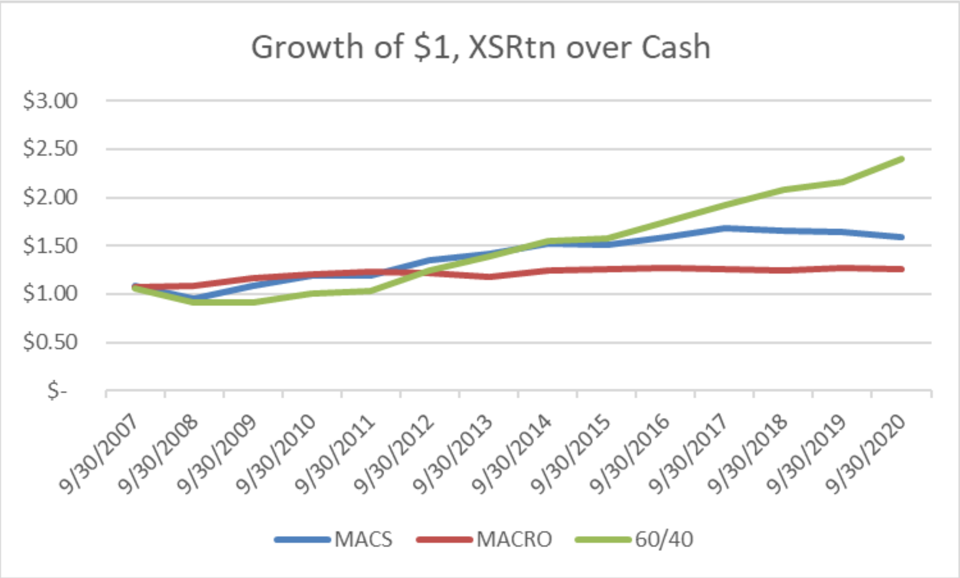
- Timber
  - Risk Premium of 3.9%, down 30 bps from 2020
    - » Additional reduction from lower cash assumption
  - Despite strong housing single family housing demand in 2020 and into 2021, timber outlook will be an economic mixed bag for various sectors

- Farmland
  - Risk Premium of 5.9%, up 25 bps from 2020
  - Production uncertainty (limitations) for crops like corn and soybeans improves prospects for profitability for the foreseeable future. Demand remains high.

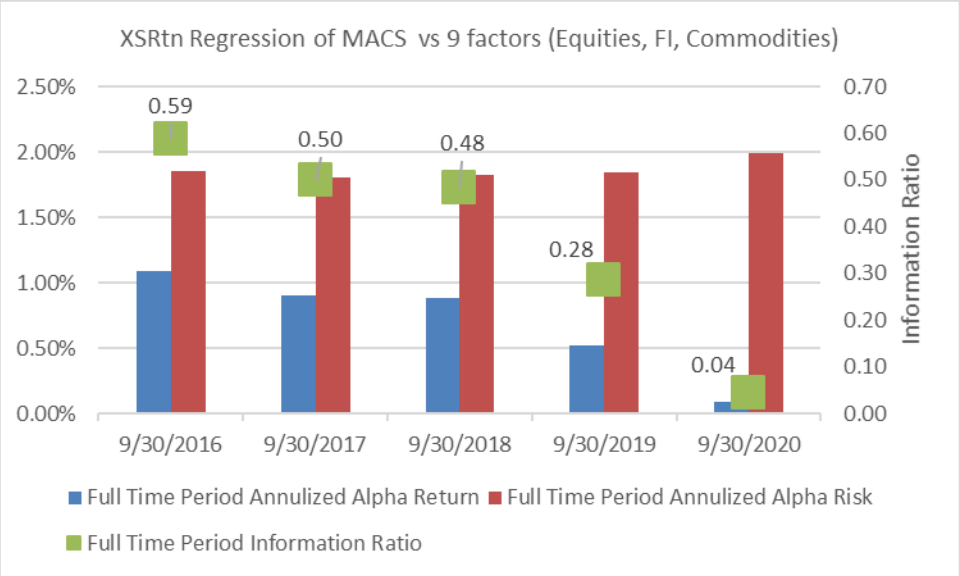
- Oil & Gas
  - Risk Premium of 10.35% up 45 bps from 2020
  - Perception is less exploration risk, however greater operational risk, supporting higher risk premium

