HIGHLAND

INSIGHT
MARCH 2018

BUILDING THE PERFECT BEAST: DIVERSIFICATION IN ACTION

In a result that surprised football fans from Boston to Las Vegas, regular season MVP Tom Brady failed to carry his team to victory in the Super Bowl earlier this year. It was certainly not for lack of effort, as Brady's statistical performance was truly extraordinary. His 505 total passing yards broke his own Super Bowl record and exceeded his overall average in prior Super Bowls by more than 170 yards. Brady clearly lived up to his reputation as one of the greatest quarterbacks of all time. Nonetheless, the team's defeat really shouldn't have been that surprising.

If we look back over the last 50 seasons of professional football, the regular season MVP has won the Super Bowl just 18% of the time (and not once since 2000). For professional basketball and hockey, the regular season MVP has claimed the title just 34% and 22% of the time, respectively. The lesson is simple: Even the best players can't do it all, at least not all the time. Indeed, the interaction of an entire team will have a far bigger impact on success than any single individual.

The obvious parallel in investing is the concept of diversification. It is tempting for investors to focus their attention on trying to identify the single best asset class, or the single best fund manager. This is an exceedingly difficult task for even the most experienced investor, and one made all the more difficult by innate human biases such as home country bias (**Investors Without Borders, Part I**) and the fear of missing out (**More Than a Feeling: Why Diversification Still Matters**). Still, investors' tendency to emphasize star players endures, with limited concern for fielding a fully diversified roster of role players.

In Part I of this *Insight*, we examined the pitfalls of emotionally biased investing and concluded that dispassionate decision-making frameworks are better suited to achieve investors' goals. In this follow-up, we will discuss Highland's approach to portfolio construction and emphasize the many benefits of diversification. These benefits relate primarily to risk management, including reduced portfolio volatility, smaller drawdowns, and faster recovery periods during times of market stress. Our analysis will show that a properly diversified portfolio built on broad consistency exhibits far more attractive characteristics than an overly concentrated portfolio built on narrow speculation. By committing to diversification, clients will also limit their chances of making emotional decisions, which negatively impact returns far more often than not.

PORTFOLIO CONSTRUCTION

The decision to diversify is directly related to an investor's tolerance for risk. This risk appetite is unique to every investor and is generally influenced by overall financial strength, liquidity constraints, time horizon, and conviction in future outlook, among many other factors. At Highland, our most important duty is to construct portfolios based on a thorough understanding of how each client's risk tolerance and

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return objective relates to their broader mission and organizational goals. Diversification is perhaps the most important tool we can use to help clients reach their goals.

So what does it really mean to be diversified? Put simply, diversification is achieved by allocating capital to different investments that respond differently to diverse return drivers and risk factors. If each distinct portfolio allocation has relatively unique characteristics, then the correlations of those allocations will be low relative to one another. Thus for any given time period, investors should observe that some allocations will lead while others will lag. Importantly, diversification generally produces an asymmetric tradeoff between return and risk. For a very small decrease in return, diversified portfolios should gain a much larger reduction in risk.

At Highland, we purposefully build diversified portfolios that capture exposures to different fundamental economic drivers. Specifically, client portfolios carry strategic (i.e., constant) allocations to assets corresponding to 1) Growth, 2) Diversified Alpha, 3) Inflation Sensitive, and 4) Crisis Hedges. Each of these unique exposures will have periods of relative outperformance and relative underperformance. However, their combination will vastly improve the probability that client portfolios remain more tightly bound to established return and risk objectives. Our proprietary Diffusion Index further enhances risk-adjusted returns through its emphasis on market and economic factors that signal when to increase and decrease overall risk in client portfolios.

A brief discussion of these four broad portfolio exposures is helpful in understanding the benefits of diversification. First, **Growth** assets are designed to capture the benefits of accelerating economic activity. These investments typically include both public and private equities and are highly sensitive to broader macroeconomic developments. Growth positions typically respond favorably to improving global growth expectations, as has been the case in recent quarters. Diversification within the Growth allocation is particularly important, as it allows investors to participate in accelerating and niche markets across geographies and industries. (**Investors Without Borders, Part Deux**).

