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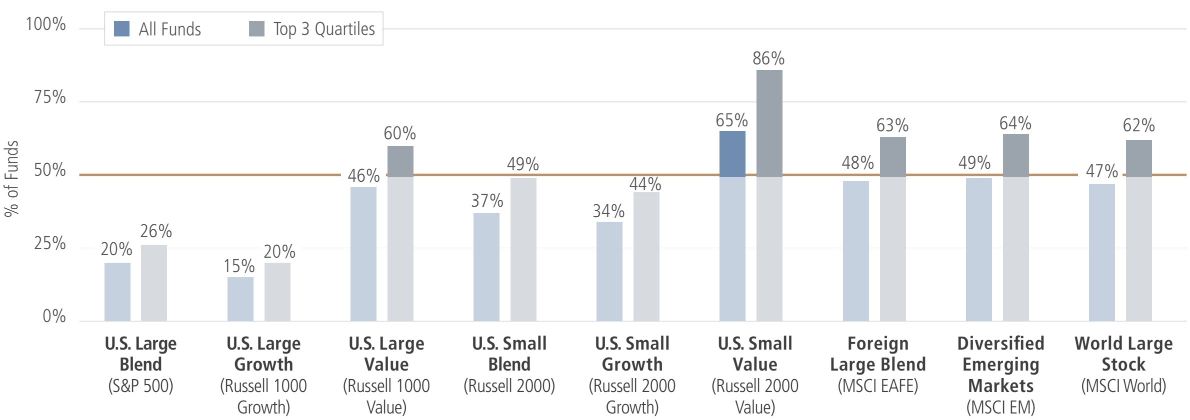
The Overlooked Persistence of Active Outperformance

- Despite what conventional wisdom has suggested, active management outperformance has continued to persist. Eliminating a small portion of poor-performing funds from consideration substantially increased the percentage of active funds that outperformed the index over the last 10 years.
- Analyzing rolling returns instead of static time frames shows a much more granular view of a manager's performance over time.
- Relative performance during the most recent bear market suggests that active managers may provide investors with downside mitigation when indexes are in sharp decline.

The Passive Argument: Missing Pieces

Proponents of passive investing have argued that an active approach does not provide alpha after fees. Often presented is evidence that fewer than 50% of all active managers outperform their benchmark indexes after fees over some static period of time. We contend that active outperformance has persisted and can be found by simply removing a small subset of the worst-performing funds from consideration. The chart below depicts a typical argument for passive investing—as well as what happens once the bottom-performing 25% from within each equity category is removed from the comparison.

Percentage of Active Funds that Have Outperformed the Index after Fees, January 2008 through December 2017

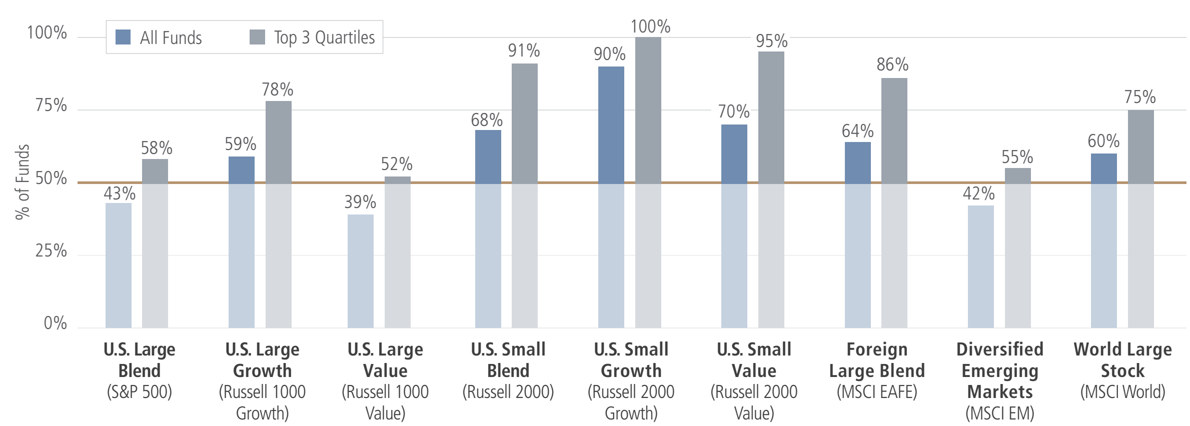


Source: Morningstar. Represents actively managed open-end U.S. domiciled funds. Performance is based on funds' oldest share class. Quartile rank is based on the annualized 10-year return. Indices are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

Reframing the Debate to Include Both Bull and Bear Markets

Performance should be evaluated over both up and down market cycles. Proponents of passive investing have commonly used a 10-year time period to show their success. A measurement period beginning in January 1998 captures both bull and bear market periods. The 20-year chart below shows that active management has historically performed quite well over multiple market cycles. Eliminating the bottom quartile of performers again provides an even starker contrast.

