

Portfolio Construction in and out of the Core for the Next Decade

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The ability of the standard 60/40 portfolio of global stocks and aggregate bonds to provide sufficient returns for investors has been under scrutiny for the past few years. And that attention is warranted, as recent returns have not been as strong as they were in prior decades.

Questions about the future viability of this mainstay allocation will likely increase in the wake of the COVID-19 pandemic's distortive impact on certain asset classes — especially fixed income yields. Also, policy responses to the pandemic have been inflationary to asset prices, causing stock market earnings multiples to increase significantly beyond their historical averages.

Just as the pandemic has amplified certain societal trends, it has the potential to advance the deterioration of the 60/40 portfolio's risk/return profile. As a result, structuring portfolios in and out of the core now requires a more tailored approach in order to meet specific return objectives and ensure that the portfolio remains properly diversified.

The Historical Track Record of the Standard 60/40 Portfolio

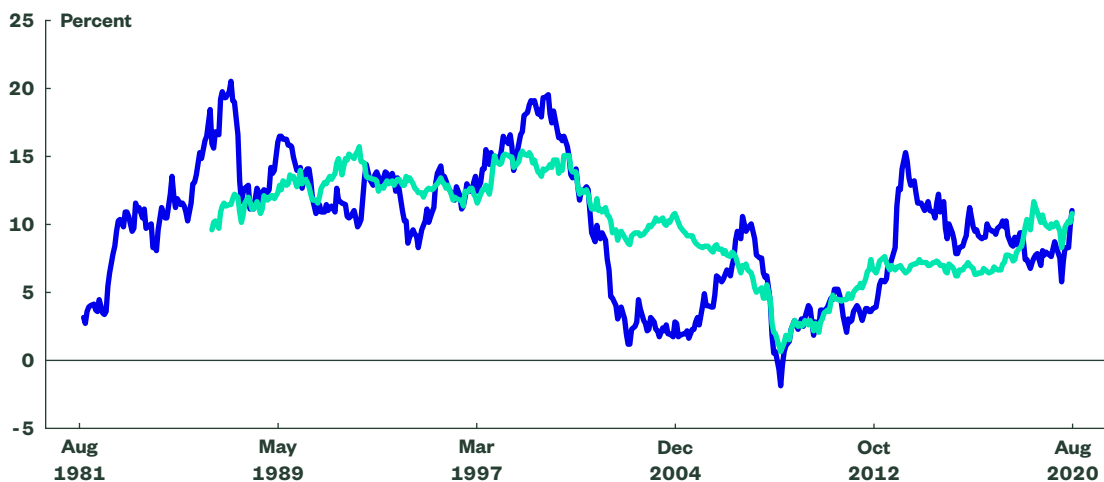
While many claim that the standard 60/40 portfolio is no longer a viable mix of global stocks and aggregate core bonds,¹ it is worth noting that the portfolio has produced double-digit returns in four calendar years in the past decade. However, that is less than the six years of double-digit returns in both the 2000s and 1990s. Yet, while the standard portfolio suffered four years of losses in the 2000s, the 2010s saw just three years of losses of far less magnitude. The average loss in the 2010s was -2%, versus -10% in the 2000s. And although there was only one year with a loss in the 1990s, it was a 6% decline — greater than any decline witnessed in the past decade.²

Global stock return time series do not go as far back as the S&P 500® Index. Using the latter, however, as the proxy for the equity allocation can broaden the time horizon past the 1990s to the 1970s and provide more data to analyze. Unfortunately, because total return data is not available for the S&P 500 until 1988, price returns on the S&P 500 Index were used until then.

More data reveals that the standard 60/40 portfolio of S&P 500 stocks and aggregate core bonds provided 91% of the return of stocks but with 64% less volatility and a 36% lesser max drawdown³ — evidence of the potential benefits of asset class diversification and the utility of such a portfolio. Additionally, as shown in Figure 1, on a rolling five- and 10-year basis, there have been only three time periods when returns were negative on a five-year basis — and there have been no periods with losses in a rolling 10-year time frame. Once again, this showcases the potential power of asset class diversification.

Figure 1
**Rolling 60/40
Portfolio Returns**

■ Rolling 5 Year
■ Rolling 10 Year



Source: Bloomberg Finance L.P., as of September 30, 2020. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not contain fees.

Based on these data points using S&P 500 data, the experience investors have had with this type of portfolio is not inherently bad. However, in 45 out of the past 50 (90%) rolling five-year windows, the rolling five-year return was below both the long-term median figure of 9.9% and levels from prior years.⁴ Today, this trend of being below long-term median returns is likely to be amplified, prompting investors to reconsider their approach to portfolio construction.

Not-So-Great Expectations

Our current economic environment is marked by idiosyncratic uncertainty that has spurred a new volatility regime. Returns are more fragile than usual, evidenced by 47% of days through three-quarters of the year having a move of more than 1% in either direction, compared with the historical average rate of 21% of days for a *full* year dating back to 1927.⁵ Such fragility makes forecasting return paths inherently difficult. However, historical guideposts can be helpful in setting expectations. For stocks and bonds, the guideposts are centered on long-term historical relationships that ring true even in a time of rampant uncertainty: the price an investor is willing to pay for a firm’s earnings and the current yield to worst on bonds.

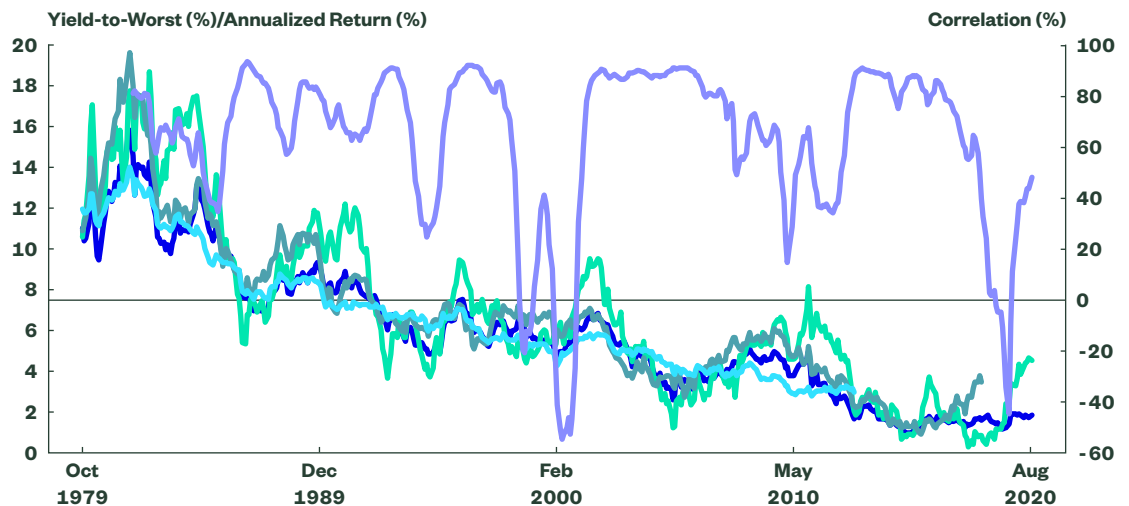
For bonds, there is a strong relationship between the yield at the time of purchase and the subsequent returns. This makes sense, as the mathematics behind a bond’s yield equate to the expected cash flows from the coupon, as well as any price movement related to trading at a premium (negative return expectation as the bond moves closer to maturity at par) or a discount (positive return expectation as the bond moves closer to maturity at par).

Extending the time horizon only magnifies this relationship. For instance, on a three-year subsequent return basis, the straight-line correlation to the yield at time of purchase for the Bloomberg Barclays U.S. Aggregate Bond Index (Agg) is 93%, with the five-and-10-year figures at 98%.⁶ Figure 2 shows a persistent trend between yield and future returns. As yields move lower, so do the subsequent future returns. However, when viewing the correlation between yield and rolling returns on a similar rolling basis, there can be brief periods of decoupling — even if the long-term average is over 90%.

