For investors

Key principles for investing success

Define clear goals, invest with balance and diversification, minimize cost, and maintain discipline.

These core investing principles are united by a common theme: Focus on the things within your control. By attending to the things you and your advisor can influence, rather than uncontrollable factors such as the markets, the economy, or the performance of an individual security or strategy, you give yourself the best opportunity for investing success.

GOALS

Create clear, appropriate investment goals

- Your financial advisor can help you define clear, realistic goals and design an investment plan that meets your individual needs.
- A sound investment plan can help you stay focused and avoid temptations such as performance chasing or reacting impulsively to market turbulence.
- Investors often flock to highly rated funds. However, there's no guarantee that a fund's recent success will persist. The chart below shows that the highest-rated funds lagged their benchmarks by the greatest amount over the subsequent three years. Conversely, the funds with the lowest ratings did the best job of tracking their benchmarks.

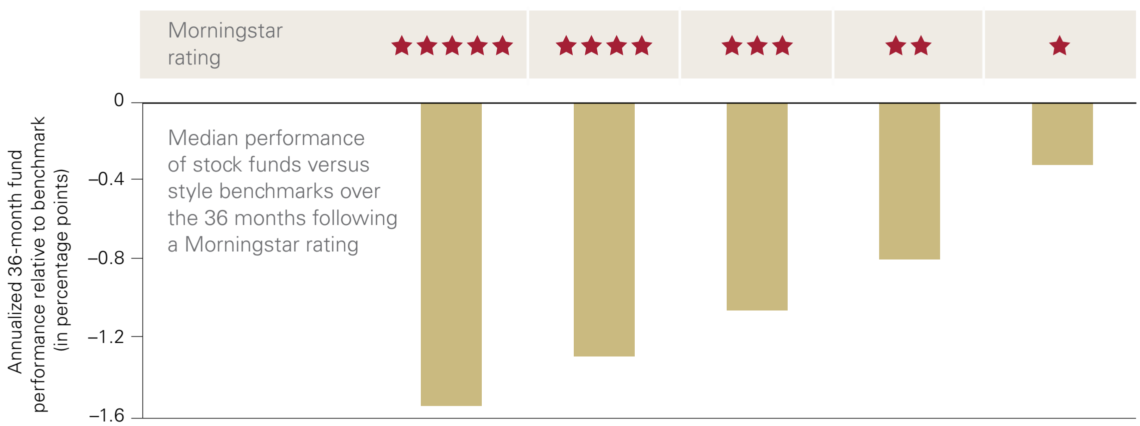
BALANCE

Develop a suitable asset allocation using broadly diversified funds

- The right asset allocation is critical. It should be based on your individual goals and constraints and strike the right balance between risk and return.
- If you assume too little risk, you may fail to stay ahead of inflation or to achieve long-term goals. Yet, if you assume too much risk, you may take on levels of volatility that tempt you to abandon your strategy.
- A portfolio that diversifies across the financial markets is less vulnerable to the impact of significant swings in performance by any one segment.

Positive past performance can mean disappointing future returns

Annualized 36-month fund performance relative to benchmark



Notes: *Past performance does not guarantee future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.*

Morningstar ratings are designed to bring returns, risks, and adjustments for sales loads together into one evaluation. To determine a fund's star rating for a given time period, the fund's risk-adjusted return is plotted on a bell curve. If the fund scores in the top 10% of its category, it receives five stars; in the next 22.5%, four stars; in the middle 35%, three stars; in the next 22.5%, two stars; and in the bottom 10%, one star. The overall rating is a weighted average of the available three-, five-, and ten-year ratings.

To calculate the median performance versus style benchmarks, Vanguard first assigned each fund to a representative benchmark according to size and style (growth versus value). We then compared the performance of each fund with the performance of its style benchmark for each 36-month period since June 1992. Funds were grouped according to their star ratings, and we then computed the median relative return versus the style benchmark for the subsequent 36-month period. Data are through December 2016.

Sources: Data on cash flows, fund returns, and ratings were provided by Morningstar. Index data to compute relative excess returns were provided by Thomson Reuters Datastream. More information is available in the Vanguard research paper *Mutual fund ratings and future performance* (Philips and Kinniry, 2010).

