Decades of research into investment factors, combined with improvements in investment technologies, have led to a proliferation of alternative risk premia investment products. This proliferation has left investors with a significant challenge: How should they select risk premia for their investment programs and how should they bring these risk premia together? In this article we argue that much of the benefit of alternative risk premia can be accessed using a small but diversified selection of factors and asset classes. We also maintain that the low correlation between different risk premia makes a strong case for combining them into a single asset class, and we show risk parity to be a compelling approach to constructing this portfolio—a happy marriage of two investment concepts. We then explore the impact of integrating this new asset class into a traditional 60/40 portfolio, as well as a portfolio with hedge fund allocations.

Alternative risk premia represent return sources that compensate for bearing risks that are different from traditional investment risks. If you consider the return from a U.S. Treasury to be risk-free, the extra return you can get from investing in equities is the traditional equity risk premium. The extra return you can get for investing in a long-dated bond is the traditional term premium. The extra return you can get from investing in a corporate bond is the traditional credit risk premium.

By contrast, alternative risk premia are extracted, using long–short investment strategies, from factors such as value (securities with lower valuations tend to deliver higher long-term returns than those with higher valuations) and momentum (securities with prices that have gone up recently tend to continue going up, and vice versa); or by using systematic investment strategies such as selling put options while shorting the underlying asset (for the volatility risk premium), or selling an acquiring company while holding the target in an acquisition (for the merger risk premium).

These risk premia have been described over decades as academics and practitioners have researched systematic exceptions to the asset returns predicted by the capital asset pricing model that was put forward in the early 1960s. Beginning with the work of Fama and French (1992), there are now literally thousands of published research articles examining and positing dozens of potential factors that can generate risk premia.

What is new are the investment products that package these alternative risk premia. These investment products have launched in response to rapidly growing interest among institutional investors globally who recognize the appeal of their attractive return profiles and low correlation with traditional assets. This has been particularly true in recent years as returns from traditional alternative investments such as hedge funds have struggled to deliver attractive absolute, noncorrelated returns. The fact that alternative risk premia strategies tend to be simpler, more transparent, and often available with more-attractive fee structures than traditional alternatives has added to their appeal.

Selecting Alternative Risk Premia

The existence of so many investable alternative risk premia clearly creates a new selection challenge for investors. Ultimately, individual investors can decide which risk premia to introduce to their portfolios based on their investment beliefs, governance capacities, and the cost and complexity of the strategies required to extract the premia. However, we believe that ready solutions suggest themselves. Such solutions can address a variety of investor situations such as those with limited governance capacity, those persuaded by the case for alternative risk premia but still in the early stages of implementation, or those seeking to incorporate alternative risk premia into a traditional portfolio.

For this discussion, we focus on four of the most thoroughly researched factors, rather than the more complex strategy-based risk premia. We seek these four factors in the four major asset class groups of equities, fixed income, currencies, and commodities. In addition to value and momentum, described above, the four factors include carry (the tendency of higher-yielding assets to outperform lower-yielding assets) and liquidity (the tendency of less-liquid assets to outperform more-liquid assets).

That simple framework gives us a matrix of 16 potential alternative risk premia, as shown in table 1. Once we have selected those that are easy to trade, have a clear economic rationale, are of useful size, and have real diversification potential, we believe all except three are viable. We see no economic intuition in support of a persistent value premium in commodities; we...
do not consider the universe of off-the-run bonds necessary to extract a liquidity premium from fixed income to be large enough without incurring excessive gross leverage; and the emerging-markets exposure necessary to extract a liquidity premium from currencies would be too highly correlated with traditional risky assets.

### Creating a Portfolio of Alternative Risk Premia

Having identified a number of viable alternative risk premia, we now need to think about an efficient way to package them together.

The first thing to note is that there is a clear benefit from doing so. The low correlation between the returns to value and momentum in global equities is often referenced, but we have found that that relationship holds across all 13 of our alternative risk premia. Using a hypothetical backtested simulation, and based on returns since 2000, the highest correlation between any two risk premia was 0.65 (momentum in fixed income versus carry in fixed income, and carry in equities versus value in equities); many pairs exhibited correlations as low as −0.18 to −0.20 (the lowest were seen in carry in currencies versus value in fixed income, and carry in equities versus liquidity in equities). Most notable, perhaps, is that the lowest correlation was found between two factors extracted from the same asset class.

In its most common form, risk parity seeks to create an efficient allocation across multiple investments by weighting them roughly equally based on their relative risk contributions (as opposed to weighting them equally by capital allocation).