Growth assets typically represent the largest source of long-term portfolio returns, but they also carry the highest risk. As a result, Highland employs **Diversified Alpha** strategies to access uncorrelated returns that can dampen risk without compromising growth. These strategies generally include hedge funds, but underlying economic exposures vary widely within this piece of the portfolio. Equity hedge strategies seek to take advantage of overvalued or overhyped equity securities, while relative value strategies generally look to exploit divergent valuations across (rather than within) asset classes. Credit and event-driven strategies use distressed debt investments to take advantage of temporary mispricings. Finally, macro strategies seek to gain from established trends, or changes in trend, in broader markets such as currencies, interest rates, and commodities. Within each of these strategies, our goal is to focus on managers' ability to deliver returns in excess of the market, while also minimizing overlapping market exposures.

Next, we use **Inflation Sensitive** strategies to protect the long-term purchasing power of portfolios in different inflation environments. Within this allocation, private real estate strategies should outperform when inflation and economic growth accelerate. Conversely, inflation-linked bonds are used for protection in periods of rising inflation and economic stagnation. Commodities should provide higher returns during inflation shocks.

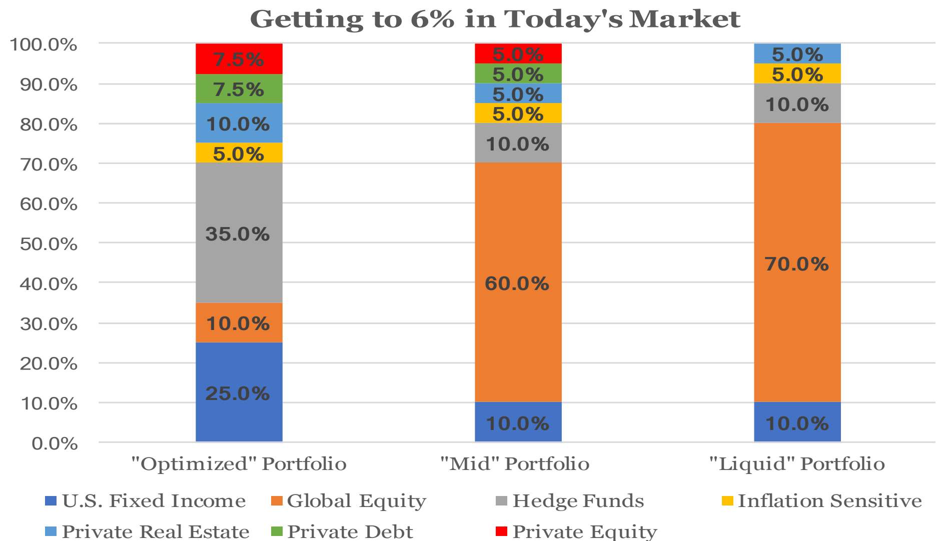
Lastly, our strategic allocation to **Crisis Hedges** is purposefully designed to offer downside protection during "risk off" environments, including equity market drawdowns. This allocation is typically geared toward high-quality fixed income investments, including government securities and highly rated credits. While this piece of the portfolio rarely leads the way, it can materially mitigate damage in difficult market environments.

The goal with each unique portfolio allocation is to maintain a diversified set of exposures that can be combined to drive strong performance through all phases of market and economic cycles. Depending on client-specific circumstances, these pieces can be combined in different ways to deliver on return and risk objectives. Importantly, diversification can be used for both risk reduction and return enhancement in today's environment, as we expect long-term equity and fixed income returns to fall short of their historical averages. **Figure 1** offers an example of the different asset allocation mixes that can be used to meet a 6% return target, with each unique mix corresponding to different liquidity constraints. The "Optimized" portfolio is designed for clients without liquidity constraints, the

"Mid" portfolio is designed for clients with some liquidity constraints, and the "Liquid" portfolio is designed for clients with significant liquidity constraints.