The sizable reduction in today’s interest rates has led to noticeable duration-induced price appreciation, with this historical relationship decoupling. Yet, this price appreciation only serves to dampen potential future returns, as the correlation may mean revert — as it has done after prior rolling correlation decouplings during other severe risk events (dot-com and Global Financial Crisis). And we are already seeing the relationship start to mean revert.

Figure 2
Agg Yield vs. Subsequent Returns

- Yield to Worst
- Subsequent 3-Year Return
- Subsequent 5-Year Return
- Subsequent 10-Year Return
- Rolling 3-Year Correlation of Yield to Worst and 3-Year Return



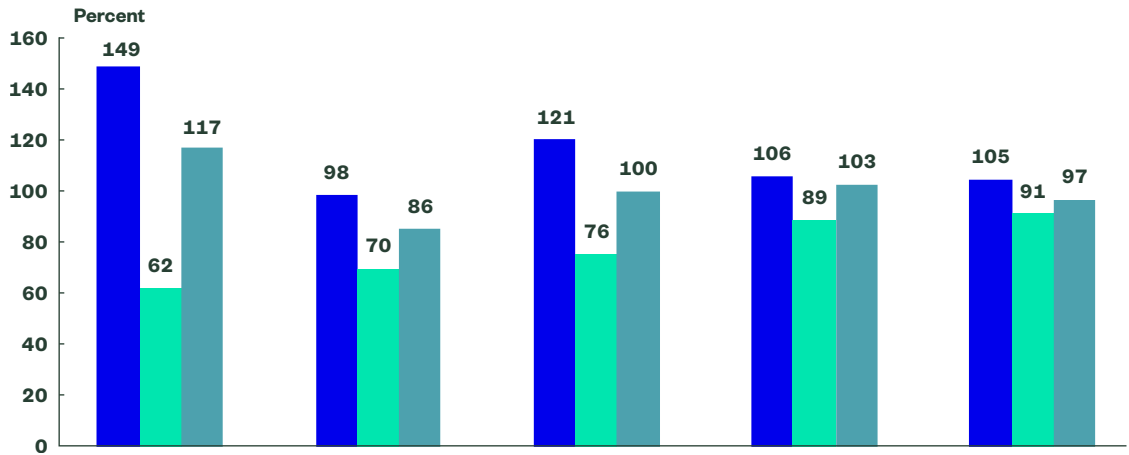
Source: Bloomberg Finance L.P., as of September 30, 2020. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not contain fees. The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean, with 0 being uncorrelated and 1 being perfectly correlated.

The above core aggregate bonds relationship also holds for other debt exposures. In the short term, tactical moves can occur that lead to price appreciation (or depreciation) and can comprise a large portion of total return. However, once the time horizon is expanded, the return generation depends more on the coupon for any debt exposure. Figure 3 illustrates the return generation attribution for investment-grade credit, high yield, and emerging market (EM) debt over various time horizons.

As the 60/40 portfolio is not a trading strategy, but a strategic asset allocation, a long-term time horizon for evaluating asset classes is important and appropriate — and it clearly shows coupons matter for future returns. As shown, for higher-income-producing segments like EM debt and high yield, the coupon represents over 100% of the return in most areas. Meanwhile, for IG corporates, the coupon return contribution climbs in a stepwise fashion as the horizon extends — illustrating the importance of a debt instrument’s coupon for long-term returns.

Figure 3
**Percent of Total
 Return from Coupon**

■ High Yield
 ■ IG Corporate
 ■ EM Debt



Source: Barclays as of September 30, 2020. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not contain fees. High yield: Bloomberg Barclays U.S. High Yield Index, IG Corporate: Bloomberg Barclays U.S. Corporate Bond Index, EM Debt: Bloomberg Barclays EM USD Aggregate Bond Index.

The current yield environment hit a record low in 2020 for core bond sectors, and it currently sits at 1.18%.⁷ Based on that relationship, investors could, therefore, expect a similarly low annualized return (i.e., around 1%) from core bonds over the next three to five years. Yet, the low return is not being met by lower risk. The duration of the exposure is six years,⁸ a problematic profile if rates do eventually rise. A modest 50-basis-points rise in the Agg’s yield would still result in a theoretical 1.42% capital loss, as the yield today is far too low to offset any impact duration has on price.⁹ The risk/return profile is asymmetrical, and that is an issue for an exposure that is meant to comprise a large part of an investor’s portfolio.

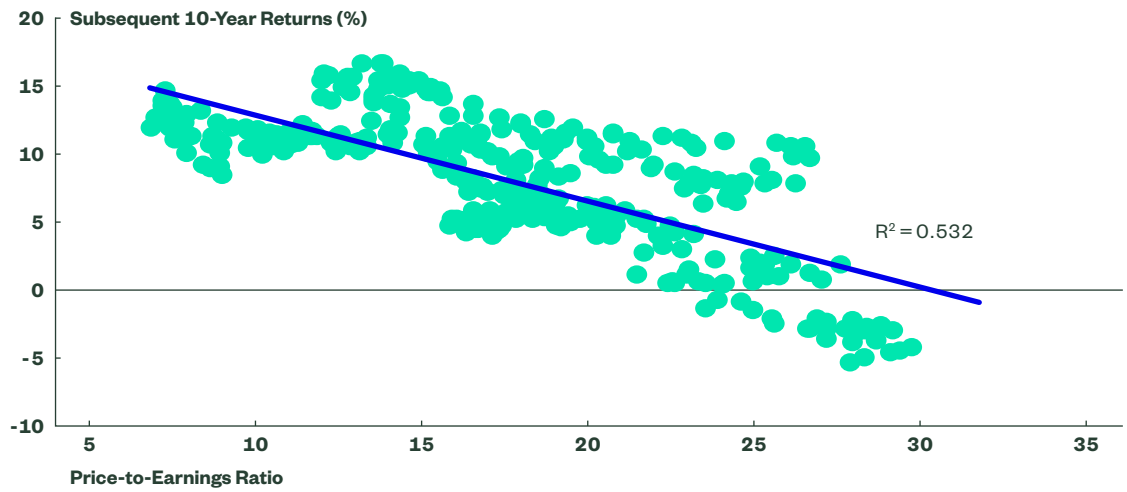
For stocks, a similar historical decomposition of price-to-earnings and subsequent returns suggests a path that may lie ahead. As of right now, the price-to-earnings ratio for the S&P 500 Index is 25.99 — a figure that is in the 96th percentile historically.¹⁰ Other metrics are equally as stretched, including price-to-book (89th percentile),¹¹ price-to-sales (99th percentile),¹² Enterprise Value-to-EBITDA (99th percentile)¹³ and price-to-next-12-month-earnings (98th percentile).¹⁴

Given its longer history, data for the S&P 500 Index was used as a proxy for reviewing fundamental trends of the equity allocation, as opposed to the more global MSCI ACWI Index (ACWI). This is a fair proxy, as US equities comprise over 50% of the global market,¹⁵ elevating the ACWI’s current price-to-earnings ratio to the 89th percentile relative to its own 25-year history.¹⁶

Using just price-to-earnings (P/E) for the S&P 500, and a point time period P/E versus the subsequent 10 years’ returns, with monthly granularity producing 648 data points, has shown a strong historical relationship since 1956. The rationale has been discussed in many academic papers, but simplified in Campbell, Shiller’s “Valuation Ratios and the Long-Run Stock Market Outlook.” They write, “It seems reasonable to believe that prices are not likely ever to drift too far from their normal relationships to indicators of fundamental value, such as dividends or earnings. Thus, one might expect that when stock prices are very high relative to indicators, prices will fall in the future to bring the ratios back to more normal historical levels.”

