

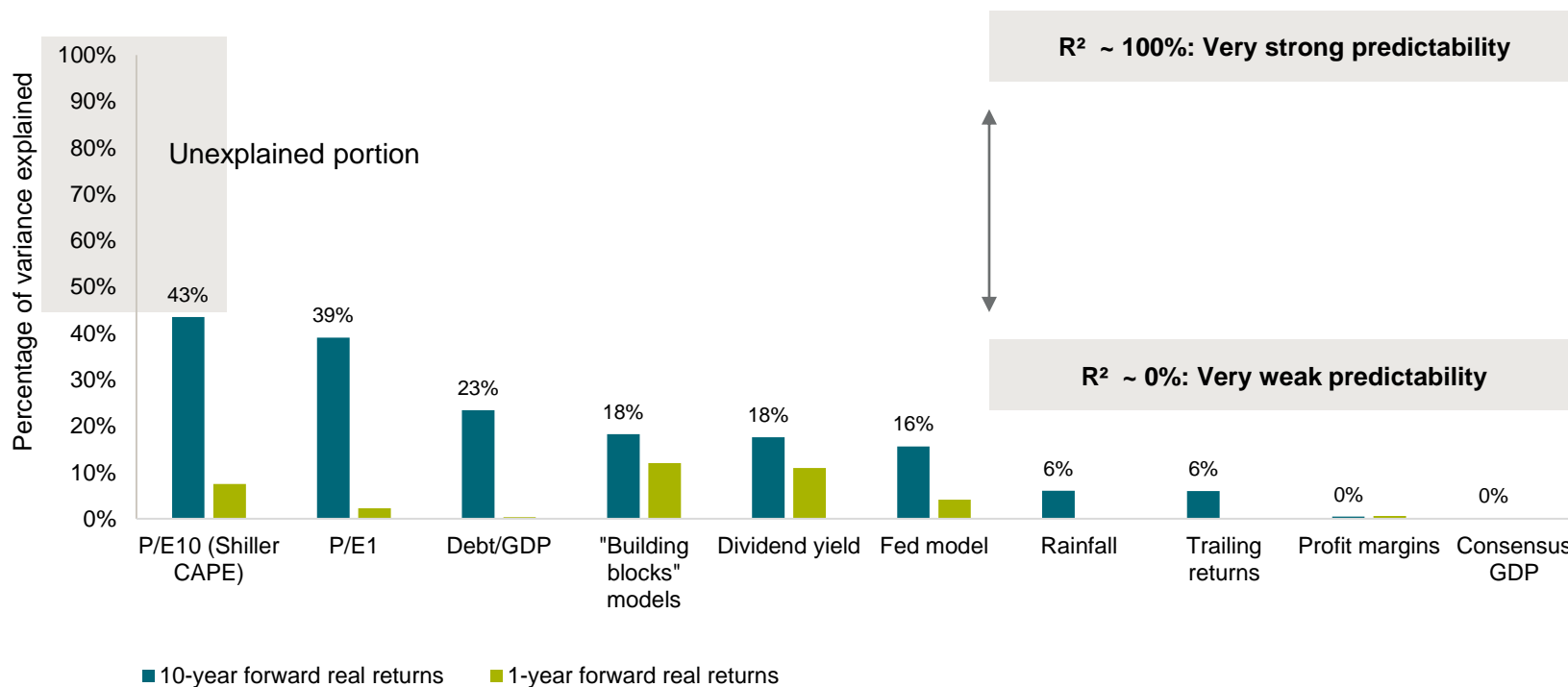
Navigating today's investment environment

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Equities: In the long run, valuations have had greatest explanatory power

Association of future real stock returns with various initial conditions



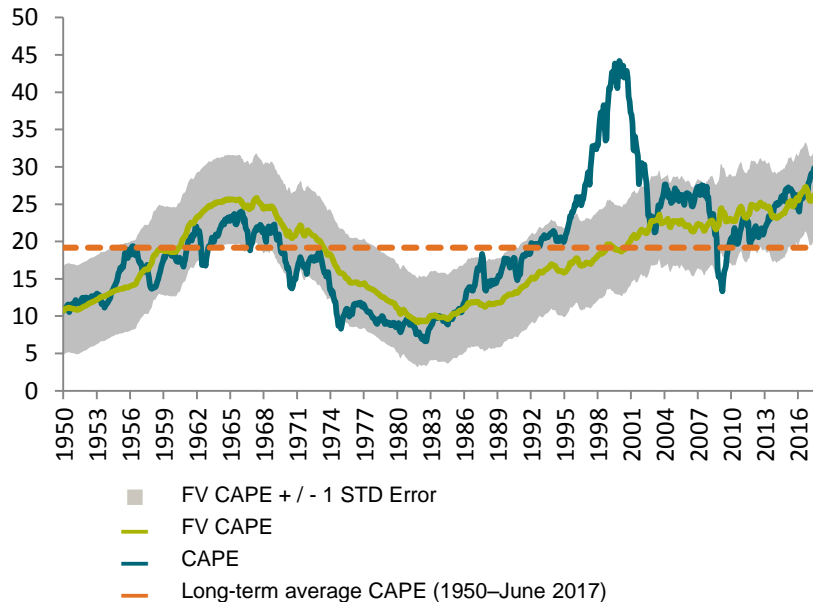
Notes: Displays the R-squared statistic of a regression model of forward real stock returns on each variable. Data runs from January 1, 1926, to December 31, 2015.