Notably, this 6% return target is precisely in line with our long-term global equity return forecast, though the expected volatilities for the diversified portfolios are much lower. The "Optimized," "Mid," and "Liquid" portfolios have expected volatilities of 7.2%, 13.0%, and 13.5%, while our forecast for global equity volatility is 17.5%.

FIGURE 1



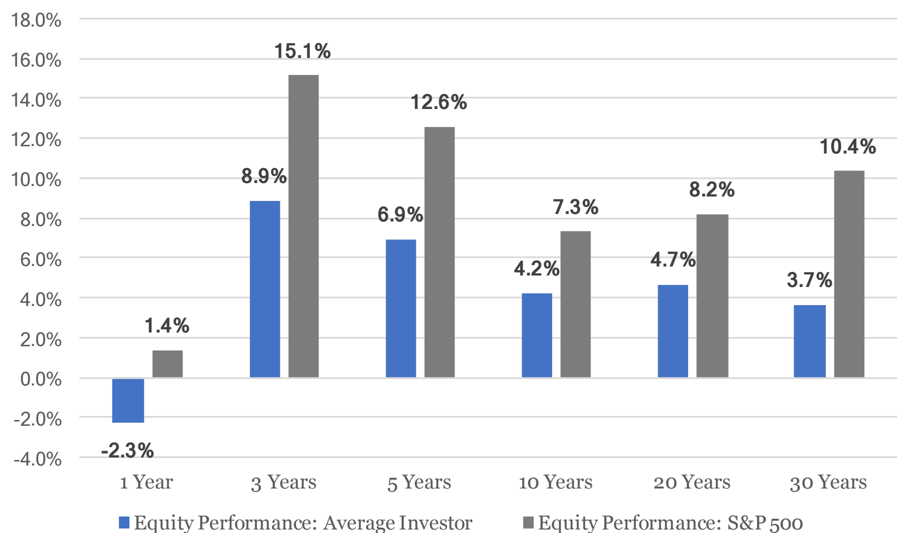
SOURCE: HIGHLAND ASSOCIATES

DIVERSIFICATION THROUGH HISTORY

Skeptics will argue that equity portfolios typically outperform more diversified portfolios over most longer-term periods. This is both intuitive and empirically correct, as the higher risk of equities should be and has been rewarded with higher returns. However, investors are only able to realize that outperformance if they can endure relatively frequent and absolutely significant equity drawdowns. Since the end of World War II, the U.S. equity market (represented by the S&P 500) has recorded seven distinct bear markets, defined as a decline of at least 20%. On average, equities have lost more than 34% of their value during these periods and taken more than three years to recover their previous highs. These numbers do not include the fallout from the stock market panic of 1929 that helped to create the Great Depression. From its peak in October 1929 to its trough in June 1932, the S&P 500 declined nearly 82%, and the index did not fully recover these losses until 1945.

During such times of stress, it is virtually impossible to stay the course. The overwhelming majority of investors will eventually capitulate by selling most or all of their equity exposure to ease the pain, often near the market bottom. This emotional response effectively locks in significant losses. With wounds still fresh, investors are also usually slow to add back to their equity positions as they recover, further compounding their relative losses. All of this leads to a predictable and repeatable cycle of investors underperforming their investments, as indicated in **Figure 2**.