Percentage of Active Funds that Have Outperformed the Index after Fees, January 1998 through December 2017

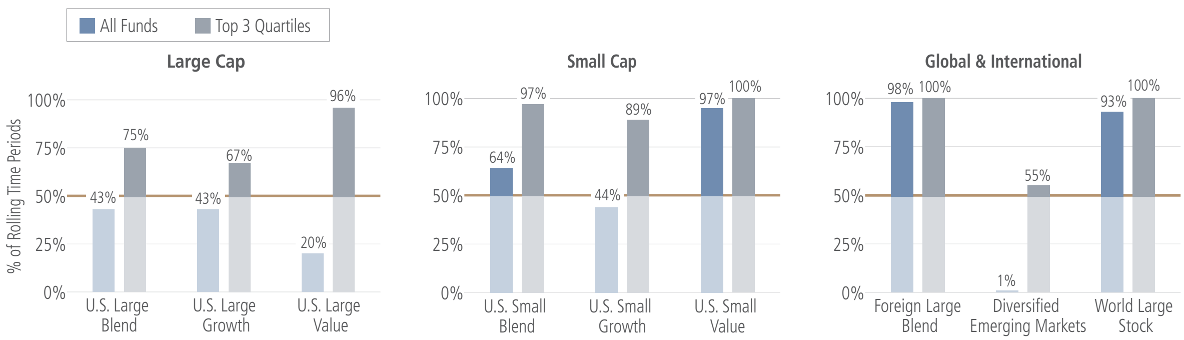


Source: Morningstar. Represents actively managed open-end U.S. domiciled funds. Performance is based on funds' oldest share class. Quartile rank is based on the annualized 20-year return. Indices are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

Rolling vs. Static Time Frames

Rolling period data can better reflect an average investor's experience and a manager's performance over time. Examining performance on a rolling basis provides many more time periods. For example, rolling 10-year periods beginning in January 1998 capture 121 unique time periods, which can provide a more comprehensive view of an investment's performance over the past 20 years.

Percentage of Time Periods Average Morningstar Category of Active Funds Outperformed Its Index After Fees Based on Rolling 10-Year Monthly Returns, January 1998 through December 2017 (121 Time Periods)



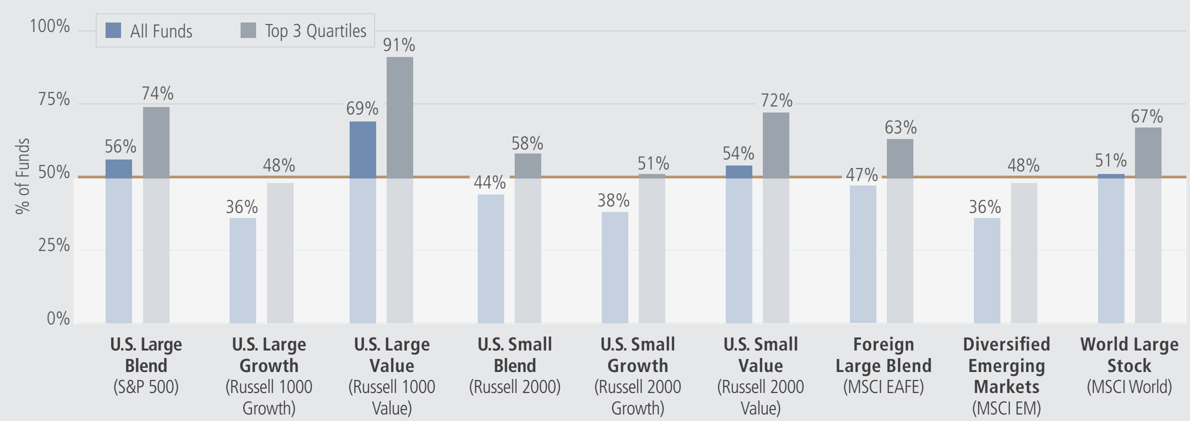
75% | In 7 out of 9 categories, the Top 3 Quartiles outperformed the index at least 75% of the time

