

# 6<sup>th</sup> Annual Endowments and Foundations Conference

CFA Society Pittsburgh



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# Long-Term Capital Market Assumptions YOY Change

		Pavilion*							
		2018		2017		YOY Change	Other		
Strategy		Return	Risk	Return	Risk	Return	JPM ** (2018)	Horizon*** (2017)	
Equities	1	Global Equity	6.80%	16.10%	7.52%	16.43%	-0.72%	6.00%	--
	2	U.S. Equity	6.61%	15.14%	7.29%	15.44%	-0.68%	--	--
	3	U.S. Large Cap Equity	6.53%	15.02%	7.20%	15.32%	-0.67%	5.50%	6.46%
	4	U.S. Small Cap Equity	7.54%	19.51%	8.37%	19.75%	-0.83%	5.75%	6.90%
	5	Intl Equity	6.86%	16.31%	7.60%	16.61%	-0.74%	6.25%	6.99%
	6	Emerging Markets	8.13%	21.52%	9.09%	21.93%	-0.96%	8.00%	8.00%
	7	Long/Short Equity	4.72%	8.89%	5.10%	9.09%	-0.38%	4.75%	--
	8	Private Equity	9.80%	25.39%	10.52%	25.66%	-0.72%	7.25%	9.01%
Fixed Income	9	Global Bonds	2.68%	5.43%	2.84%	5.41%	-0.16%	2.50%	2.18%
	10	Short Duration	2.73%	1.41%	2.85%	1.43%	-0.12%	3.50%	--
	11	Treasuries	2.50%	4.34%	2.51%	4.36%	-0.01%	--	--
	12	Intermediate Gov't	2.50%	2.99%	2.52%	3.01%	-0.02%	3.00%	--
	13	Long Duration Gov't	2.73%	10.15%	2.94%	10.13%	-0.21%	2.50%	--
	14	Long G/C	3.60%	8.66%	3.94%	8.69%	-0.34%	3.25%	3.62%
	15	Municipal Bonds	2.46%	4.06%	--	--	--	2.50%	--
	16	Core Plus	2.94%	3.42%	3.05%	3.43%	-0.11%	3.25%	3.24%
	17	Investment Grade Corporates	3.54%	5.28%	3.78%	5.35%	-0.24%	3.50%	--
	18	High Yield	4.46%	8.81%	5.00%	9.01%	-0.54%	5.25%	5.06%
	19	Emerging Markets Debt	4.26%	8.73%	4.91%	8.88%	-0.65%	5.25%	5.30%
Multi-Strat.	20	Distressed	7.51%	10.41%	8.77%	10.52%	-1.26%	--	--
	21	Long/Short Fixed Income	4.52%	8.38%	4.95%	8.47%	-0.43%	4.50%	--
	22	Diversified Hedge Funds (FOF)	4.67%	3.85%	4.85%	3.94%	-0.18%	4.25%	--
	23	Multi-Strategy - Direct	4.98%	6.73%	5.48%	6.88%	-0.50%	--	4.92%
Real Assets	24	Commodities	4.96%	15.83%	5.39%	16.18%	-0.43%	3.75%	4.05%
	25	Inflation Linked Notes	2.56%	5.44%	2.67%	5.53%	-0.11%	2.75%	2.85%
	26	Natural Resources / Infrastructure	5.87%	16.17%	6.29%	16.35%	-0.42%	6.25%	6.67%
	27	Real Estate (Private)	6.00%	10.28%	6.40%	10.35%	-0.40%	5.88%	6.18%
	28	REITs	6.49%	19.73%	7.16%	20.10%	-0.67%	6.25%	--
	29	Cash	2.43%	0.64%	2.44%	0.64%	-0.01%	2.00%	2.27%

\*Represents 2018 Asset Allocation Assumptions published by Pavilion in January 2018; \*\*JPMorgan 2018 Long-Term Capital Market Assumptions; \*\*\*Horizon Actuarial Services 2017 Survey of Capital Market Assumptions

## S&P 500 long-term target (year-end 2025) = 3500

Regressions based on various valuation measures suggest a 5% CAGR over the next 10 years. This is below the average returns of 10% over the last 50 years, but 5% still wins in a lower-return world for other asset classes.

BofA Merrill Lynch forecasts the S&P 500 reaching 3500 by 2025, or annual price returns of ~3% per year.

### Predictive power of various S&P 500 valuation metrics on forward returns (as of 3/31/18)

Metric	Current	Avg	% above (below) avg	10 yr RSQ	Implied 10yr Annlzd Return	90% Confidence Interval	Dates
Trailing PE	20.6	16.1	28%	67%	6%	1% - 11%	1960-present
Forward PE	16.3	15.3	7%	86%	8%	5% - 12%	1986-present
Normalized PE	20.7	19.0	9%	79%	8%	5% - 12%	7/1987-present
Shiller PE	32.8	16.8	95%	67%	2%	-3% - 7%	1936-present
P/BV	3.3	2.5	32%	85%	7%	4% - 11%	1978-present
EV/EBITDA	11.9	10.0	19%	85%	5%	2% - 9%	1986-present
P/OCF	14.1	10.6	33%	90%	4%	1% - 7%	1986-present
P/FCF	24.0	28.2	-15%	36%	12%	4% - 19%	1986-present
EV/Sales	2.5	1.8	34%	84%	3%	0% - 7%	1986-present
Market Cap/GDP	1.1	0.59	92%	73%	-3%	-7% - 2%	1952-present
				<b>Median:</b>	<b>6%</b>	<b>1% - 10%</b>	
				<b>Average:</b>	<b>5%</b>	<b>1% - 10%</b>	

Note: For each metric we use the longest available history for all metrics (since 1987), and we also use a longer history where available (for Trailing & Shiller P/E)

Source: FactSet, First Call, Compustat, Shiller, BofA Merrill Lynch US Equity & US Quant Strategy

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