FIGURE 2



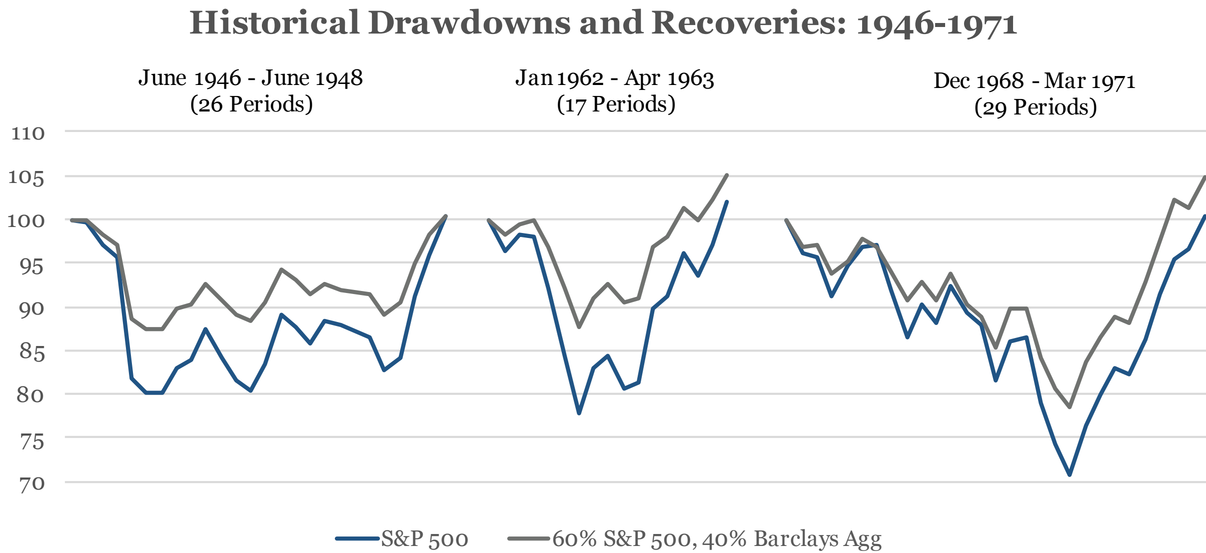
SOURCE: DALBAR, INC.; HIGHLAND ASSOCIATES. PER DALBAR: "RETURNS ARE FOR THE PERIOD ENDING DECEMBER 30, 2015. AVERAGE EQUITY INVESTOR PERFORMANCE RESULTS ARE CALCULATED USING DATA SUPPLIED BY THE INVESTMENT COMPANY INSTITUTE. INVESTOR RETURNS ARE REPRESENTED BY THE CHANGE IN TOTAL MUTUAL FUND ASSETS AFTER EXCLUDING SALES, REDEMPTIONS AND EXCHANGES. THIS METHOD OF CALCULATION CAPTURES REALIZED AND UNREALIZED CAPITAL GAINS, DIVIDENDS, INTEREST, TRADING COSTS, SALES CHARGES, FEES, EXPENSES, AND ANY OTHER COSTS. AFTER CALCULATING INVESTOR RETURNS IN DOLLAR TERMS, TWO PERCENTAGES ARE CALCULATED FOR THE PERIOD EXAMINED: TOTAL INVESTOR RETURN RATE AND ANNUALIZED INVESTOR RETURN RATE. TOTAL RETURN RATE IS DETERMINED BY CALCULATING THE INVESTOR RETURN DOLLARS AS A PERCENTAGE OF THE NET OF THE SALES, REDEMPTIONS, AND EXCHANGES FOR EACH PERIOD.

The data gathered by DALBAR, Inc., show unequivocally that the average equity investor substantially lags the S&P 500 over both short- and long-term periods. DALBAR notes that investors' cash needs and fund expenses account for a portion of the performance shortfall but maintains that voluntary investor behavior is by

far the biggest driver of relative underperformance. For example, of the 352 basis points of annualized underperformance over the trailing 20-year period ending December 2015, DALBAR concludes that 150 basis points is attributable to "panic selling, excessively exuberant buying, and attempts at market timing." For a $100,000,000 portfolio built to earn 6% annualized, the effect of poor timing decisions would create a nearly $80 million shortfall over a 20-year time horizon.

A closer examination of prior bear markets further demonstrates the power of diversification. **Figure 3** illustrates the performance of the S&P 500 compared to a more balanced portfolio that also contains a 40% allocation to fixed income (represented by the Bloomberg Barclays U.S. Aggregate Index). For each of the three equity bear markets shown, the balanced portfolio suffered a far smaller drawdown and produced a faster recovery than the standalone equity portfolio.