Source: Vanguard Investment Strategy Group analysis, based on data from S&P, Dow Jones, MSCI, Robert Shiller, U.S. Bureau of Economic Analysis (BEA), U.S. National Weather Service and U.S. Federal Reserve.

Equities: Developed equity markets look fully valued

Vanguard's proprietary fair-value CAPE

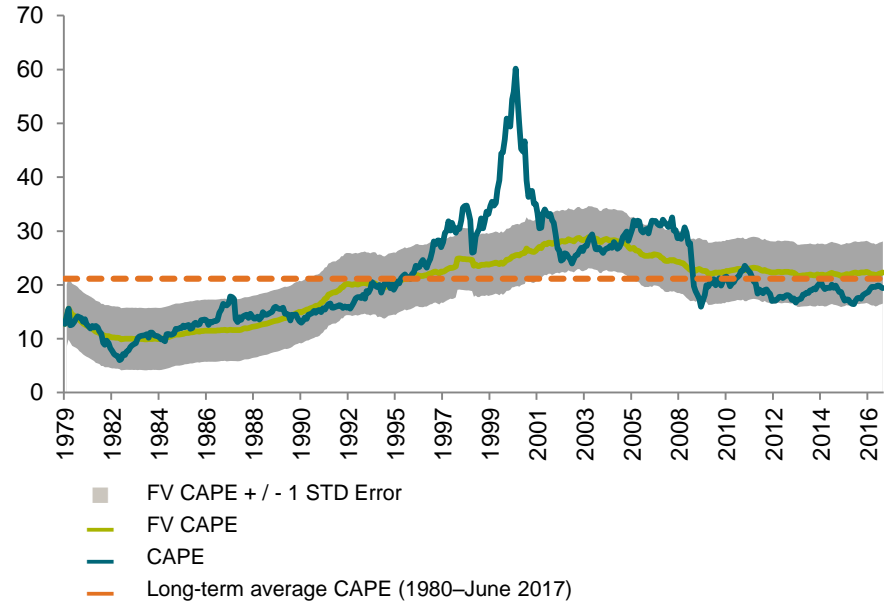
U.S. S&P 500



Note: "Fair-value CAPE" is based on a statistical model that corrects CAPE measures for the level of inflation expectations and for lower interest rates. The statistical model specification is a three-variable vector error correction (VEC), including equity-earnings yields, ten-year trailing inflation, and ten-year U.S. Treasury yields estimated over the period January 1940– June 2017. For details, see *Vanguard's economic and investment outlook* (Davis, Aliaga-Diaz, Westaway, Wang, Patterson, and Ahluwalia 2016).

Sources: Vanguard calculations, based on Robert Shiller's website, at aida.wss.yale.edu/~shiller/data.htm, U.S. Bureau of Labor Statistics, and Federal Reserve Board.

MSCI Canada



Notes: "Fair-value CAPE" is based on statistical model that corrects CAPE measures for the level of inflation expectations and for interest rates. The statistical model specification is a three-variable vector error correction (VEC), including equity earnings-yield (MSCI Canada index), Canadian ten-year trailing inflation, ten-year Govt. bond yield, ten year trailing equity and bond volatility estimated over the period January 1970 – June 2017. For details, see *Vanguard's economic and investment outlook* (Davis, Aliaga-Diaz, Westaway, Wang, Patterson, and Ahluwalia 2016).

Source: Vanguard calculations, based on data from Thomson Reuters Datastream and Factset.

Equities: Muted outlook relative to the past

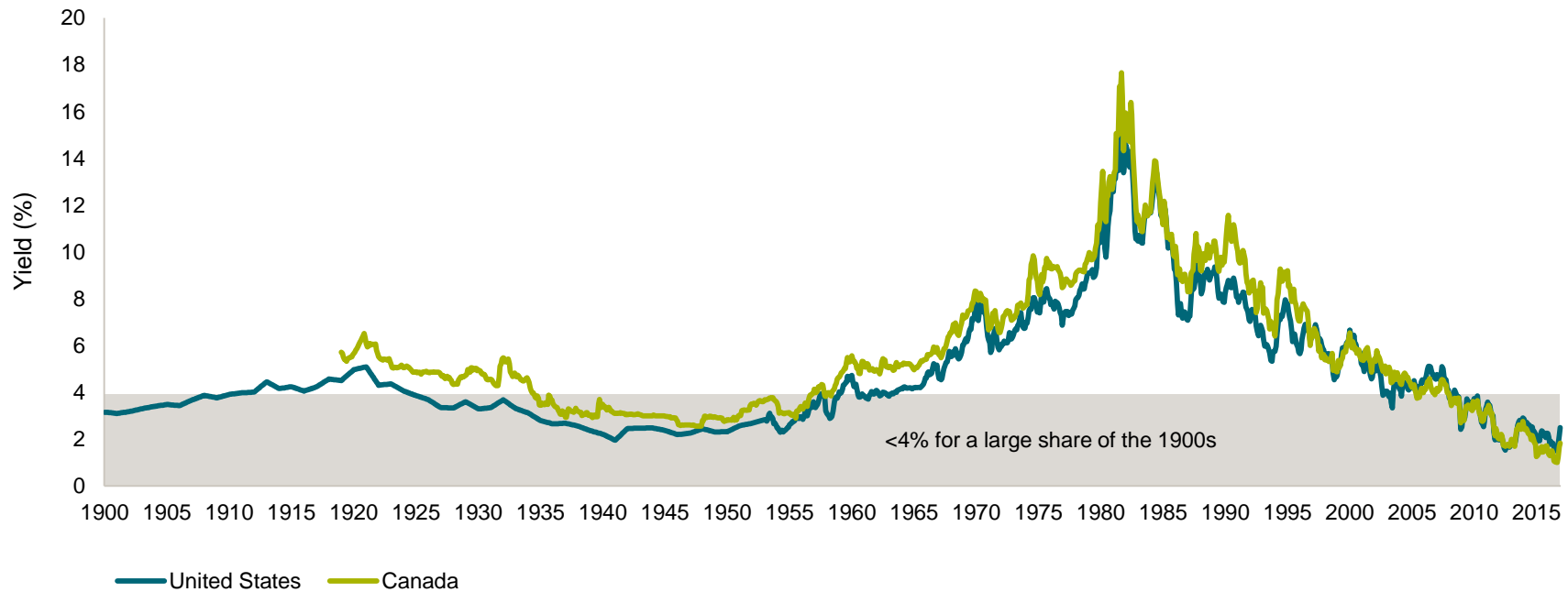
Probability distribution of global equity market returns over the next ten years



