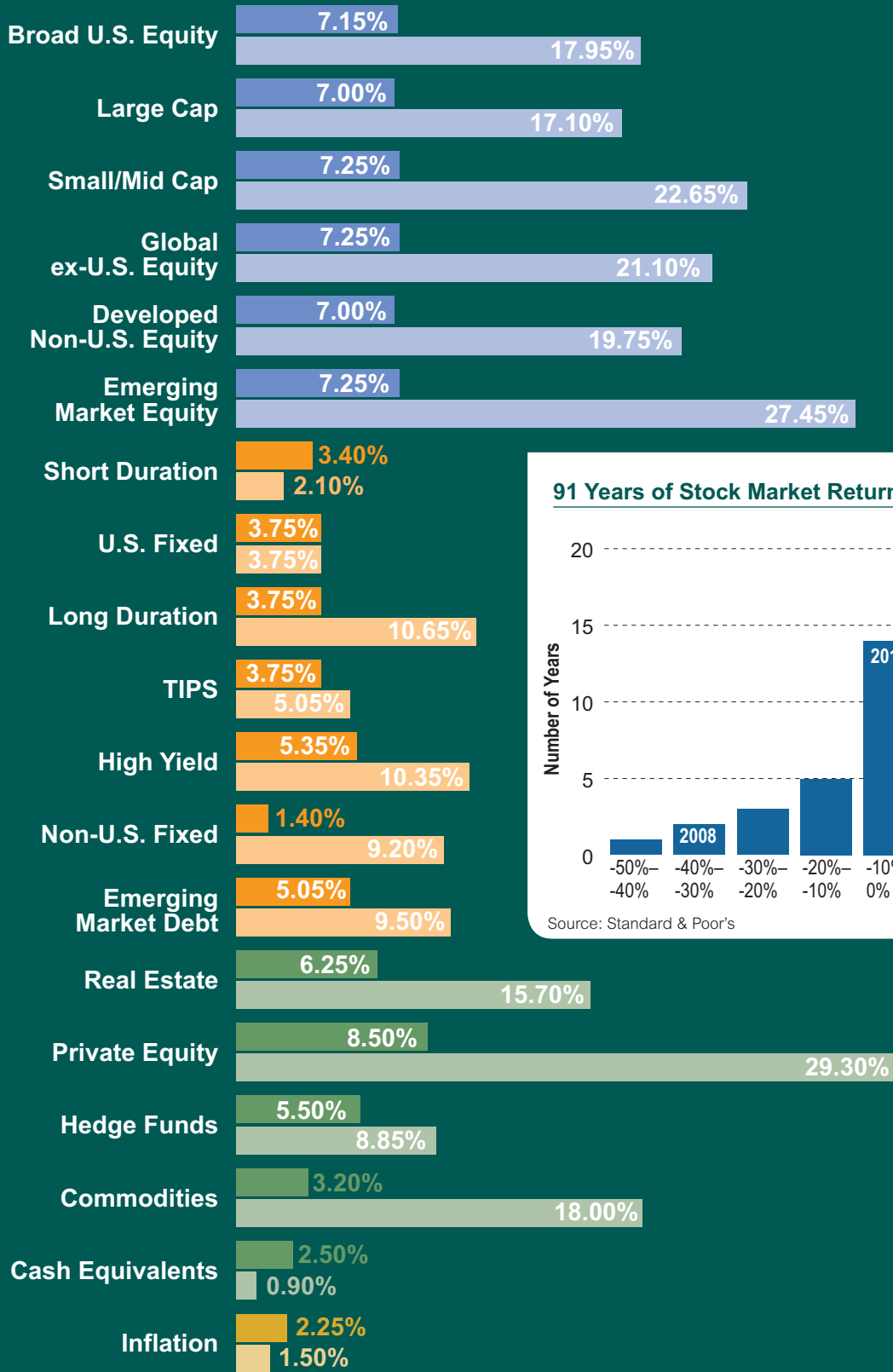


Capital Market Projections: 2019-2028

Each year, Callan develops long-term capital market projections, detailing expected return, standard deviation, and correlations for major asset classes. These projections are the cornerstone for strategic planning. This charticle summarizes key figures from Callan's 2019-2028 capital market projections.

10-Year Return and Risk Projections

Projected Return (10-year geometric) Projected Risk (standard deviation)



Source: Callan

Callan's 10-Year Return Expectations

U.S. Equity 7.15% ▶ Compound earnings growth is expected to be modestly above GDP growth. P/E ratios are well within historical norms. Dividend yields are expected to hold steady.