While there can be short-term market gains even when P/Es are elevated as a result of market exuberance to stimulative policies or the expectation of future near-term growth, the longer-term relationship has been consistent. As shown in Figure 4, the higher the P/E, the lower the subsequent returns.

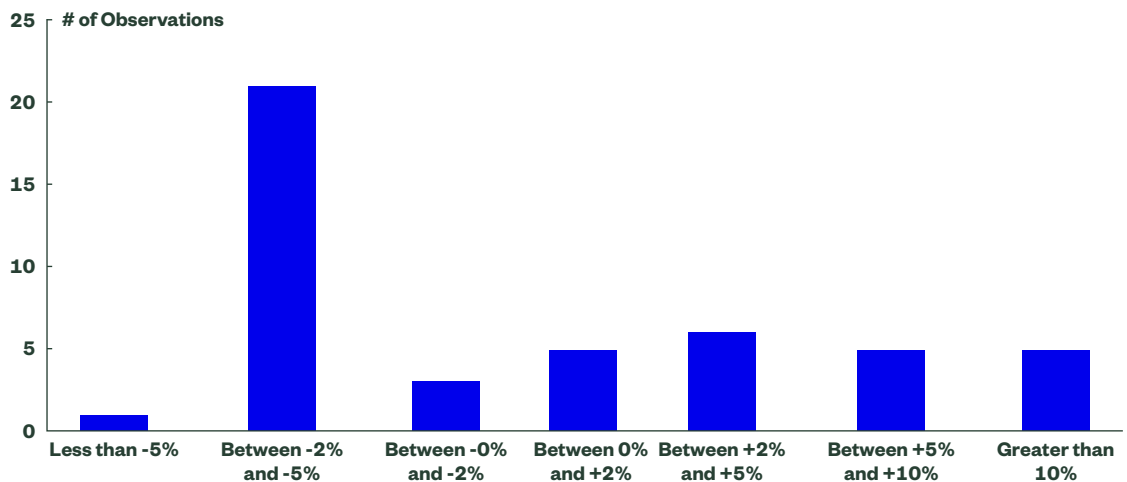
Figure 4
S&P 500 P/E vs. Subsequent 10-Year Returns



Source: Bloomberg Finance L.P., as of September 30, 2020. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not contain fees.

Given where we are now in terms of valuations (the S&P 500 is trading 25.99x earnings), there is a higher likelihood of low returns over the next decade. Historically, a P/E above 25 has occurred 46 times from 1956 to 2010. The distribution of returns is shown in Figure 5, and in 36 (78%) of the observations, returns were below 5%, while 54% were, in fact, negative. As a result, if 5% is the best probable return, that equates to a just 3% return from the stock allocation of the 60/40 portfolio — meaning bonds need to return 11.25% over a 10-year period just to reach the long-term median 10-year rolling return (7.7%) of the 60/40 portfolio. Core aggregate bonds haven't had a 10-year annualized return greater than 11% since the early 1990s, when interest rates were over 9%. And given today's 1.18% yield and the historical relationship between yields and future returns — as discussed earlier — a 11.25% return from bonds is unlikely.

Figure 5
S&P 500 Distribution of Rolling 10-Year Annualized Returns when P/E > 25



Source: Bloomberg Finance L.P., as of September 30, 2020. **Past performance is not a guarantee of future results.** Index returns are unmanaged and do not contain fees.

Now, there were instances of double-digit returns for stocks with a P/E over 25. Yet, that occurred in just five of the 46 observations (10%). And those five were clustered around the same starting point (1992), indicating limited persistency throughout history. Overall, the distribution is decidedly skewed. As a result, based on today's P/E, the probability for low single-digit or negative future returns is higher than the probability of 5% or 10% plus future returns over the next decade.

Rethinking the Core

Rethinking the core does not mean drastically altering the asset allocation mix between stocks and bonds, as asset allocation has been shown to explain 90% of the variance of returns.¹⁷ And given that the 60/40 portfolio has generated approximately 91% of equities' return but with 64% less volatility, the mix of traditional asset class exposures is valuable. However, with low expected returns from those traditional exposures, investors need to look elsewhere and consider other approaches and options *within* those asset class segments.

Today, there are four key methods to consider:

1. Target active management in areas where there is a strong track record of above-benchmark performance.
2. Expand market coverage within the ACWI and Agg to seek out underrepresented areas or create a different risk/return profile.
3. Structure portfolios based on factors that have historically earned a premium, and be patient and trust the process.
4. Increase exposure to noncorrelated strategies to help navigate market uncertainty and provide a differentiated return path than the one just stocks and bonds would provide.

While these four measures may help in terms of return generation, they also will likely impact one of the key drivers of performance: fees and taxes. All else being equal, low-fee, tax-efficient strategies allow investors to take home more of an asset class' return than do high-fee, tax-inefficient strategies. Therefore, a broad representation of traditional beta exposures is needed to perform three distinct functions:

1. Cover asset classes (e.g., US large-cap equities).
2. Reduce the portfolio's overall fee budget (i.e., indexed equity and fixed income ETF average fee is 0.41% versus 0.89% for active mutual funds of the same category, with some indexed products covering broad exposures as low as just 0.03%)¹⁸
3. Improve tax efficiency for the overall portfolio to positively impact after-tax returns (i.e., 3.2% indexed equity and fixed income ETFs paid cap gains in 2019, versus 44.5% of active mutual funds in the same category).¹⁹

Making the Active Decision

Understanding where to use low-cost indexed-based solutions requires understanding where not to use higher-priced active strategies. Analyzing performance, fee, and capital gains trends over the past 10 years may provide insights as to where there is a decent probability that active management can offer above-benchmark returns that are worth the impact to fees and tax inefficiency. However, this is in the aggregate, and the need to understand a manager's strategy and their individual propensity to outperform is required.

In order to understand from a top-down perspective which market segments are more appropriate for active strategies, we analyzed by category:

- Average annual percent of funds that paid a capital gain over the past 10 years.
- Average percent of funds that underperformed their prospectus benchmark, and the magnitude of underperformance, based on rolling one-year windows (monthly granularity) over the past 10 years to mitigate cyclicity or time dependency (i.e., start and end dates) that a straight line 10-year lookback would have.
- The current average fee charged by the fund.

In this analysis, as shown in the following heat map, strategies focused on US equities have typically had the weakest performance record (all below 50%, on average, with average negative excess returns), while having a high percentage of funds paying capital gains (all above 60%). Meanwhile the average fee charged in the mid- and small-cap space is over 1%, and the 0.89% for large-cap strategies is not enticing enough to offset the weak performance and high capital gains. All this suggests that it would be best not to implement active strategies for US equities.

Figure 6
10-Year Average Performance and Cost Figures for Equities

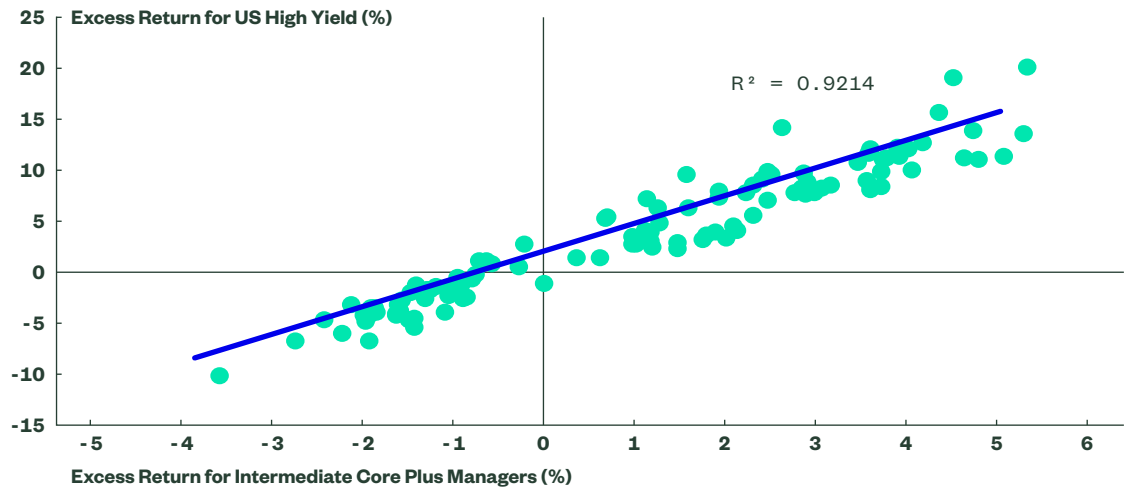
Category	Average Excess Return (%)	Average Percent of Funds Outperforming (%)	Average Percent of Funds with Cap Gains (%)	Current Average Fee (%)
US Large Cap	-1.43	35.69	62.25	0.89
US Mid Cap	-1.63	37.60	66.38	1.01
US Small Cap	-0.67	45.57	65.48	1.09
International Developed Large Caps	0.09	49.80	29.82	0.90
EM Equity	-0.16	48.43	60.90	1.11