Notes: Figure displays projected range of potential returns for portfolios of 25% CAN equity/75% ex-CAN equity, rebalanced quarterly, from 10,000 Vanguard Capital Markets Model (VCMM) simulations as of September 2016. Simulated returns are calculated using the following indexes: **Canadian equities**—MSCI Canada Total Return Index; **ex-Canada equities**—MSCI All Country World Index ex Canada in CAD. Historical returns are calculated using the following indexes: **Canadian equities**—MSCI Canada Index since 1970; **ex-Canada equities**—MSCI World Index from 1971 through 1988 and MSCI All Country World Index ex Canada in CAD thereafter.
Source: Vanguard.

Bonds: Just because yields are low doesn't mean they must rise

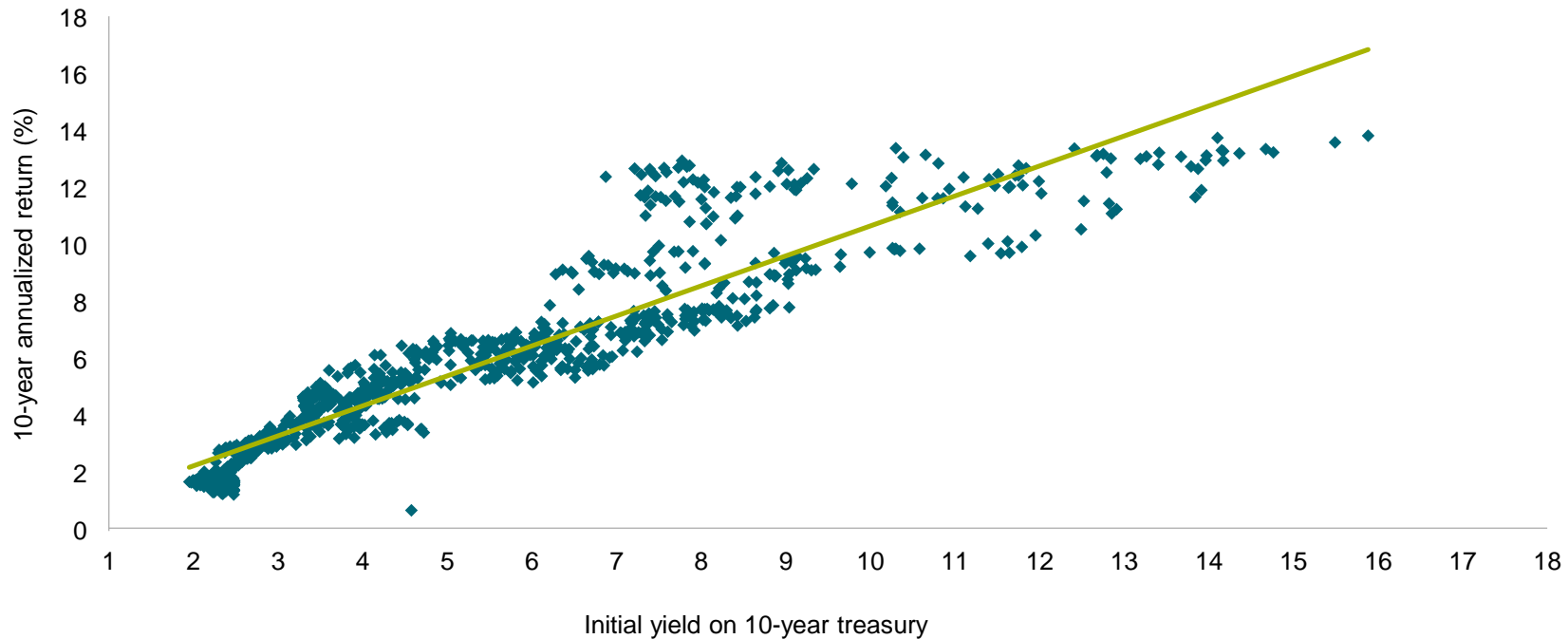
Historical yields on U.S. ten-year government bonds



Notes: Monthly yield data runs to December 31, 2016.
Sources: Vanguard calculations, using data from Macrobond.