- Infrastructure
  - Risk Premium of 5.95 up notably (+85 bps) from 2020
  - Low rates supportive of debt; global fiscal stimulus accompanied by a desire to reduce unemployment is also constructive
  - Plenty of dry powder and challenged sectors (airports/energy) are headwinds

Multi Asset Class Solutions (MACS)



MACS	Rolling 12m XSRtn	Annualized XSRtn since Inception	Annualized StDev since Inception	Sharpe since Inception
9/30/2016	5.09%	4.99%	6.85%	0.73
9/30/2017	5.62%	5.05%	6.56%	0.77
9/30/2018	-1.20%	4.52%	6.40%	0.71
9/30/2019	-1.17%	4.08%	6.36%	0.64
9/30/2020	-2.80%	3.62%	6.70%	0.54



– Reduce Risk premium by 25 bps to 3.75% (from 4.00%)
  - Evidence is pointing to lower return generation
– Reduce Risk by 50 bps to 8.50% (from 9.00%)
  - Historically they have been operating at less risk
  - Should be higher risk than Global Macro
– Target Sharpe of 0.44 unchanged

Hedge Funds – Historical Regression Analysis

- Multiple regression statistics run on Hedge Fund returns vs nine other liquid asset classes

10yr Annualized as of 12/31/2020								
	Hist Beta	Hist Alpha	Hist Risk Premium	Cash	Total Return	Total Risk	Hist Alpha Risk	IR
Hedge Fund of Funds	3.71%	-0.92%	2.76%	0.62%	3.40%	4.90%	2.34%	(0.39)
Hedge Funds- Equity Long/Short	5.99%	-0.88%	5.06%	0.62%	5.70%	8.54%	2.28%	(0.39)
Hedge Funds- Credit-Event -Driven	3.58%	0.58%	4.18%	0.62%	4.83%	5.67%	2.42%	0.24
Hedge Funds- Global Macro	2.40%	-1.88%	0.48%	0.62%	1.10%	4.30%	3.55%	(0.53)

10yr as of 12/31/20	**HFoF**	**ELS**	**Credit-ED**	**MACRO**
BETA Core FI	0.07	0.14	-0.19	0.10
BETA Intl FI	-0.07	0.00	-0.06	0.01
BETA HY	0.18	0.23	0.50	-0.26
BETA EMD	-0.10	-0.16	-0.04	-0.09
BETA LTFI	0.04	-0.05	0.03	0.26
BETA US Equity	0.12	0.28	0.05	0.14
BETA Dev Intl Equity	0.09	0.08	0.08	0.06
BETA EME	0.06	0.16	0.03	0.02
BETA COMMOD	0.01	0.03	0.01	0.08

- Continued trend of decreasing (increasingly negative) alpha returns when hedge fund returns are regressed with nine liquid asset classes

Hedge Funds – 2021 Capital Market Assumptions

Asset Class	20yr Return	Stdev	Risk Premium	Sharpe
Hedge Fund of Funds	4.55%	6.25%	2.65%	0.42
Hedge Funds- Equity Long/Short	6.40%	11.35%	4.50%	0.40
Hedge Funds- Credit-Event -Driven	5.35%	7.75%	3.45%	0.45
Hedge Funds- Global Macro	3.90%	6.00%	2.00%	0.33

Asset Class	Beta Risk Premium	Alpha Risk Premium	Beta Risk	Alpha Risk	Information Ratio
Hedge Fund of Funds	2.44%	0.21%	5.95%	1.90%	0.11
Hedge Funds- Equity Long/Short	4.44%	0.06%	11.33%	0.62%	0.10
Hedge Funds- Credit-Event -Driven	2.60%	0.85%	6.99%	3.35%	0.25
Hedge Funds- Global Macro	0.96%	1.04%	3.37%	4.96%	0.21

- Beta risk premium: Sum-product 10yr Regression Betas and 2021 asset class CMA risk premiums
- Alpha risk premium: Determined using regression based on historical data plus forward looking subjective views
- Alpha potential, via the information ratio, is down substantially vs last year – while the beta risk premium for most strategies is up vs. last year via the positive beta coefficient with US Equity and High Yield Bonds
- Macro’s Sharpe ratio is below US Equity

Hedge Funds – Alpha Research Narrative Analysis

- **Hedge Fund of Funds** – Expect a continuation of a “rising tides lift all boats” market environment, with select strategies offering above average alpha potential. Accordingly, we are comfortable with the increased beta risk premium year-over-year. Alpha risk premium is reduced somewhat year-over-year, such that overall risk premium over cash is about the same as last year.