Source: Morningstar as of December 31, 2019 based on data from January 2010 to December 2019. Shading indicates best-and-worst per each category. Red shading indicates worst metric, green shading indicates best metric.

For outside the US, international developed ex-US strategies have low capital gains rates and strong performance trends. To add potential returns to the standard 60/40 allocation employing active mandates overseas may be attractive for the cost incurred. For emerging markets (EM), the data is less conclusive. Capital gains rates and fees are high. However, the performance trends are moderately constructive. Depending on how the rest of the portfolio is being structured — and the amount of surplus left over in the fee budget — using active within EM could be a consideration. Another alternative might be a lower-cost systematic factor strategy seeking the same return premia.

For fixed income, the active decision is a bit more nuanced. For instance, core-plus strategies have historically been able to outperform their benchmark — the Agg is the common index used — by taking on elevated credit risk. This is evidenced by the average fund's excess return within the intermediate core-plus relative to the Agg having a 95% correlation to high yield bonds' excess return to the Agg, based on rolling one-year periods, as shown in Figure 7.²⁰ As a result, those strategies may exhibit an implicit equity bias and, therefore, may not be able to truly offer the necessary diversification to the equity side of the portfolio. Therefore, even though the performance trends are supportive, an allocation to an active core-plus manager cannot be made in isolation when adding in other income-producing fixed income allocations.

Figure 7
Excess Return
Correlation: Average
Intermediate Core
Plus Manager vs.
High Yield Bonds



Source: Bloomberg Finance L.P., Morningstar, calculations by SPDR Americas as of December 2019. **Past performance is not a guarantee of future results.** The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean, with 0 being uncorrelated and 1 being perfectly correlated.

Active intermediate core strategies, however, have less of an equity bias. By definition, they can have only 5% of the portfolio outside of investment grade. Yet, the performance trends within that category are equally as strong. Therefore, within fixed income, active core strategies may be more attractive to get more return from a bond portfolio without sacrificing significantly on diversification. However, with a historical track record of capital gains and high fees, pairing it with a low-cost indexed exposure is ideal. Maturity-focused exposures are mainly ultra-short or short-term strategies²¹ and appear suitable for active mandates, given their strong performance trends and relatively low fees compared with those of other strategies. Not to mention that, in our current environment, traditional cash-like exposures like short-term Treasuries (0.12% yield for the one-year T-bill rate²²) do not provide sufficient yield, so an active alternative may be optimal.

Figure 8
10-Year Average
Performance and
Cost Figures for
Fixed Income

10 Year Average Performance and Cost Figures	Average Excess Return (%)	Average Percent of Funds Outperforming (%)	Average Percent of Funds with Cap Gains (%)	Average Fee (%)
Multisector & Intermediate Core-Plus	0.86	60.23	43.61	0.64
Intermediate Core	0.00	49.84	45.16	0.64
US Government	-0.45	29.88	32.93	0.65
Munis	-0.11	39.61	34.29	0.56
Maturity Focused	0.32	61.34	28.97	0.52
Investment-Grade Corporate Bonds	0.35	55.83	46.87	0.54
High Yield Corporate Bonds	-0.64	35.09	29.23	0.87
Senior Loans	-0.33	32.90	20.40	0.86
EM Debt	-0.95	37.74	31.4	0.86

Source: Morningstar as of December 31, 2019 based on data from January 2010 to December 2019. Shading indicates best and worst per each category. Red shading indicates worst metric, green shading indicates best metric.

Outside of the core, in areas such as high yield and emerging market debt, the active debate is less supportive. For those segments, lower-fee beta exposure can still obtain the yield — a big driver of returns, as shown earlier — and not adversely impact the overall portfolio's fee profile. Senior loans warrant closer analysis, however.

When viewing the above performance profile versus an index tracking product that has to deal with trading costs, sampling risk, and fees — factors an index itself does not have to deal with — the results change. Over the past seven years, roughly 70% of active loan managers have outperformed an index-based ETF when viewed on rolling one-year periods,²³ underscoring some of the inefficiencies and illiquidity of this esoteric market that active managers seek to exploit from a credit selection and trading perspective. Similar analysis for high yield²⁴ and EM debt²⁵ still, however, show a majority of managers underperforming an indexed strategy, given that some indexed products carry fees of just 15 or 25 basis points.

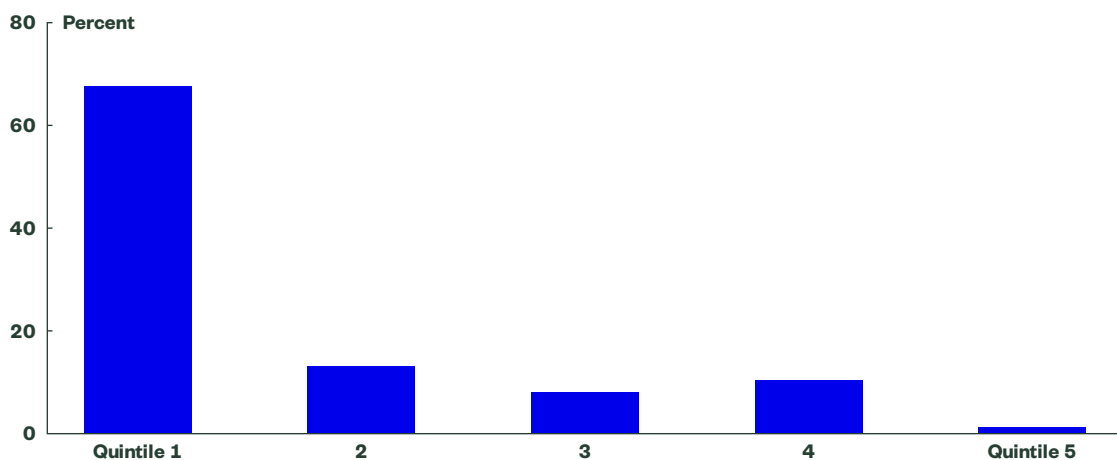
Portfolio Adjustment Considerations

Use active mandates in overseas equity exposures, while allocating to the US via indexed-based products. For fixed income, pair active core with a traditional indexed exposure to potentially increase returns while managing fees. If using core-plus, ensure that it is not just surrounded by pure credit instruments, as diversification may become an issue. Meanwhile, consider active senior loan strategies as a potential path to generating income that may be able to maneuver liquidity and trading challenges in an inefficient market in a way that an indexed exposure cannot.

Expanding a Portfolio's Reach

Once some of the remodeled 60/40 goes active, indexed exposures can be further refined. Within equities, this means expanding a portfolio's reach overseas. Many portfolios have a specific US small-cap position, but not one for international or emerging markets. This is a commonly overlooked part of the portfolio and is not represented in traditional exposures. As shown in Figure 9, the market-cap quintile breakdown of the MSCI ACWI Ex-US Index reveals that quintile five — anything with a market capitalization less than \$3 billion — makes up less than 1% of the exposure. As a result, small stocks contribute little to return — and that can be a problem.