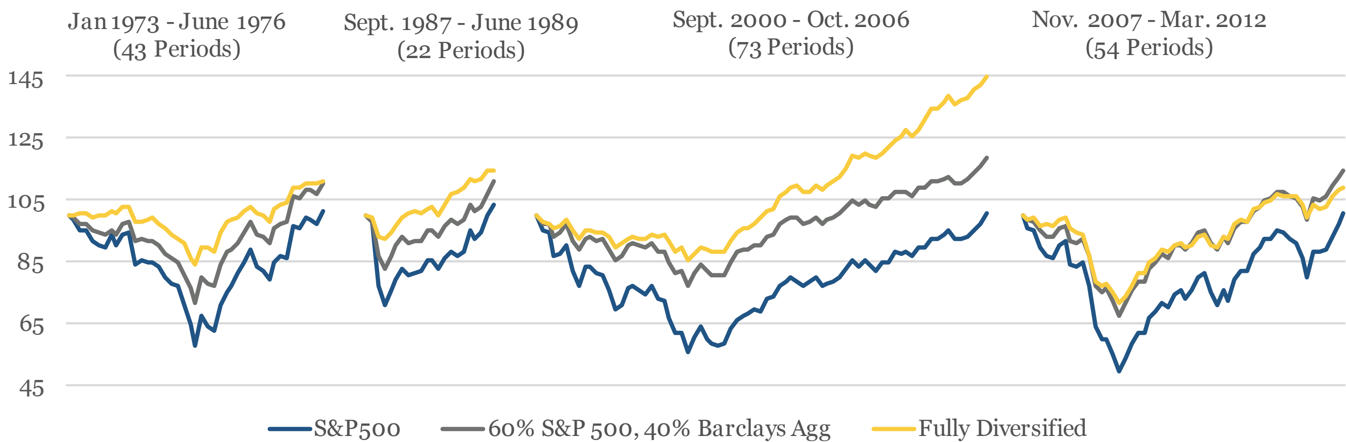
FIGURE 3



SOURCE: STANDARD & POOR'S; BARCLAYS; IBBOTSON ASSOCIATES; HIGHLAND ASSOCIATES

For more recent periods, we can also examine a fully diversified portfolio that includes a broader collection of assets. **Figure 4** illustrates the performance of 1) the S&P 500, 2) the traditional balanced portfolio, and 3) a fully diversified portfolio that includes allocations to global equity (37.5%), domestic fixed income (32.5%), hedge funds (10%), inflation-sensitive assets (5%), private real estate (5%), private debt (5%), and private equity (5%). The exact mix of assets in the fully diversified portfolio was determined based on a 6% long-term return objective, some liquidity constraints, and an outlook for asset class returns that conformed to long-term averages. As indicated below, the fully diversified portfolio exhibited superior return and risk characteristics relative to both the U.S. equity portfolio and the traditional balanced portfolio.