Bonds: Strong relationship between current yields and future returns

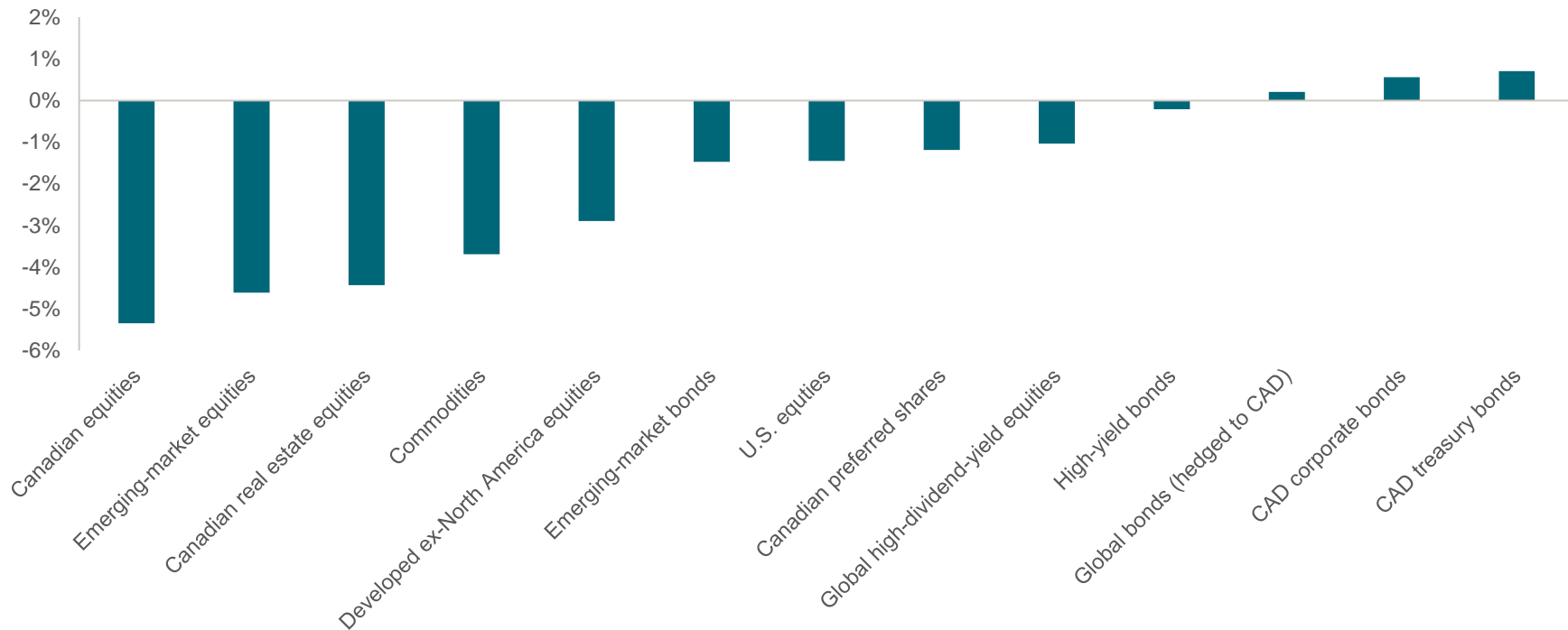
Low current yields correlate with low expected returns



Sources: Historical yield data for the U.S. ten-year Constant Maturity Treasury (CMT) provided by Shiller from 1926 through March 1953 and the Federal Reserve Board thereafter, through January 2016. Total returns for U.S. bonds represented by Ibbotson Associates Intermediate Term Treasury Bond Index from 1926 through 1975 and 10-year CMT U.S. Treasury from Bloomberg Barclays thereafter.

Bonds: The role of fixed income. If not high-quality bonds, what?

Median return of various asset classes during the worst decile of monthly Canadian equity returns, 2003 to 2016