Figure 9
Percent of MSCI
ACWI Ex-US Index



Source: FactSet as of September 30, 2020. Characteristics as of the date indicated and are subject to change.

Non-US smaller capitalization stocks have outperformed the larger stocks since 2001. The risk and return profile for both international and emerging market small-cap exposures are shown in Figure 10, and over the past 19 years, both have had stronger absolute and risk-adjusted returns than their larger counterparts. The correlation to US equities is also lower than that of the larger international stocks, albeit not significantly so. As a result, a small-cap foreign allocation to an already broadly diversified global exposure could be additive in the goal of seeking to improve the returns of the 60/40 portfolio.

Figure 10
**Risk/Return of
Non-US Small Cap**

	Annualized Return (%)	Sharpe Ratio	Correlation to S&P 500
International Developed Ex-US Large Cap	4 . 38	0 . 18	0 . 88
International Developed Ex-US Small Cap	7 . 98	0 . 36	0 . 81
EM Large Cap	8 . 66	0 . 34	0 . 77
EM Small Cap	8 . 98	0 . 35	0.74

Source: FactSet as of September 30, 2020. International Developed Ex-US Large Cap: MSCI EAFE Index, International Developed Ex-US Small Cap: MSCI EAFE Small Cap Index, EM Large Cap: MSCI Emerging Markets Index, EM Small Cap: MSCI Emerging Markets Small Cap Index. The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean, with 0 being uncorrelated and 1 being perfectly correlated. **Past performance is not a guarantee of future results.**

Another implementation tactic for equities may be to focus on strategies seeking to provide exposures to innovative firms not well represented within traditional market-cap weighted frameworks. And when performing a stock look through on US-listed thematic ETFs focused on broad-based innovation, per our classification structure, only 44% of the stocks owned are also in the S&P 500.²⁶ Core strategies, therefore, miss out on more than half of the “innovative” firms that also may offer growth potential, given that the stocks in the thematic ETF portfolio have an average consensus analyst 3–5 year earnings-per-share growth estimate of 22% versus just 11% for S&P 500 firms.²⁷

Now, thematic investing has often been viewed under a more tactical light. However, the COVID-19 pandemic has created a new trend line for our society. Longer term, second derivative — or butterfly — effects of the pandemic have the potential to materially change technological, medical, social, manufacturing, policy and geopolitical trends. Not just for this generation, but for generations to come. As a result, seemingly tactical tools may now offer strategic long-term growth opportunities.

Similar to the idea of expanding the traditional asset allocation mix to include international and emerging market small-cap exposures, investors may want to also consider expanding allocations also into thematic strategies offering more precise exposure to firms at the forefront of the innovation impacting a variety of industries throughout our new economy.

For fixed income, the traditional core allocation of the Bloomberg Barclays U.S. Aggregate Bond Index suffers from a low yield and extended duration — as discussed earlier. Yet, its potential use case as a diversifier to equities remains.²⁸ In the earlier section regarding active, it was suggested to pair an indexed allocation with an active core mandate to monitor the fee budget. However, Agg-tracking vehicles suffer the same fate as the index and may not be suitable.

Over the past few years, as indexed-based ETFs have grown in popularity, more products have come to market. Many of these allow an investor to customize an Agg-based exposure by disaggregating the components of the Agg and rebuilding it in a tailored fashion. For example, investors can optimize the weighting of core Agg sectors to maximize the yield per unit of duration, while imposing risk constraints to keep the credit exposure within a specific risk tolerance.

This bespoke approach can allow investors to meet their objectives, including equity portfolio diversification, with more precision while staying within the traditional exposures of the Agg. By using targeted exposures to delineate between short-, intermediate- and long-duration exposures within the corporate and Treasury sleeves, an investor can adjust the balance between the three to target the most appropriate possible exposure given portfolio constraints.

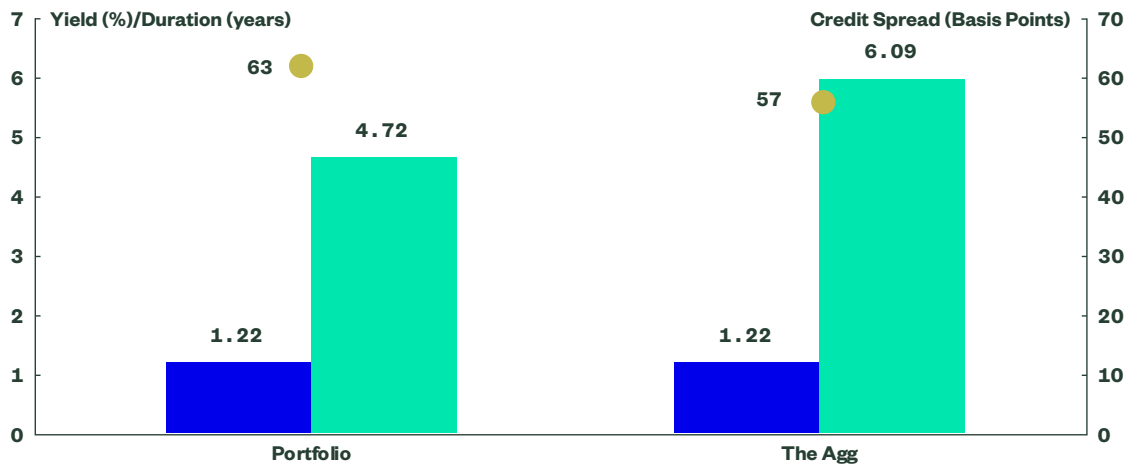
Figure 11 illustrates how the Agg sector weights are adjusted to optimize yield per unit of duration, while still complying with risk constraints:

- Agg sector weight cannot exceed 40% or be less than 20%
- Each duration bucket weight must be between 3% and 30%
- Similar yield, but with a portfolio option-adjusted spread that cannot exceed the Agg by 20%

With 22% less duration but no reduction in yield, this allocation improves the risk/return tradeoff afforded by the Agg by 30% (0.26 versus 0.20 yield per unit of duration). And by staying aligned to its heritage sector exposure, it does not meaningfully increase spread risk.

Figure 11
Optimized Portfolio vs. the Agg

■ Yield to Worst
■ Duration
■ Credit Spread



Source: Bloomberg Finance L.P., as of September 30, 2020. Characteristics as of the date indicated and are subject to change.

Figure 12
Portfolio Weights (%)

Treasuries	Short Term	9.5
	Intermediate	3.0
	Long Term	7.5
Corporates	Short Term	7.0
	Intermediate	30.0
	Long Term	3.0
Mortgages		40.0

Portfolio Adjustment Considerations

Ensure proper market-cap coverage by expanding into small-cap overseas as well as into thematic strategies that contain innovative firms not well represented in the core while restructuring core bonds in a low-cost manner, with more precise control over yield and duration.