- **Equity Long/Short** – With much of the dislocation behind us and monetary easing expected to persist for some time, it is reasonable to assume a higher beta return in 2021 relative to 2020. Using that same logic, we would expect that the alpha opportunity for Equity Long/Short to be positive, but likely smaller than it was last year.

- **Credit Event Driven** – Believe that the beta risk premium is reasonable, as you can make the argument that the tailwinds we have seen in 2020 will continue into 2021, placing a higher percentage of overall return in beta vs. alpha. Combined with the fact that many of these hedge fund strategies tend to traffic in the lower-end of the quality spectrum, allowing for greater spread compression potential. Strategies with an emphasis on bespoke debt financings, restructurings, etc. that tend to be more hands-on continue to offer attractive alpha, which should be reflected. Accordingly, we would recommend increasing the alpha risk premium vs the historical regression analysis, but significant reduction in the alpha risk premium year-over-year seems reasonable.

- **Global Macro** – Global central banks are committed to supporting their respective economies through whatever means necessary. In most cases, that has translated to considerable monetary easing combined with some degree of fiscal stimulus. This rather unified message, particularly across developed markets, has compelled many global macro managers to emphasize emerging markets to a greater extent. Thus, we believe the alpha risk premium for Global Macro should be lower relative to what we modeled for 2020 (albeit positive), resulting in an overall risk premium that is lower than what we modelled in 2020. Correspondingly, the volatility should be lower as well, but to account for the EM tilt, the volatility should be upward adjusted relative to historical regression analysis

Hedge Funds – Year / Year Comparisons

2020 CMA							
				20 Yr	20 Yr		
	Beta RP	Alpha RP*	Risk Prem	RF Rtn	Arith Rtn	Volatility	Sharpe
Hedge Fund of Funds	1.75%	0.92%	2.66%	2.65%	5.31%	5.80%	0.46
HF Equity Long Short	3.40%	0.60%	4.00%	2.65%	6.65%	10.00%	0.40
HF Credit Event Driven	1.85%	2.20%	4.05%	2.65%	6.70%	7.80%	0.52
HF Global Macro	0.92%	2.33%	3.25%	2.65%	5.90%	8.00%	0.41
HF Activist			4.50%	2.65%	7.15%	12.21%	0.37
HF Opportunistic			4.75%	2.65%	7.40%	9.50%	0.50
2021 CMA							
				20 Yr	20 Yr		
	Beta RP	Alpha RP*	Risk Prem	RF Rtn	Arith Rtn	Volatility	Sharpe
Hedge Fund of Funds	2.44%	*0.21%*	2.65%	1.90%	4.55%	6.25%	0.42
HF Equity Long Short	4.44%	*0.06%*	4.50%	1.90%	6.40%	11.35%	0.40
HF Credit Event Driven	2.60%	*0.85%*	3.45%	1.90%	5.35%	7.75%	0.45
HF Global Macro	0.96%	*1.04%*	2.00%	1.90%	3.90%	6.00%	0.33
HF Activist			4.25%	1.90%	6.15%	12.00%	0.35
HF Opportunistic			4.75%	1.90%	6.65%	9.50%	0.50
Delta YoY							
Hedge Fund of Funds	0.69%	-0.71%	-0.02%	-0.75%	-0.77%	0.45%	(0.04)
HF Equity Long Short	1.03%	-0.54%	0.50%	-0.75%	-0.25%	1.35%	(0.00)
HF Credit Event Driven	0.75%	-1.35%	-0.60%	-0.75%	-1.35%	-0.05%	(0.07)
HF Global Macro	0.04%	-1.29%	-1.25%	-0.75%	-2.00%	-2.00%	(0.07)
HF Activist			-0.25%	-0.75%	-1.00%	-0.21%	(0.01)
HF Opportunistic			0.00%	-0.75%	-0.75%	0.00%	-

- **Activist** – Reduced RP and volatility by 25 bps each. With low interest rates, corporations are more capable of taking on strategic projects and/or initiatives, But Activism may face some headwinds due to the plethora of opportunities corporate management teams have at their disposal to drive the bottom line. Therefore, they may be less inclined to work with activist investors.
- **Opportunistic** – We believe the return premium and volatility values are reasonable. Greater flexibility, the ability to take on illiquidity in difficult-to-source/specialized opportunities, will offer end users unique and attractive investment profiles.