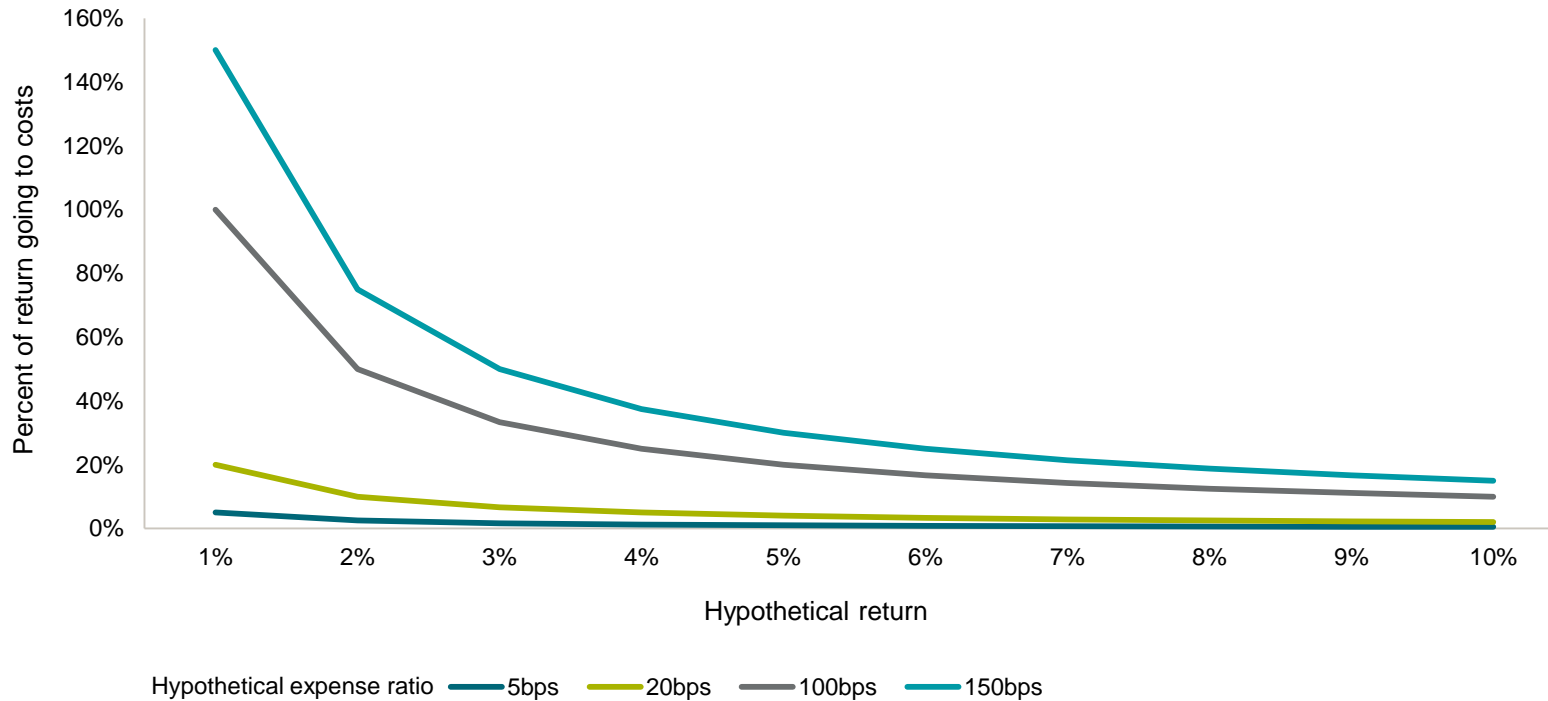
Notes: Canadian equities represented by the TSX Composite Index, emerging-market equities represented by the MSCI Emerging Market Index, Canadian real estate represented by the TSX Real Estate Index, commodities represented by the Goldman Sachs Commodities Index, Developed ex-North America equities represented by the MSCI EAFE Index, U.S. equities represented by the S&P 500 Index, Canadian preferred shares represented by the TSX Preferred Index, global high-dividend yield equities represented by the MSCI World High Dividend Yield Index, emerging market bonds (hedged to CAD) are represented by the hedged Bloomberg Barclays US EM Aggregate Index, high-yield bonds are represented by the BOAML Canadian Issuers High Yield Index, global bonds represented by the Bloomberg Barclays Global Aggregate Index (hedged to the CAD), Canadian corporate bonds represented by the Bloomberg Barclays Canadian Corporate Index, CAD treasury bonds represented by the Bloomberg Barclays Canadian Treasury Index. All returns are reported in Canadian dollars. Data runs from January 1, 2003, to December 31, 2016.

Source: Vanguard calculations based on data from Macrobond and Morningstar, Inc.

The keys to navigating today's investment environment

Costs: Low costs are critical given a muted return outlook

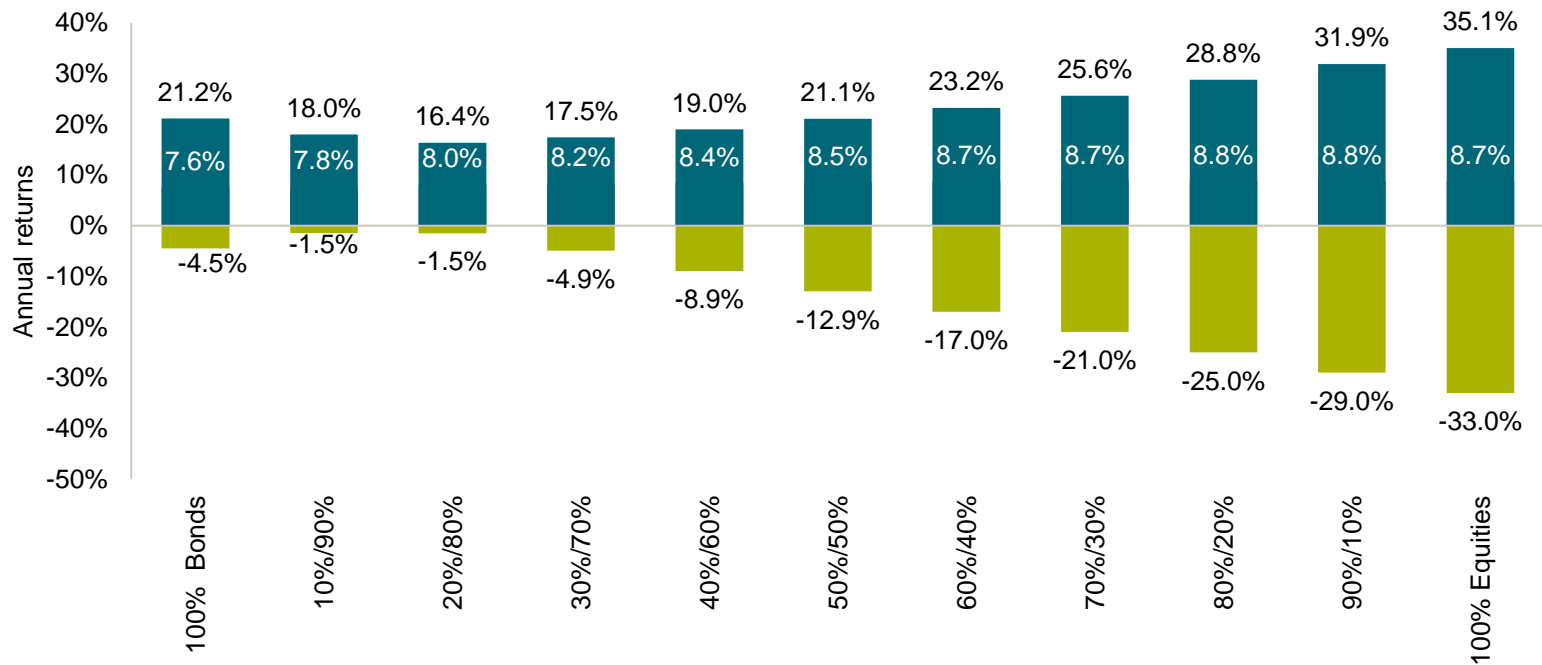
Percentage of return going to costs at various hypothetical returns