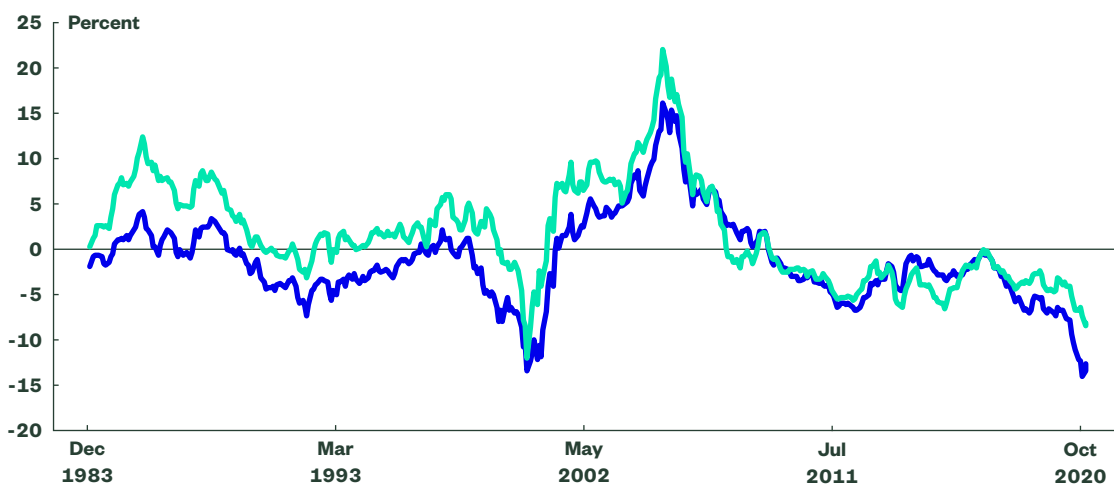
Analyzing Factor Specifics

It has been well documented in academic circles that stocks featuring specific investment traits have shown the ability to outperform the broader market and earn a premium over traditional beta. The style exposures — also known as factors — commonly associated with this type of investing are Size, Value, Quality, Momentum, and Low Volatility. Constructing an exposure focused on stocks with these specific traits has historically earned a premium over the market, as reported in the academic literature over the years.²⁹

There are a few caveats to this, however. There have been — and will be — periods of short-term underperformance, as factor returns can be impacted by the market cycle. Value strategies, for instance, have been in a long stretch of recent underperformance as a result of the focus on mega-cap growth exposures (i.e., glamour stocks) — among other variables (e.g., yield curve shape). Figure 13 illustrates the return spread difference between both large- and small-cap value and growth strategies.

Figure 13
**Rolling 5-Year
Annualized
Excess Return
Value to Growth**

■ Large-Cap Value
to Growth
■ Small-Cap Value
to Growth



Source: Bloomberg Finance L.P., as of September 30, 2020. Large Cap Value: Russell 1000 Value Index, Large Cap Growth: Russell 1000 Growth Index, Small Cap Value: Russell 2000 Value Index, Small Cap Growth: Russell 2000 Growth Index.

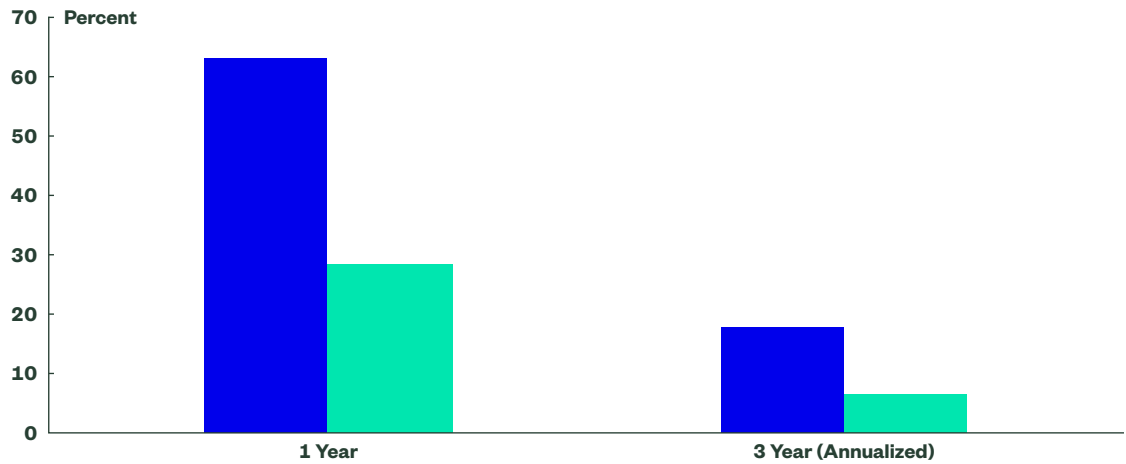
Secondarily — and complicating the strategy selection process — many factor strategy construction methodologies are not the same as those found within the academic literature upon which the factor foundations were built (i.e., long/short versus long-only). Additionally, even among factor products, there are different ways an exposure can be created. Construction choices — such as factor descriptors (price-to-book versus price-to-earnings), sector constraints, and rebalancing — can have significant impact on factor performance trends, and they should be acknowledged when making comparisons or using factor-based products.

For those who believe in the longer-term premia, patience is a virtue. It is also important to understand that the academic work that has identified these investment behaviors was conducted over a long time frame and that today's implementation tools have different construction approaches.

One way to mitigate the cyclicalities is to use multifactor funds to harness these premia. Here, too, the construction methodologies are important. As shown in Figure 14, the dispersion among multifactor ETFs has been wide over the past one and three years for both US and non-US markets — with the past year noticeably elevated, given 2020's idiosyncratic return environment. Depending upon the factor construction, breadth of market coverage, and the individual investor beliefs, a multifactor fund can be used as a replacement of a core holding or a cheaper version of an active mandate that is used to seek above-market returns.

Figure 14
**Return Dispersion
Among Multifactor
Strategies**

■ US Multifactor
■ Intl. — Developed
Multifactor



Source: Bloomberg Finance L.P., based on SPDR Americas Research calculations as of September 30, 2020. Only large-cap or broad market multifactor strategies were analyzed. There were 51 funds within the US multifactor category, and 14 within international developed.

One last area of consideration with respect to factor investing is to employ a factor-based framework to indexed-based products. Namely, by constructing sector rotation portfolios that leverage Momentum or Value factors and thereby seek to harness potentially elevated levels of dispersion while having to monitor only 11 market segments (e.g., just the 11 GICS sectors).³⁰ Academic literature also supports this approach, as documented in *US Sector Rotation With Five-Factor Fama-French Alphas* by Sarwar, Mateus, and Todorvic. Having a sector rotation portfolio as part of a portfolio’s US allocation may be one way to seek more from the core.

Portfolio Adjustment Considerations

Examine multifactor-based portfolios to replace certain core equity assets, as well as the potential use of sector rotation portfolios within a US allocation.

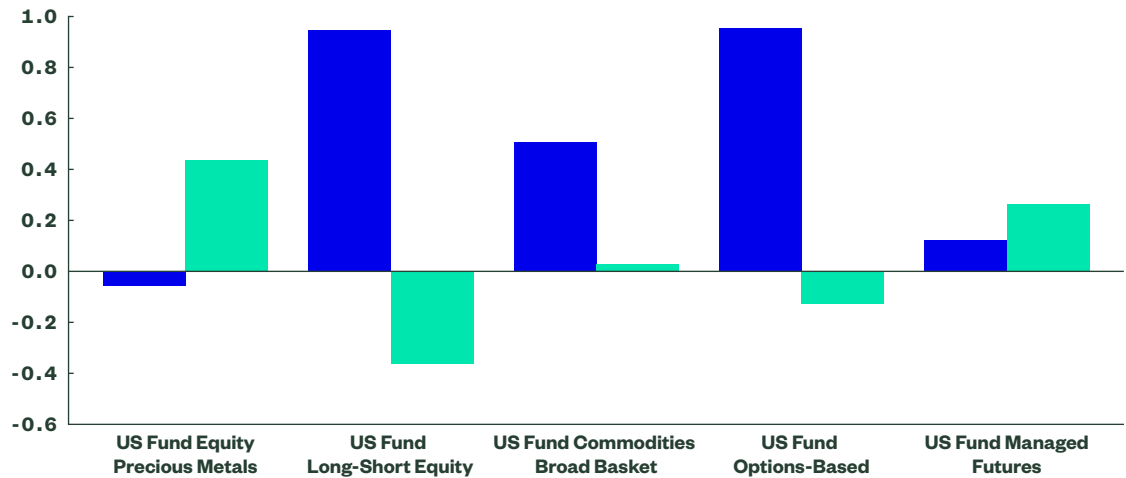
Thinking About Alternatives

With this next decade starting off in a high-risk regime, and the importance of diversification to mitigate what may lie ahead, seeking out noncorrelated strategies may be one way to bolster a portfolio’s defense. These exposures can be as traditional as gold, commodities, and other real assets. Or investors can venture into the more esoteric strategies, such as options-based or managed futures mandates.