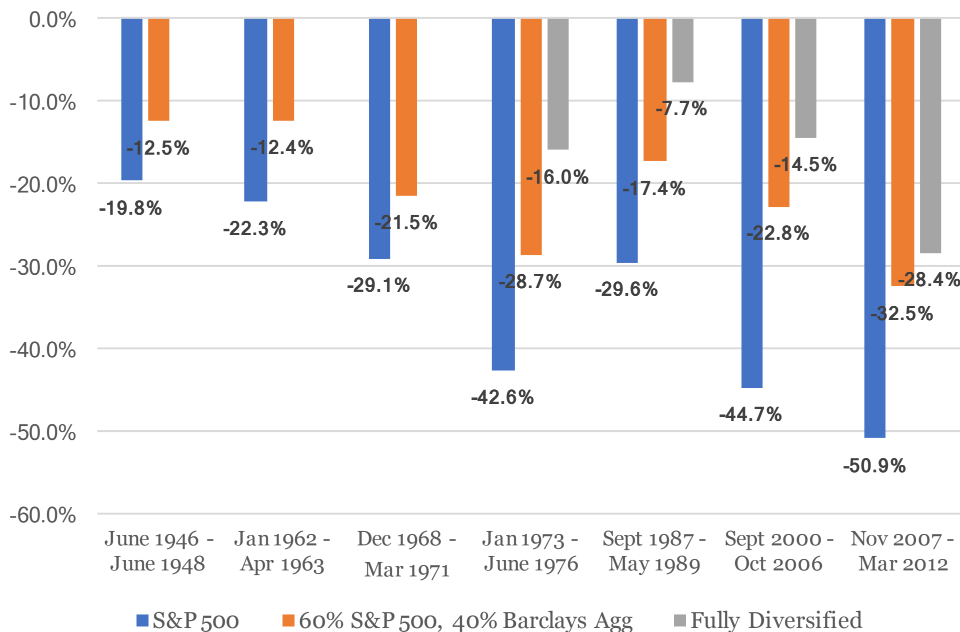
FIGURE 4



SOURCE: STANDARD & POOR'S; BARCLAYS; HRFI; MSCI; NCREIF; CAMBRIDGE; HIGHLAND ASSOCIATES

A summary of maximum drawdowns for each of the portfolios is provided in **Figure 5**. Over common periods, the fully diversified portfolio produced much smaller drawdowns and much faster recovery periods than both the S&P 500 and the traditional balanced portfolio.

FIGURE 5



SOURCE: STANDARD & POOR'S; IBBOTSON ASSOCIATES; BARCLAYS; HFRI; MSCI; NCREIF; CAMBRIDGE; HIGHLAND

We've established that diversification can substantially reduce risk by many metrics. So what is the sacrifice in return required to achieve diversification? As it turns out, not much. From June 1986 through December 2017 (the longest common period where investors could choose between equities and fully diversified portfolios), the S&P 500 returned 10.31% annualized, versus 9.50% annualized for the fully diversified portfolio. Over this same period, the S&P 500's annualized volatility was 14.9%, compared to just 8.9% for the diversified portfolio. In sacrificing just 80 basis points of performance per year, diversification raised risk-adjusted returns by over 55%.

LOOKING AHEAD

While traditional equity and fixed income investments have performed quite well post-financial crisis, there are warning signs ahead. Historically high valuations in equities and historically tight credit spreads in fixed income should limit upside potential while also creating the potential for significant downside risk. The return of volatility creates additional uncertainty, as investors come to grips with expectations for higher levels of interest rates and inflation. In this environment, we believe strongly that diversifying across uncorrelated

sources of return and risk will add value. Allocations to hedge funds, inflation-sensitive assets, private real estate, private debt, and private equity should help to drive lower correlations and ultimately stronger risk-adjusted returns. **Figure 6** illustrates historical correlations among each of the asset classes used in client portfolios.

FIGURE 6

Historical Correlations Among Asset Classes

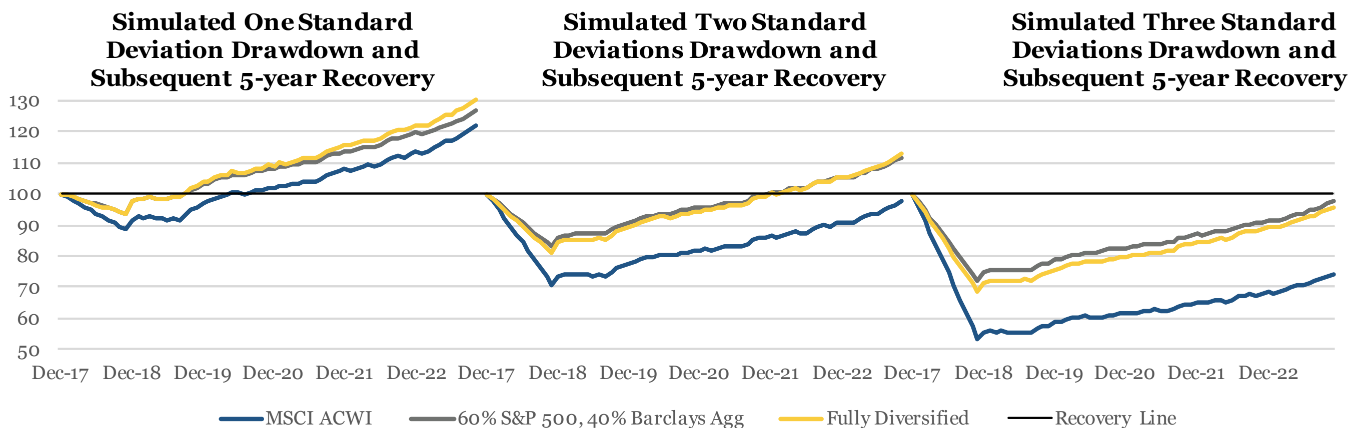
	Global Equity	Fixed Income	Hedge Funds	Inflation Sensitive	Private Real Estate	Private Debt	Private Equity
Global Equity	1.00	---	---	---	---	---	---
Fixed Income	0.07	1.00	---	---	---	---	---
Hedge Funds	0.74	0.09	1.00	---	---	---	---
Inflation Sensitive	0.28	0.08	0.30	1.00	---	---	---
Private Real Estate	-0.02	-0.14	-0.01	-0.03	1.00	---	---
Private Debt	0.07	0.03	0.10	0.00	0.14	1.00	---
Private Equity	0.21	-0.09	0.25	0.06	0.49	0.21	1.00