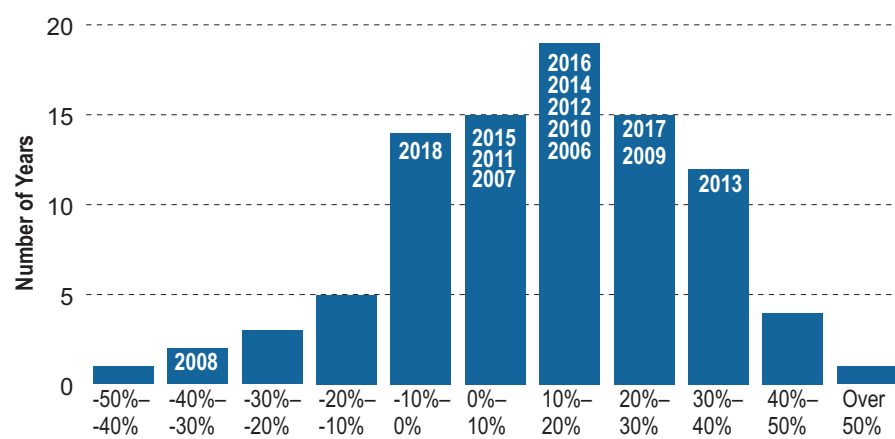
Global ex-U.S. Equity 7.25% ▶ Earnings growth likely to be moderate, facing significant uncertainty in future economic policies. Relatively high dividend yields will support returns. Long period of relative undervaluation in both developed and emerging markets points to potential for growth.

U.S. Fixed Income 3.75% ▶ Interest rates should rise modestly over the next 10 years. The yield curve is projected to revert to a more normal upward sloping term structure. Future higher yields offset modest capital losses.

Real Estate 6.25% ▶ Even though capitalization rates reached a record low in 2018, capital flows remain healthy as investors rebalanced their overall portfolios by moving equity market gains into real estate.

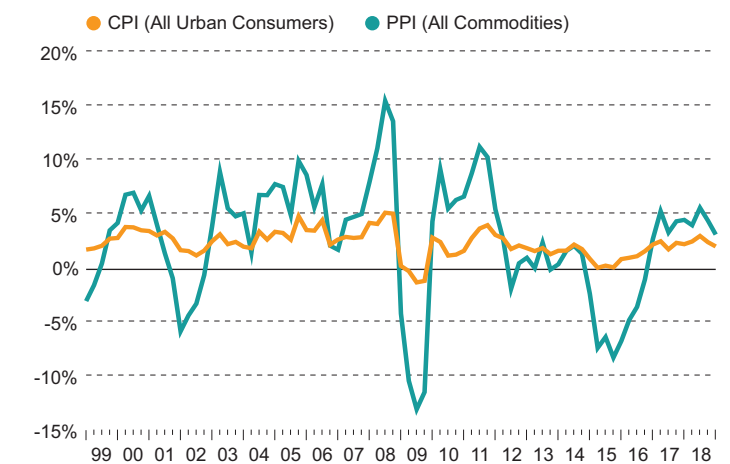
Hedge Funds 5.50% ▶ Returns reflect the cross currents of modest equity expectations, higher cash rates, and the prospect of varied return opportunities in uncertain markets.