The potential benefit of an alternative strategy can be examined by analyzing the correlation of the funds within the Alternative Morningstar category return versus traditional stocks and bonds. The correlation of the average return of these funds to stocks is 0.63, and to bonds is 0.10 on rolling one-year basis viewed over the past 10 years.³¹ Given that this is the average, the correlation structures at the individual fund level can vary and be more or less correlated. For instance, when using the median return — and therefore accounting for outliers — the correlations change to 0.76 and -0.06, respectively. When dissecting the individual categories themselves, differing return correlation profiles emerge, as shown in Figure 15.

Figure 15
Return Correlation of Alternative Category Median Fund Return to Stocks and Bonds

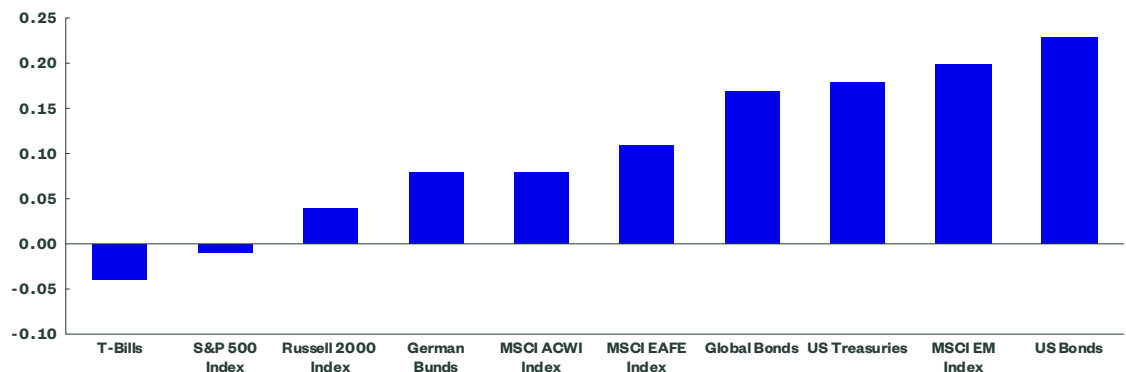
■ Correlation to S&P 500 Index
 ■ Correlation to Bloomberg Barclays U.S. Aggregate Bond Index



Source: Morningstar as of December 2019, based on the median rolling one-year return for the Alternative Category of funds relative to the rolling one-year return for the S&P 500 Index and the Bloomberg Barclays U.S. Aggregate Bond Index. The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean, with 0 being uncorrelated and 1 being perfectly correlated. **Past performance is not a guarantee of future results.**

While some funds may be lowly correlated, the performance metrics are not overly strong — as only 30% of alternative managers, on average, have outperformed their listed benchmark over the past 10 years.³² In addition, some of these strategies are high fee and not tax efficient; 40% of the funds paid capital gains, on average, over the past 10 years and carry a fee of 1.60%. However, not all alternative strategies carry this distinction. Gold-backed ETFs have expense ratios as low as 18 basis points, and their unique regulatory structure means they do not pay out capital gains. And as Figure 16 illustrates, gold has historically exhibited low correlations to both stocks and bonds.

Figure 16
30-Year Historical Correlation to Gold Spot Price



Source: Bloomberg Finance, L.P., State Street Global Advisors. Data ending June 30, 2020. Gold correlation calculation based on monthly data. US Bonds = Bloomberg Barclays U.S. Aggregate Index, T-Bills: ICE BofAML US 3-Month Treasury Bill Index, US Treasuries: ICE BofAML US Treasury Index, Global Bonds = Bloomberg Barclays Global-Aggregate Total Return Index Value Hedged USD, German Bunds: ICE BofAML German Government Index, The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean, with 0 being uncorrelated and 1 being perfectly correlated. **Past performance is not a guarantee of future results.**

Think about paring back some of both the stock and bond allocations in the 60/40 portfolio and replacing them with an alternative strategy as a potential source of diversification — with the weight depending on investment-specific constraints and criteria.

Allocating the Core and Satellites

A rough sketch based on the above discussion would result in a portfolio with a decent portion still allocated to traditional low-fee indexed-based vehicles aimed at covering the broad-based asset class exposures to try to keep costs and taxes low. The rest would be allocated to either active, alternative, or factor-based strategies as way to seek above-market returns. This potential allocation is illustrated below:

Figure 17
Potential Portfolio Allocation

US Equities	Low-cost Core
	Smart Beta
	Thematics
	Sector Rotation
Int'l — Developed/EM	Active
	Smart Beta
	Small-Cap Exposures
Bonds	Active Core
	Tailored Indexed Core
	High Yield and EM Debt Indexed
	Active Senior Loans
	Active Ultra-short
Alternatives	Gold
	Other Alternatives

SPDR Americas Research as of September 30, 2020. For illustrative purposes only.

The pandemic's broad hold on society includes asset allocation profiles. Given our new reality, the standard 60/40 portfolio needs to be tailored — both in the core and outside of it — if return targets are to be met over the next decade.