Source: Vanguard.

Balance: The mix of assets defines the spectrum of returns

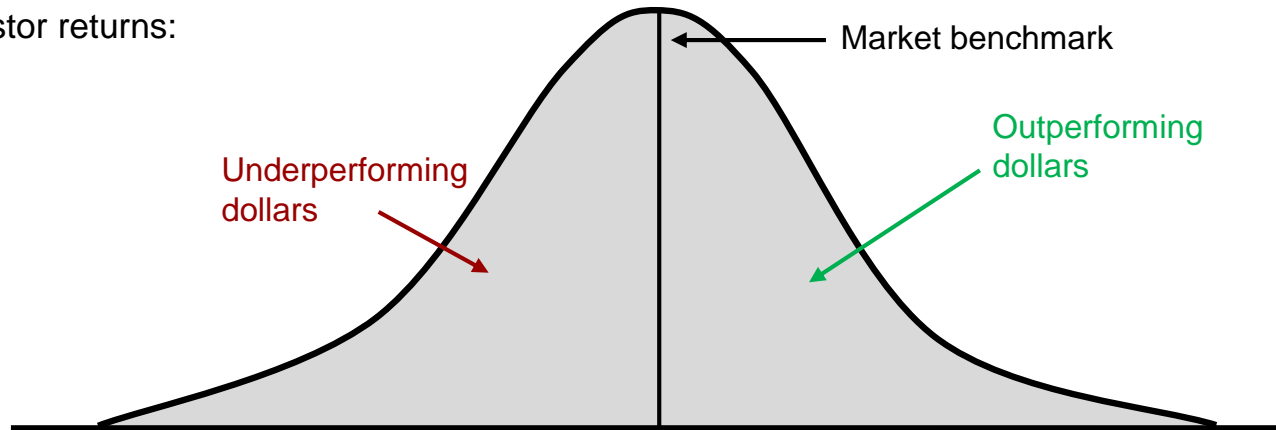
Best, worst and average returns for various equity/bond allocations, 1900–2016



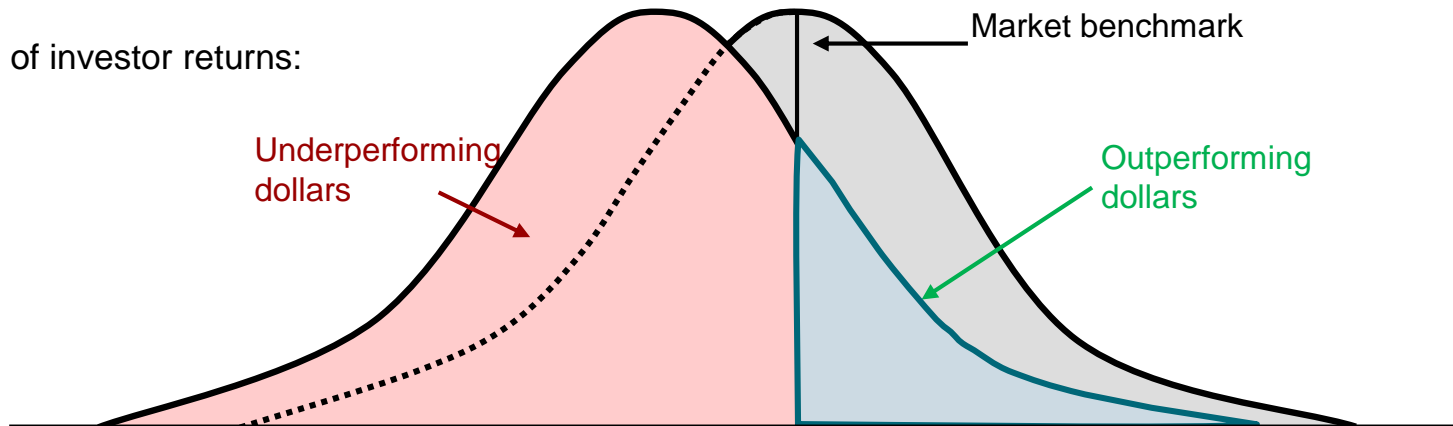
Notes: Stocks are represented by the S&P/TSX Composite Index. Bonds are represented by the Citigroup World Government Bond Index from 1985 through 2001 and the Bloomberg Barclays Canadian Issues 300MM Index thereafter. Data runs from January 1, 1900, to December 31, 2016.
Source: Vanguard, using data from Morningstar, Inc., and Bloomberg Barclays.