Source: Morningstar. Morningstar category net average annualized return covering 121 time periods (January 1998 through December 2017). Represents actively managed open-end U.S. domiciled funds, including funds that have been liquidated. Performance is based on funds' oldest share class. Quartile rank is based on each 10-year rolling month-end time period. Star rating is based on funds' "Overall Rating" as of each 10-year rolling month-end time period. Indices are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

A Look at Downside Mitigation

- Despite the lack of a significant market downturn in nearly a decade, it's still important for investors to be prepared. We examined the most recent bear market related to the global financial crisis from 2007–2009 and found that active strategies generally suffered smaller losses than their benchmarks during this period of distress, which may suggest that passive strategies may carry more risk going forward than investors expect.
- Passive investments by design provide near-total exposure to the performance of a benchmark index, both when it's rising and when it's falling. Active managers, in contrast, have the ability to employ risk mitigation techniques in an effort to protect portfolios from feeling the full force of a declining market.
  - Focusing on the top 75% of managers in each category found that more than half of active managers outperformed in seven of the nine categories, with five categories experiencing success rates greater than 60%.

Percentage of Active Funds that Have Outperformed the Index After Fees, November 2007 through February 2009



Source: Morningstar. Represents actively managed open-end U.S. domiciled funds, including funds that have been liquidated. Performance is based on fund's oldest share class. Quartile rank is based on the 11/2007–2/2009 time period. "Active Cumulative Relative Return" is based on the Morningstar category averages. For the period 11/2007 through 2/2009, All Funds and Top 3 Quartile Active Mutual Fund Cumulative Average Returns are as follows: U.S. Large Blend: -50.1%, -47.8%; U.S. Large Growth: -49.5%, -47.6%; U.S. Large Value: -51.8%, -49.4%; U.S. Small Blend: -52.4%, -49.8%; U.S. Small Growth: -53.5%, -51.2%; U.S. Small Value: -51.4%, -48.7%, Foreign Large Blend: -56.1%, -54.4%; Diversified Emerging Markets: -62.8%, -61.2%, World Large Stock: -53.0%, -50.7%. For the same period, index returns are as follows: S&P 500: -50.9%, Russell 1000 Growth: -48.0%, Russell 1000 Value: -54.4%, Russell 2000: -52.0%, Russell 2000 Growth: -52.3%, Russell 2000 Value: -51.9%, MSCI EAFE: -56.7%, MSCI EM: -61.4%, MSCI World: -54.0%. Indices are unmanaged and are not available for direct investment. Investing entails risks, including possible loss of principal. **Past performance is no guarantee of future results.**

The **S&P 500 Index** is a float-adjusted market capitalization-weighted index that focuses on the large-cap segment of the U.S. equity market, and includes a significant portion of the total value of the market. The **Russell 2000® Index** is a float-adjusted market capitalization-weighted index that measures the performance of the small-cap segment of the U.S. equity market. It includes approximately 2,000 of the smallest securities in the Russell 3000 Index (which measures the performance of the 3,000 largest U.S. public companies based on total market capitalization). The index is rebalanced annually in June. The **Russell 2000 Growth Index** is a float-adjusted market capitalization-weighted index that measures the performance of the small-cap growth segment of the U.S. equity market. It includes those Russell 2000 Index companies with higher price-to-book ratios and higher forecasted growth rates. The index is rebalanced annually in June. The **Russell 2000 Value Index** is a float-adjusted market capitalization-weighted index that measures the performance of the small-cap value segment of the U.S. equity market. It includes those Russell 2000 Index companies with lower price-to-book ratios and lower forecasted growth rates. The index is rebalanced annually in June. The **Russell 1000 Index** is a float-adjusted market capitalization-weighted index that measures the performance of the large-cap segment of the U.S. equity market. It includes approximately 1,000 of the largest securities in the Russell 3000 Index (which measures the performance of the 3,000 largest U.S. public companies based on total market capitalization). The index is rebalanced annually in June. The **Russell 1000 Growth Index** is a float-adjusted market capitalization-weighted index that measures the performance of the large-cap growth segment of the U.S. equity market. It includes those Russell 1000 Index companies with higher price-to-book ratios and higher forecasted growth rates. The index is rebalanced annually in June. The **Russell 1000 Value Index** is a float-adjusted market capitalization-weighted index that measures the performance of the large-cap value segment of the U.S. equity market. It includes those Russell 1000 Index companies with lower price-to-book ratios and lower forecasted growth rates. The index is rebalanced annually in June. The **Russell 3000 Index** is a float-adjusted market capitalization-weighted index that measures the performance of the 3,000 largest U.S. public companies based on total market capitalization. The index is rebalanced annually in June. The **MSCI EAFE® Index** (Europe, Australia, Far East) is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the U.S. and Canada. As of November 27, 2013, the MSCI EAFE® Index consist of the following 21 developed market country indices: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom. Net total return indexes reinvest dividends after the deduction of withholding taxes, using (for international indexes) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties. Gross total return indexes reinvest as much as possible of a company's dividend distributions, regardless of withholding taxes that a non-resident may experience. The **MSCI® Emerging Markets Index** is a free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of emerging markets. The index consists of the following 24 emerging market country indexes: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, the Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey and the UAE. Net total return indexes reinvest dividends after the deduction of withholding taxes, using (for international indexes) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties. The **MSCI® World Index (Net)** is a broad global equity benchmark that represents large and mid-cap equity performance across 23 developed markets countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. It covers approximately 85% of the free float-adjusted market capitalization in each country and does not offer exposure to emerging markets.