The theoretical assumption that justifies this approach is that, with no constraints on leverage and where Sharpe ratios and correlations are identical across different investments over the long term, a risk-parity portfolio can provide the most efficient asset allocation. The risk-parity portfolio can then be scaled higher—because leverage is not restricted—or lower, based on the target for overall-portfolio volatility.

In practice risk parity most often has been applied to multi-asset-class portfolios, as an alternative to the traditional 60/40 method, following the growing recognition that the traditional approaches tend to be dominated by equity risk rather than being genuinely diversified. This is clear in the extremely high correlation of performance

<table>
<thead>
<tr>
<th>Alternative Risk Premia</th>
<th>Value</th>
<th>Momentum</th>
<th>Carry</th>
<th>Liquidity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low price-to-market (book value) tends to outperform high price-to-market</td>
<td>Persistence in stock returns can be captured by following the trend</td>
<td>Dividend-yielding stocks may outperform over the long run</td>
<td>Size premium may exist as compensation for liquidity risk</td>
<td></td>
</tr>
<tr>
<td><strong>Fixed Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward rate premium compensates buyer for risk of changes to future forward rate</td>
<td>Persistence in bond-market returns can be captured by following the trend</td>
<td>Higher yielding bonds tend to outperform lower yielding bonds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure to multiple interest-rate markets</td>
<td>Long–short portfolio of government bonds</td>
<td>Long–short portfolio of government bond markets that prefers relatively steeper yield curves</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Currencies</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Undervalued currencies as measured by PPP tend to outperform over time</td>
<td>Persistence in currency returns can be captured by following the trend</td>
<td>Currencies with higher carry tend to outperform</td>
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<td></td>
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<tr>
<td><strong>Commodities</strong></td>
<td></td>
<td></td>
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<tr>
<td>Persistence in commodity returns can be captured by following the trend</td>
<td>Backwardated commodities tend to outperform those in contango</td>
<td>Liquidity premium for future months</td>
<td>Spread between the Bloomberg Commodity Index and the forward index</td>
<td></td>
</tr>
<tr>
<td>Long–short portfolio of commodities</td>
<td>Long–short portfolio of commodities based on backwardation or contango</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
between a 60/40 portfolio (60-percent MSCI World Index and 40-percent Barclays Global Aggregate Index) and a global equity index (MSCI World Index), which has been greater than 0.90 over the past 15 years.

Solving that problem by equalizing the risk contribution from different portfolio components (by lowering the capital allocation to the more volatile equity component), and then applying leverage to bring overall portfolio risk back to the target of 10 percent (the portfolio-level volatility of a 60/40 mix), creates a portfolio that, when modeled for a long-term hypothetical backtest, outperformed 60/40 in terms of return, risk-adjusted return, and drawdowns.

Investors quickly recognized that the fundamental principle of risk parity can be applied to create portfolios of securities within asset classes as well as across asset classes: It is possible to weight a portfolio of equities or commodities, for example, according to the historical volatility of each one of those equities or commodities. The same applies to alternative risk premia: Allocations to our 13 risk premia can be calibrated for equal risk contribution, with a high weighting going to a premium such as fixed-income carry and a lower weighting going to commodities momentum, for example. Leverage can be applied at the portfolio level to achieve the target overall-portfolio volatility.

We believe that combining alternative risk premia using the risk-parity approach to portfolio construction is a happy marriage.

**Integrating a Portfolio of Alternative Risk Premia**

We believe that a portfolio of alternative risk premia can be considered as a separate asset class because they exhibit sufficient differentiation from other investments in their risk and return profiles, both individually and as a combined portfolio. For example, the tracking error of a model portfolio of alternative risk premia constructed using a risk-parity approach and targeting 5-percent total volatility is 17 percent relative to global equities, 12 percent relative to a 60/40 portfolio, and 7 percent relative to hedge funds. In other words, they are all very high, further evidence for our view that this is a distinct asset class. We also have found the drawdown profile of a portfolio of alternative risk premia to be more attractive relative to hedge funds or a 60/40 portfolio, both with respect to the magnitude of the drawdown as well as to the non-synchronized nature of the drawdown relative to traditional betas’ drawdowns.

This demonstrates some of the potential benefits from introducing an allocation to alternative risk premia into a portfolio of global equities, or to a traditional multi-asset-class portfolio (60/40-weighted or otherwise), or to a hedge fund allocation.

Let’s begin by thinking about how to integrate an alternative risk premia strategy into a traditional 60/40 portfolio. One way to think about how much to allocate is in terms of expected tracking error: We believe 2-percent active risk is a reasonable objective for the total investment program.