SOURCE: STANDARD & POOR'S; BARCLAYS; HFRI; MSCI; NCREIF; CAMBRIDGE; HIGHLAND ASSOCIATES. DATA COVERS MONTHLY RETURNS FROM JUNE 1986 THROUGH DECEMBER 2017 FOR MSCI ACWI (GLOBAL EQUITY), BLOOMBERG BARCLAYS U.S. AGG (FIXED INCOME), HFRI FUND-WEIGHTED INDEX (HEDGE FUNDS), CUSTOMER INFLATION BENCHMARK (INFLATION SENSITIVE), NCREIF ODCE (PRIVATE REAL ESTATE), CAMBRIDGE LBO INDEX (PRIVATE DEBT), CAMBRIDGE PE INDEX (PRIVATE EQUITY).

Importantly, the correlations shown in Figure 6 relate to the performances of broad indices designed to represent these individual asset classes. While it does appear that hedge fund and equity returns are fairly correlated, there are two important caveats. First, the synchronization of central bank monetary policy around the world has artificially heightened correlations among all asset classes. However, we can already see this unwinding as the U.S. Federal Reserve and other central banks begin taking steps toward policy normalization. Second, Highland's differentiated approach emphasizes hedge fund strategies with lower market exposure (beta) and unique alpha sources that have minimal correlation to the broad market and other strategies.

Finally, we feel confident that our recommended allocations beyond traditional equity and fixed income will continue to produce superior risk-adjusted performance, just as they have done in the past. Figure 7 illustrates simulated future drawdowns for 1) the MSCI All Country World (a proxy for global equities), 2) the traditional balanced portfolio (60% MSCI ACWI, 40% Bloomberg Barclays U.S. Aggregate), and 3) a fully diversified portfolio that includes allocations to global equity (37.5%), domestic fixed income (32.5%), hedge funds (10%), inflation-sensitive assets (5%), private real estate (5%), private debt (5%), and private equity (5%). The portfolios are designed to mimic the performance of broader market indices and do not include any potential for excess return.

FIGURE 7



SOURCE: STANDARD & POOR'S; BARCLAYS; HFRI; MSCI; NCREIF; CAMBRIDGE; HIGHLAND ASSOCIATES

The fully diversified portfolio clearly outperforms the global equity portfolio in each of the three simulations, producing lower drawdowns, faster recoveries, and superior absolute performance.

GAME PLAN

Given the historically strong performance of U.S. equities following the financial crisis, it is hard to blame investors for questioning the merits of diversification. Still, investors should remember that investing is a team sport, and even the strongest player can't do it alone. Objectively, a commitment to diversification offers investors superior risk-adjusted returns throughout market cycles and significant protection during downturns, all at the cost of a small reduction in absolute return. Emotionally, diversification offers investors peace of mind and a reliable framework for navigating both the euphoria of market highs and the despair of market lows. We can think of no better way to properly protect your organization's goals, and your ability to achieve them.

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