Morningstar Large Blend Category funds are fairly representative of the overall U.S. stock market in size, growth rates, and price. Stocks in the top 70% of the capitalization of the U.S. equity market are defined as large cap. The blend style is assigned to portfolios where neither growth nor value characteristics dominate. These portfolios tend to invest across the spectrum of U.S. industries, and owing to their broad exposure, the portfolios' returns are often similar to those of the S&P 500 Index. **Morningstar Large Growth Category** funds invest primarily in big U.S. companies that are projected to grow faster than other large-cap stocks. Stocks in the top 70% of the capitalization of the U.S. equity market are defined as large cap. Growth is defined based on fast growth (high growth rates for earnings, sales, book value, and cash flow) and high valuations (high price ratios and low dividend yields). Most of these portfolios focus on companies in rapidly expanding industries. **Morningstar Large Value Category** funds invest primarily in big U.S. companies that are less expensive or growing more slowly than other large-cap stocks. Stocks in the top 70% of the capitalization of the U.S. equity market are defined as large cap. Value is defined based on low valuations (low price ratios and high dividend yields) and slow growth (low growth rates for earnings, sales, book value, and cash flow).**Morningstar Small Blend Category** funds favor U.S. firms at the smaller end of the market-capitalization range. Some aim to own an array of value and growth stocks while others employ a discipline that leads to holdings with valuations and growth rates close to the small-cap averages. Stocks in the bottom 10% of the capitalization of the U.S. equity market are defined as small cap. The blend style is assigned to portfolios where neither growth nor value characteristics predominate. **Morningstar Small Growth Category** funds focus on faster-growing companies whose shares are at the lower end of the market-capitalization range. These portfolios tend to favor companies in up-and-coming industries or young firms in their early growth stages. Because these businesses are fast-growing and often richly valued, their stocks tend to be volatile. Stocks in the bottom 10% of the capitalization of the U.S. equity market are defined as small cap. Growth is defined based on fast growth (high growth rates for earnings, sales, book value, and cash flow) and high valuations (high price ratios and low dividend yields). **Morningstar Small Value Category** funds invest in small U.S. companies with valuations and growth rates below other small-cap peers. Stocks in the bottom 10% of the capitalization of the U.S. equity market are defined as small cap. Value is defined based on low valuations (low price ratios and high dividend yields) and slow growth (low growth rates for earnings, sales, book value, and cash flow). **Morningstar Foreign Large Blend Category** funds invest in a variety of big international stocks. Most of these portfolios divide their assets among a dozen or more developed markets, including Japan, Britain, France, and Germany. These portfolios primarily invest in stocks that have market caps in the top 70% of each economically integrated market (such as Europe or Asia ex-Japan). The blend style is assigned to portfolios where neither growth nor value characteristics predominate. These portfolios typically will have less than 20% of assets invested in U.S. stocks. **Morningstar Diversified Emerging Markets Category** funds tend to divide their assets among 20 or more nations, although they tend to focus on the emerging markets of Asia and Latin America rather than on those of the Middle East, Africa, or Europe. These portfolios invest at least 70% of total assets in equities and invest at least 50% of stock assets in emerging markets. **Morningstar World Stock Category** funds have few geographical limitations. It is common for these portfolios to invest the majority of their assets in the U.S., Europe, and Japan, with the remainder divided among the globe's smaller markets. These portfolios typically have 20% – 60% of assets in U.S. stocks.

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