91 Years of Stock Market Returns



Source: Standard & Poor's

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

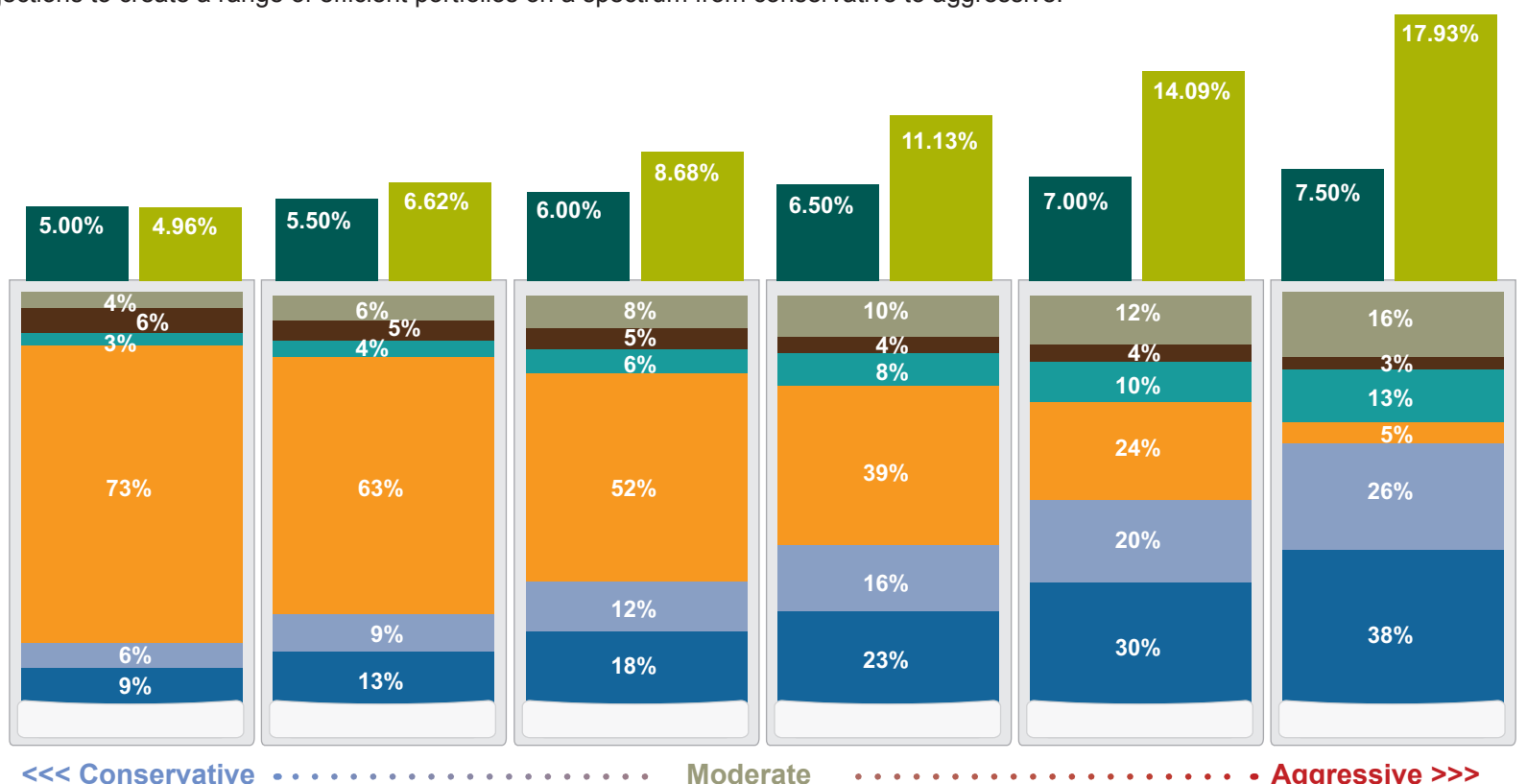
Projected Risk and Return of Different Asset Mixes

This exhibit uses Callan's projections to create a range of efficient portfolios on a spectrum from conservative to aggressive.

10-year projected return

10-year projected standard deviation

- Private Equity
- Hedge Funds
- Real Estate
- U.S. Fixed Income
- Global ex-U.S. Equity
- Broad U.S. Equity



Note: Charts may not sum to 100% due to rounding. Source: Callan

About These Projections

Callan's projections consist of three primary figures for each asset class: a mean rate of return, a corresponding range defined by standard deviation, and the correlations to other asset classes. These figures represent our best thinking for long-term expectations and establish a mid-point within a wider range of potential outcomes. We use the projections to model portfolios for our clients.

Multiple elements of the capital markets influence the projections: returns relative to inflation, equity valuations, risk premiums, GDP growth, and many other factors. These projections incorporate advanced quantitative modeling as well as qualitative feedback and the economic expertise of Callan's consulting professionals. Our 2019 numbers reflect our optimism for the economy, for inflation, and for the capital markets.

Correlation Expectations (10 Years)



Relationships between asset classes are as important as standard deviations. In the past, particularly in stressed markets, correlations between asset classes have risen.

Callan revisits and adjusts our correlation expectations annually. Among the risky asset classes, correlations are high and will remain high. Interestingly, stocks and bonds have exhibited tremendous negative correlation over time. Other uncorrelated asset classes have been commodities, TIPS, and to some extent many absolute return strategies. We believe real estate will maintain a diversification benefit, but it is harder to measure given the valuation process.