COST

Take control of your costs; keep more of your returns

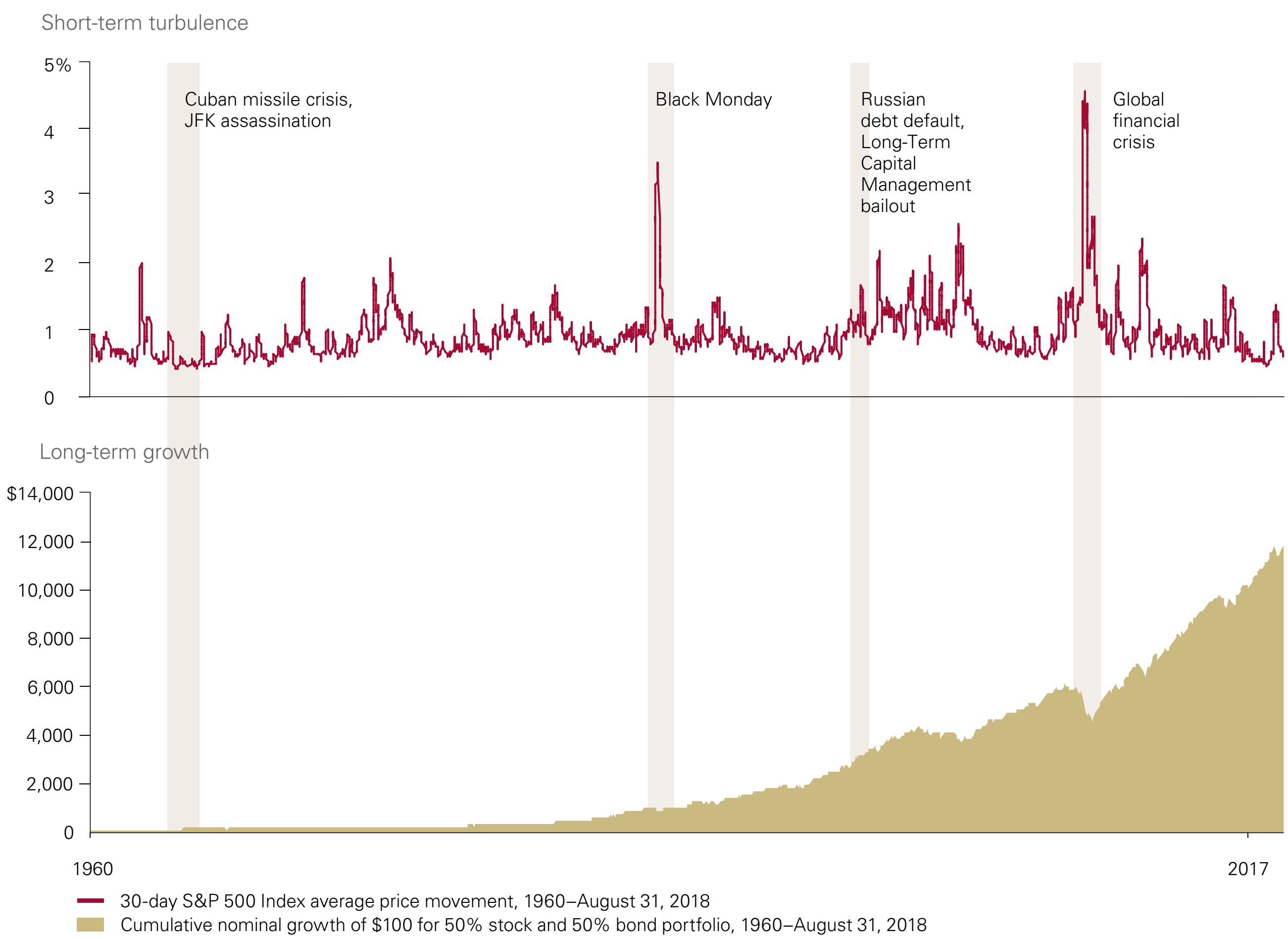
- You can't control the markets, but you can often control what you pay to invest. Every dollar you pay in fees is a dollar less earning a return for you, and that can make an enormous difference over time.
- Index funds and ETFs tend to have costs that are among the lowest in the fund industry.

DISCIPLINE

Maintain perspective and long-term discipline

- Abandoning a planned investment strategy can be costly, and some of the most significant factors are behavioral: the failure to rebalance, the allure of market-timing, and the temptation to chase performance.
- Working with an advisor can help you keep a long-term perspective and resist the reactionary impulses that all investors sometimes face.

Volatility is a fact of life—remember to stay the course



Sources: Vanguard calculations, using data from S&P Dow Jones Indices, Bloomberg, and Thomson Reuters Datastream.

Notes: Growth of $100 begins at January 31, 1960. U.S. stocks are represented by the S&P 90 Index from 1926 to March 3, 1957; the S&P 500 Index from March 4, 1957, to 1974; the Dow Jones Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. U.S. bonds are represented by the S&P High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman Brothers U.S. Long Credit AA Index from 1973 to 1975, and the Bloomberg Barclays U.S. Aggregate Bond Index thereafter.

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All investing is subject to risk, including possible loss of principal.

Diversification does not ensure a profit or protect against a loss.

There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income.

For more information about Vanguard funds or Vanguard ETFs, contact your financial advisor to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

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