Balance: The zero sum game

Distribution of investor returns:
Before cost

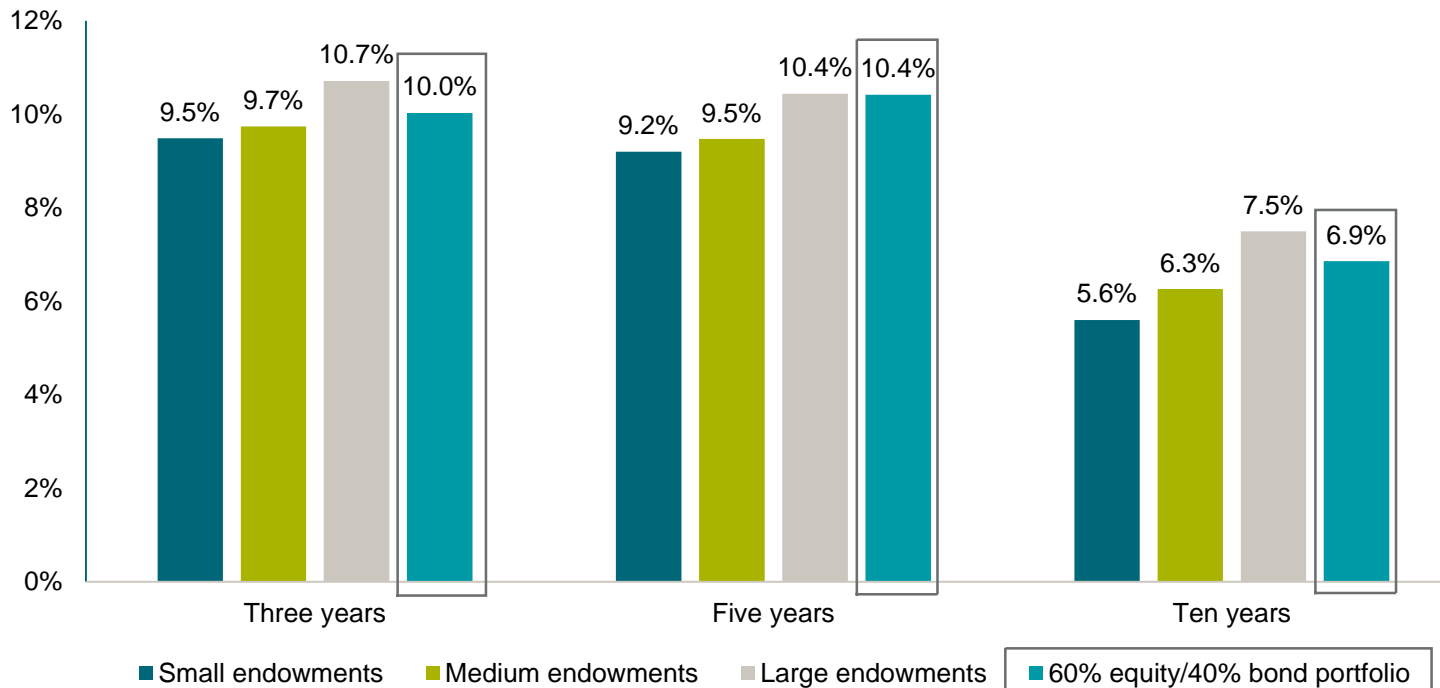


Distribution of investor returns:
After cost



Balance: Results demonstrate the value of traditional diversification

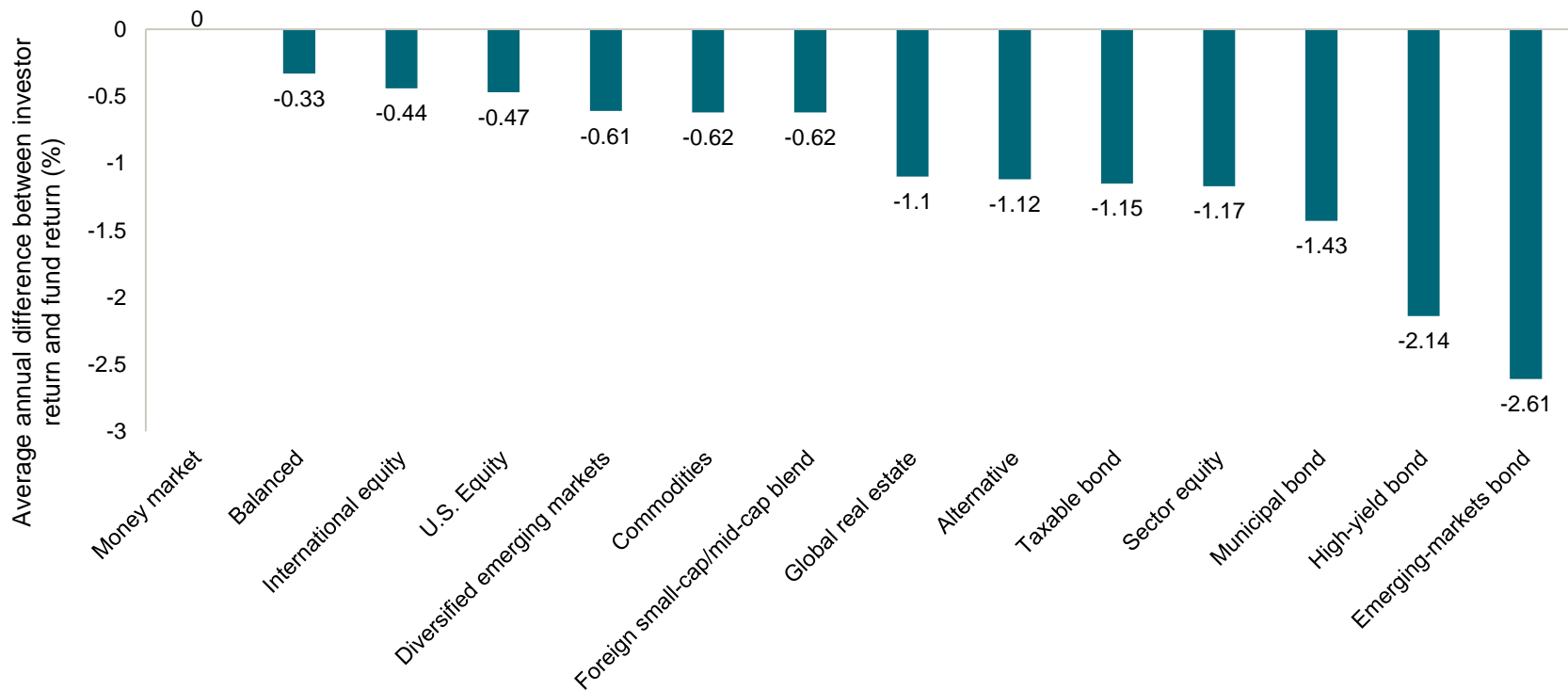
Nominal returns from NACUBO-Commonfund study on the performance of endowment portfolios



Notes: Data as of June 30, 2015. Small endowments have assets less than \$100 million, medium endowments are up to \$1 billion and large endowments exceed \$1 billion (all in USD).