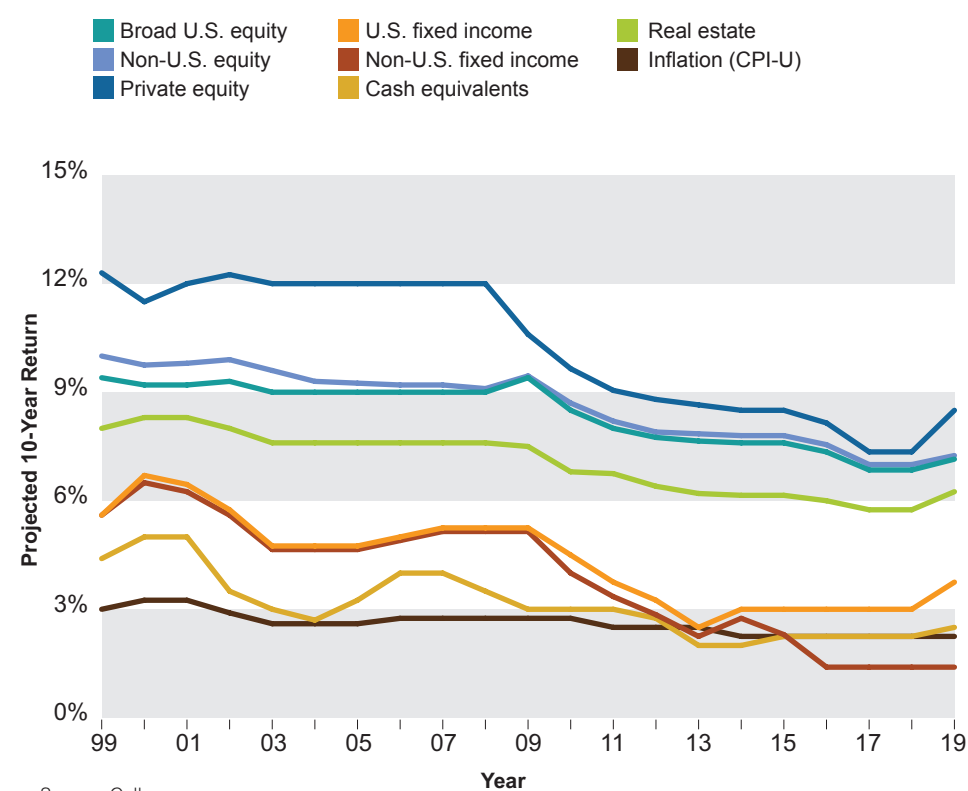
Source: Callan

Then and Now: Comparing Historical Returns to Historical Projections

	Annualized Returns for periods ended 12/31/2018		
	10 Years	15 Years	25 Years
Broad U.S. Stock Market			
Russell 3000	13.18%	7.89%	9.04%
Large Cap U.S. Stocks			
S&P 500	13.12%	7.77%	9.07%
Small/Mid Cap U.S. Stocks			
Russell 2500	13.15%	8.23%	9.62%
Non-U.S. Stock Markets			
MSCI World ex USA	6.24%	4.78%	4.76%
MSCI Emerging Markets	8.02%	7.90%	--
Fixed Income			
Bloomberg Barclays Aggregate	3.48%	3.87%	5.09%
Bloomberg Barclays Gbl Agg ex-US	1.73%	2.88%	4.39%
Bloomberg Barclays Long G/C	5.88%	6.02%	6.82%
Real Estate			
NFI-ODCE (value weight net)	6.01%	7.23%	8.05%
Hedge Funds			
Callan Hedge FOF Database	5.26%	4.56%	6.06%
Private Equity			
Cambridge Private Equity*	11.62%	13.99%	15.46%
Commodities			
Bloomberg Commodity	-3.78%	-2.46%	2.03%
Cash Market			
90-Day T-Bill	0.37%	1.32%	2.55%
Inflation			
CPI-U	1.80%	2.09%	2.20%

* Private equity data is time-weighted return series for periods ended 09/30/2018. Sources: Bloomberg Barclays, Bureau of Labor Statistics, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, and Standard & Poor's.

How Callan's 10-Year Return Projections Have Changed Since 1999



About Callan

Founded in 1973, Callan is one of the largest independently owned investment consulting firms in the country. Headquartered in San Francisco, CA, the firm provides research, education, decision support, and advice to a broad array of institutional investors.

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