Private Equity 2021 CMA – Risk Premium

Private Equity Assumptions	5-10yrs Ago	2020	2021
US Large Cap Equity Risk Premium	5.50%	5.50%	6.50%
Risk Premium over L.C. Equity	5.00%	4.25%	4.25%
Total PE Risk Premium	**10.50%**	**9.75%**	**10.75%**
Liquidity Premium	2.50%	1.75%	1.75%
PE Risk Premium Less Liquidity Premium (Value Added Operational / Fin Eng)	2.50%	2.50%	2.50%
Risk Premium over L.C. Equity	**5.00%**	**4.25%**	**4.25%**

- Expected returns over US Large Cap equity remain the same
- Nominal returns are up year-over-year in-line with increased expectations for US Equity

Private Equity

- Majority of capital has been raised in the large/mega buyout and late-stage/growth markets
- Return compression could be seen in these segments as deals get larger and more competitive
- Specific to large/mega LBOs, continued low interest rate environment means more leverage can be used to increase returns; however, the downside is serviceability and fixed cost coverage ratios require more attention.
- Small/mid and early stage VC has seen a disproportionally smaller amount of capital raised in the trailing 12 months. Further, less intermediation has keep inefficiencies of these markets lower relative to large markets. Returns are expected to be higher in these segments relative to the larger ends of the spectrum
- Using barbell mentality, the private equity asset class should even out around the 9/10% mark with our specific portfolio focuses on the smaller end markets driving our outperformance relative to CMAs

Private Equity

- Debt/Equity and Debt/EBITDA ratios near all-time highs along with purchase price multiples. While this is most noticeable at the large end of the market, it has not escaped the small and middle markets. While we feel our manager selection will continue to be significantly below market averages, the market as a whole will see return reductions as a result

- Upper middle to large market funds are not pricing in any multiple uplift at exit and many are positioning portfolios to growth value from cash flow. This has an impact on both IRR/Multiple. While smaller and lower mid markets are less impact, they are not immune. Better GPs can avoid this but not something we can include in CMAs

- Illiquidity premiums have dropped in the past few years and is a primary result of the dramatic increase in the size of private equity markets ($2Tn +). If you factor in the significant amount of dry powder in the market with the increase in efficiency pricing has experienced due to larger intermediary participation, the illiquidity premium has been further reduced to a sub 200 bps environment for the time being

Private Credit and Bank Loans

- Private credit risk premium should reflect a premium over high yield bonds / bank loans
- Legacy Assumption for Risk Premium
  - Was between 3-4% on a 10-year basis in 2017
  - Previously, used a 3% premium over High Yield Bonds for Private Credit
  - Due to similarities in underlying assets, as well as approval of S&P/LSTA LL Index for direct lending benchmarking, most comparable asset class is to Private Credit is Bank Loans
    - Same default and recovery assumptions can be made as loans are senior in capital stack
- Largest historical correlation to publicly-traded business development companies (BDC's) was with the S&P 500 Index due to the equity-like nature of the publicly traded BDCs
  - No good way of comparing illiquid direct loans to public markets
  - No universally accepted benchmark

Prem. over High Yield	2017	2018	2019	2020	2021
Bank Loans	-0.7%	-0.7%	-0.5%	-0.5%	-0.8%
Private Credit	3.4%	3.3%	3.5%	3.5%	2.7%
CMA Risk Premium	**2017**	**2018**	**2019**	**2020**	**2021**
High Yield Bonds	3.5%	3.2%	3.0%	3.0%	3.3%
Bank Loans	2.8%	2.5%	2.5%	2.5%	2.5%
Private Credit	6.9%	6.5%	6.5%	6.5%	6.0%
CMA Volatilty	**2017**	**2018**	**2019**	**2020**	**2021**
High Yield Bonds	11.0%	11.0%	10.0%	10.0%	9.5%
Bank Loans	8.0%	8.0%	8.0%	8.0%	7.5%
Private Credit	9.5%	9.5%	9.5%	9.5%	9.0%
CMA Sharpe Ratio	**2017**	**2018**	**2019**	**2020**	**2021**
High Yield Bonds	0.32	0.29	0.30	0.30	0.35
Bank Loans	0.35	0.31	0.31	0.31	0.33
Private Credit	0.73	0.68	0.68	0.68	0.67

- Volatility assumptions reduced 50bps
- Reduced risk premium for private credit a bit to continue trend of reigning in the Sharpe ratio for that asset class