This actually can be challenging to achieve, depending on how constrained the investor is in its allocation bands around asset classes, ability to short, ability to employ leverage, or other factors. Nonetheless, we can use the 2-percent active risk target as a guide to determine the maximum possible allocation to alternative risk premia before working backward to determine the actual allocation.

Let’s consider including an alternative risk premia strategy with a target portfolio volatility of 5 percent into a 60/40 portfolio, which historically has had about 10-percent volatility. For now, let’s also assume that the investor does not take active risk anywhere in the portfolio.

In seeking to achieve 2-percent active risk at the whole-portfolio level, one would have needed to invest 40 percent into the alternative risk premia strategy. This is because a 40-percent allocation to an alternative risk premia strategy with 5-percent volatility would have contributed 2-percent active risk (that is, 5 percent of 40 percent, ignoring the typically low correlation between 60/40 and alternative risk premia strategies). From this analysis, a 40-percent allocation to alternative risk premia would be the upper bound.

If that feels like an excessive capital allocation, an investor without constraints on leverage could invest in a higher volatility alternative risk premia allocation—a strategy with 10-percent volatility, for example—which would be roughly equal to that of the traditional 60/40 portfolio. Then an allocation of 20 percent to the alternative risk premia strategy would contribute 2-percent active risk at the whole-portfolio level (that is, 10 percent of 20 percent).

Now let’s revisit our assumptions with the potential diversification benefits to a portfolio with a hedge fund allocation in mind. Before, we worked on the assumption that active risk was not being taken elsewhere in the portfolio. This is not likely to be the case in reality, because portfolios often include some allocations to active investment strategies, whether traditional long-only or nontraditional (alternatives, hedge funds, opportunistic, diversifiers, and other categories).

We do not argue that alternative risk premia strategies are hedge fund replication
strategies or straightforward substitutes for hedge funds. In fact, the exposure of alternative risk premia strategies to hedge fund factors can be quite low, with correlation and beta often even negative. However, alternative risk premia strategies and hedge funds do tend to share high-level objectives such as absolute return and low correlation with traditional assets. With that in mind, we believe investors may want to re-examine performance expectations for both their traditional active-management and their nontraditional investments when considering what role alternative risk premia strategies might play as an addition to or partial replacement for such allocations.

In short, where active strategies are pursued, some of the 2-percent total active risk budget allocated to these active managers could be reallocated to an alternative risk premia strategy with the aim of improving efficiency, based on the fact that these active managers likely will have had exposure to some or all of the factors that generate these risk premia. Reassigning the risk budget to an alternative risk premia strategy where the implementation of these factors is typically long–short instead of long-only may provide for more upside potential given the purer exposure to the factors. Our research has indicated that such allocations to alternative risk premia can potentially improve returns and reduce volatility, with potentially significant reductions in the maximum drawdown profile of the whole portfolio.

Conclusion
The combination of decades of academic and practitioner research into investment factors with improvements in investing and trading technologies has led to wide acceptance of the efficacy of allocating to alternative risk premia and a proliferation of such investment products.

Investors face three challenging decisions: (1) which alternative risk premia to allocate to, (2) whether and how to combine them to form an alternative risk premia asset class, and (3) how to integrate alternative risk premia into the broader multi-asset-class portfolio.

As investors become more familiar with the space, they will make their own decisions about which risk premia fit with their investment beliefs and their governance constraints. Portfolio efficiency also could be improved further by exploring additional alternative risk premia to those we have covered here. However, we believe a significant part of the benefit of alternative risk premia investing can be accessed by pursuing the four factors of value, momentum, carry, and liquidity across the four asset classes of equities, fixed income, currencies, and commodities. We also believe that the low historical correlation between different alternative risk premia makes a strong case for combining them as a single asset class, and that a risk-parity portfolio construction may be an attractive methodology to do so.

The selection and combination of alternative risk premia certainly can be done in a more sophisticated way, but even using a simple, transparent, and systematic approach potentially can improve the risk-adjusted return profile of a traditional 60/40 portfolio, as well as a portfolio that includes a hedge fund allocation. In addition, the risk-adjusted return of a total portfolio may be further improved with every additional allocation to alternative risk premia strategies, suggesting that these improvements may be limited only by the size of the active risk budget that the investor has to deploy. ☉

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Reference

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The MSCI World Index: is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. As of November 27, 2013, the MSCI World Index consists of the following 23 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Barclays U.S. Aggregate Index: represents securities that are SEC registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

For traditional portfolios referenced herein, equities are represented by the MSCI World Index and fixed income is represented by the Barclays Global Aggregate Index.

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