Endnotes

- 1 As defined by the MSCI ACWI Index and Bloomberg Barclays U.S. Aggregate Bond Index “the Agg” unless otherwise noted.
- 2 Bloomberg Finance L.P., as of September 30, 2020 based on SPDR Americas Research calculations.
- 3 Bloomberg Finance L.P., as of September 30, 2020 based on SPDR Americas Research calculations.
- 4 Bloomberg Finance L.P., as of September 30, 2020, based on SPDR Americas Research calculations.
- 5 Bloomberg Finance L.P., as of September 30, 2020 based on S&P 500 Index return data.
- 6 Bloomberg Finance L.P., as of September 30, 2020, calculations by SPDR Americas Research by calculating the long-term correlation of the yield and return streams for a specific period.
- 7 Bloomberg Finance L.P., as of September 30, 2020 based on the yield-to-worst for the Bloomberg Barclays U.S. Aggregate Bond Index.
- 8 Bloomberg Finance L.P., as of September 30, 2020 based on the option adjust duration for the Bloomberg Barclays U.S. Aggregate Bond Index.
- 9 The return is based on the rates change (50 basis points) multiplied by the duration (6 years), plus the assumed return for a year given the higher rate (1.58%). $(-0.50\% * 6) + 1.58\% = -1.42\%$.
- 10 Based on S&P 500 Index price-to-earnings ratios from 1954–2020, based on monthly granularity per data from Bloomberg Finance L.P., as of September 30, 2020.
- 11 Based on S&P 500 Index price-to-book ratios from 1990–2020, based on monthly granularity per data from Bloomberg Finance L.P., as of September 30, 2020.
- 12 Based on S&P 500 Index price-to-sales ratios from 1990–2020, based on monthly granularity per data from Bloomberg Finance L.P., as of September 30, 2020.
- 13 Based on S&P 500 Index Enterprise Value-to-EBITDA ratios from 1990–2020, based on monthly granularity per data from Bloomberg Finance L.P., as of September 30, 2020.
- 14 Based on S&P 500 Index price-to-next-twelve-month-earnings ratios from 1990–2020, based on monthly granularity per data from Bloomberg Finance L.P., as of September 30, 2020.
- 15 Bloomberg Finance L.P., as of September 30, 2020 US stocks comprise 56% of the index exposure.
- 16 Based on the MSCI ACWI index price-to-earnings ratios from 1995–2020, based on monthly granularity per data from Bloomberg Finance L.P., as of September 30, 2020.
- 17 Gary P. Brinson, Brian D. Singer, and Gilbert L. Beebower, Determinants of Portfolio Performance II: An Update, The Financial Analysts Journal, 47, 3 (1991).
- 18 Morningstar as of September 30, 2020.
- 19 Morningstar as of September 30, 2020.
- 20 Bloomberg Finance L.P., as of December 2019, based on the average funds return within the category relative to the average Bloomberg Barclays U.S. Aggregate Bond Index rolling one year return (monthly granularity) and the Bloomberg Barclays U.S. Corporate High Yield Bond Index rolling one year return (monthly granularity) relative to the Bloomberg Barclays U.S. Aggregate Bond Index from January 2010 to December 2019.
- 21 94% of the category is within Ultra-Short or Short-Term Bond funds.
- 22 Bloomberg Finance L.P., as of September 30, 2020.
- 23 Morningstar as of December 2019 based on rolling one-year returns (monthly granularity) for active managers in the Senior Loan category versus the largest indexed based tracking ETF from April 2013 to December 2019.
- 24 Morningstar as of December 2019 based on rolling one-year returns (monthly granularity) for active managers in the High Yield Bond category versus the lowest cost High Yield Bond ETF from January 2017 to December 2019.
- 25 Morningstar as of December 2019 based on rolling one-year returns (monthly granularity) for active managers in the EM Local Currency category versus the lowest cost EM Local Currency ETF from December 2011 to December 2019.
- 26 As of October 29, 2020. SPDR Americas Research based on 14 funds classified as Broad Innovation under the SPDR Americas Research thematic classification framework as described in <https://ssga.com/us/en/institutional/etfs/insights/classifying-nextgen-opportunities-in-etfs>.
- 27 As of October 30, 2020 based on consensus analyst estimates per Bloomberg Finance L.P.
- 28 The Agg correlation to S&P 500 stocks over the last 30 years is 0.06 per Bloomberg Finance L.P., as of September 30, 2020 based on monthly granularity.
- 29 “A Five-Factor Asset Pricing Model”, Eugene F. Fama and Kenneth R. French, September 2014; “Momentum”, Narasimhan Jegadeesh and Sheridan Titman, August 2011; “Betting Against Beta”, Andrea Frazzini and Lasse Heje Pedersen, May 2013; “Quality Minus Junk”, Clifford Asness, Andrea Frazzini, and Lasse H. Pedersen, October 2013.
- 30 Morningstar as of December 2019, based on the average rolling one year return for the Alternative Category of funds relative to the rolling one year return for the S&P 500 Index and the Bloomberg Barclays U.S. Aggregate Bond Index.
- 31 Morningstar as of December 2019, based on the average rolling one year return for the Alternative Category of funds relative to the rolling one year return for the S&P 500 Index and the Bloomberg Barclays U.S. Aggregate Bond Index.
- 32 Morningstar as of December 2019 based on the average outperformance of managers of rolling one-year windows (monthly granularity) from January 2010 to December 2019. Based on the combined category figures for Equity Precious Metals, Long/Short Equity, Commodities Broad, Options-Based, and Managed Futures categories, calculations by SPDR Americas Research.

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Glossary

Aggregate An index used by bond funds as a benchmark to measure their relative performance. The index includes government securities, mortgage-backed securities, asset-backed securities and corporate securities to simulate the universe of bonds in the market.

Basis point One hundredth of one percent, used chiefly in expressing differences of interest rates and other percentages in finance.

Bloomberg Barclays U.S. Aggregate Bond Index Broadly considered as the total market bond index, the index includes government securities, mortgage-backed securities (MBS), asset-backed securities (ABS), and corporate securities to simulate the universe of bonds in the market. It functions in a similar manner for the bond market to what the S&P 500 index or Dow Jones Industrial Average (DJIA) does for the equity market.

Bloomberg Barclays Global-Aggregate Total Return Index Value Hedged USD A flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes Treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

Bloomberg Barclays U.S. High Yield Index Benchmark that measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below.

Bloomberg Barclays U.S. Corporate Bond Index A fixed-income benchmark that measures the investment-grade, fixed-rate, taxable corporate bond market. It includes

USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

Bloomberg Barclays EM USD Aggregate Bond Index A flagship hard currency Emerging Markets debt benchmark that includes USD-denominated debt from sovereign, quasi-sovereign, and corporate EM issuers.

ICE BofAML German Government Index Encompasses euro-denominated investment grade bonds issued by German entities, including sovereign, quasi-government, corporate, securitized and collateralized debt.

ICE BofAML US 3-Month Treasury Bill Index An unmanaged index that measures returns of three-month Treasury Bills.

Diversification A strategy of combining a broad mix of investments and asset class to potentially limit risk, although diversification does not guarantee protecting against a loss in falling markets.

Duration A commonly used measure, expressed in years, that measures the sensitivity of the price of a bond or a fixed-income portfolio to changes in interest rates or interest-rate expectations. The greater the duration, the greater the sensitivity to interest rates changes, and vice versa.

Price-to-Sales Share price divided by per share revenue.

Price-to-Earnings Share price divided by earnings per share. Lower numbers indicate an ability to access greater amounts of earnings per dollar invested. A higher number indicates that a company's stock is overvalued.

Price-to-Book Ratio, or P/B Ratio A valuation metric that compares a company's current share price against its book value, or the value of all its assets minus intangible assets

and liabilities. The P/B is a ratio of investor sentiment on the value of a stock to its actual value according to the Generally Accepted Accounting Principles (GAAP). A high P/B means either that investors have overvalued the company, or that its accountants have undervalued it.

MSCI ACWI Index (ACWI) A free-float weighted global equity index that includes companies in 23 emerging market countries and 23 developed market countries and is designed to be a proxy for most of the investable equities universe around the world.

MSCI ACWI Ex-US Index Captures large and mid-cap representation across 22 of 23 Developed Markets (DM) countries (excluding the US) and 26 Emerging Markets (EM) countries*.

MSCI EAFE Index A free-float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of developed markets, excluding the U.S. and Canada.

MSCI EAFE Small Cap Index Equity index which captures small cap representation across Developed Markets countries* around the world, excluding the US and Canada. With 2,315 constituents, the index covers approximately 14% of the free float adjusted market capitalization in each country.

MSCI Emerging Markets Index A free-float-adjusted market-capitalization-weighted index that is designed to measure large- and mid-cap equity market performance of emerging markets.

MSCI Emerging Markets Small Cap Index Includes small cap representation across 26 Emerging Markets. countries*. With 1,558 constituents, the index covers approximately 14% of the free float-adjusted market capitalization in each country.

Russell 1000 Growth Index Measures the performance of those Russell 1000 companies with higher price/book ratios and higher forecasted growth values. You cannot invest directly in an index.

Russell 1000 Value Index Measures the performance of those Russell 1000 companies with lower price/book ratios and lower forecasted growth values.

Russell 2000 Growth Index Measures the performance of those Russell 2000 companies with higher price/book ratios and higher forecasted growth values.

Russell 2000 Value Index Measures the performance of those Russell 2000 companies with lower price/book ratios and lower forecasted growth values.

S&P 500 Index A popular benchmark for U.S. large-cap equities that includes 500 companies from leading industries and captures approximately 80% coverage of available market capitalization.

Senior Loans Floating-rate debt issued by corporations and backed by collateral such as real estate or other assets.

Value Stocks Shares of a company with solid fundamentals that are priced below those of its peers, based on analysis of price/earnings ratio, yield, and other factors.

Volatility The tendency of a market index or security to jump around in price. In modern portfolio theory, securities with higher volatility are generally seen as riskier due to higher potential losses.

Yield Income returned on an investment, such as the interest received from holding a security. The yield is usually expressed as an annual percentage rate based on the investment's cost, current market value, or face value.

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