Source: NACUBO-Commonfund Study of Endowments, June 2015.

Discipline: Mind the behavioural gap

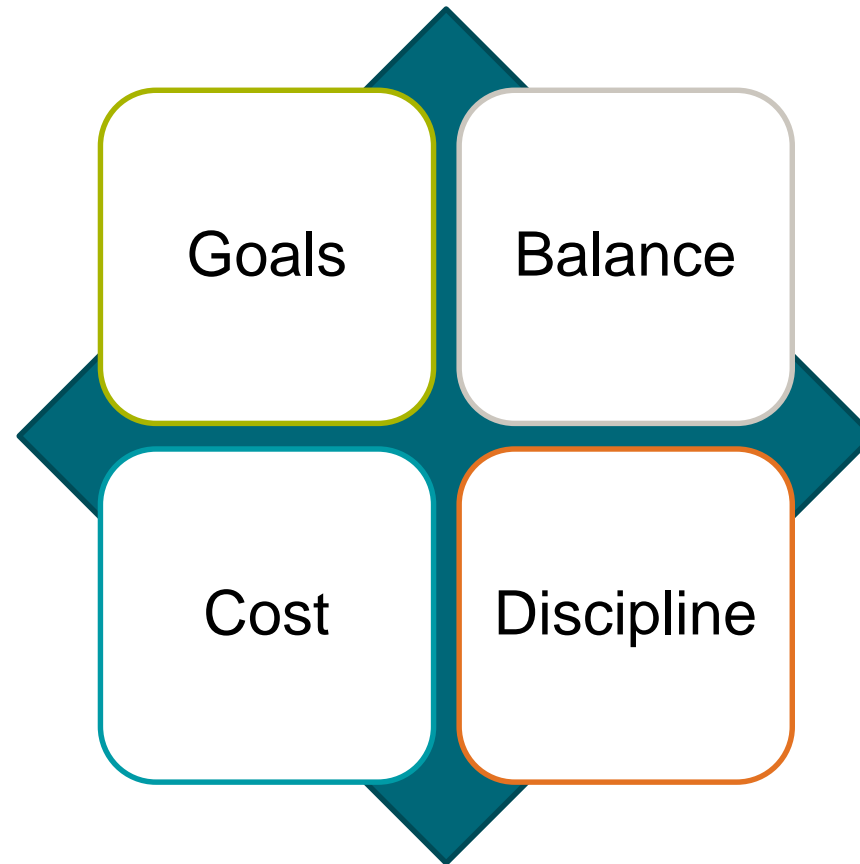
How investors' returns tend to lag their funds' returns, 2002–2016



Source: Vanguard calculations, using data from Morningstar, Inc.

The keys to navigating today's investment environment

Vanguard's principles for investing success



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