The Case for Alternative Risk Premia

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Firm Overview

ARP Investment's flagship Alternative Risk Premia Fund systematically invests in the alternative risk premia associated with hedge fund strategies. ARP seeks to capture these risk premia with a systematic trade- or factor-based ("bottom up") investment process that closely resembles the typical investment process of hedge funds pursuing the same strategy.

Currently, the Fund invests in a number of market timing (momentum, valuation, carry, volatility and others) and security selection (valuation, momentum, event, volatility and others) risk premia. In a manner that is familiar to hedge fund investors, the Fund groups and trades these risk premia in the following strategies: CTA–Trend Following, Equity Market Neutral–Stock Selection, and Equity Event. The Fund will soon add exposures to Long Short Equity and GTAA strategies.

In addition to the combined exposures to all strategies, the firm also offers the underlying strategies separately.

ARP's investment philosophy is based on the belief that traditional hedge funds provide attractive, differentiated returns that often mix both alpha (manager-specific returns) and alternative risk premia (systematic or strategy returns). ARP Investments leverages significant hedge fund experience to deliver alternative risk premia through a systematic investment process with appropriate liquidity, high transparency, and lower fees. ARP focuses exclusively on risk premia products, to avoid internal conflicts with competing products.

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Executive Summary

Alternative risk premia factors (“alternative factors”) are emerging as attractive investment opportunities. They have demonstrated four attractive properties:

1. Alternative factors have exhibited persistently low correlations among alternative factors and with traditional risk premia factors (“traditional factors”).
2. Alternative factors have generated positive returns during periods of negative returns for traditional factors.
3. Alternative factors have generated superior risk adjusted returns compared to traditional factors.
4. Portfolios with allocations to alternative factors have enjoyed higher returns and lower risk than portfolios dominated by traditional factors.

These return characteristics imply that institutional investors and their portfolios can derive material benefits from investing in alternative factors. Furthermore, alternative factors have significant capacity, which makes them meaningful even for the largest institutional investors. They also offer high transparency, attractive liquidity, and relatively low fees. Interestingly, investors likely have some exposures already to alternative factors through “alpha” managers, who may be charging much higher fees.

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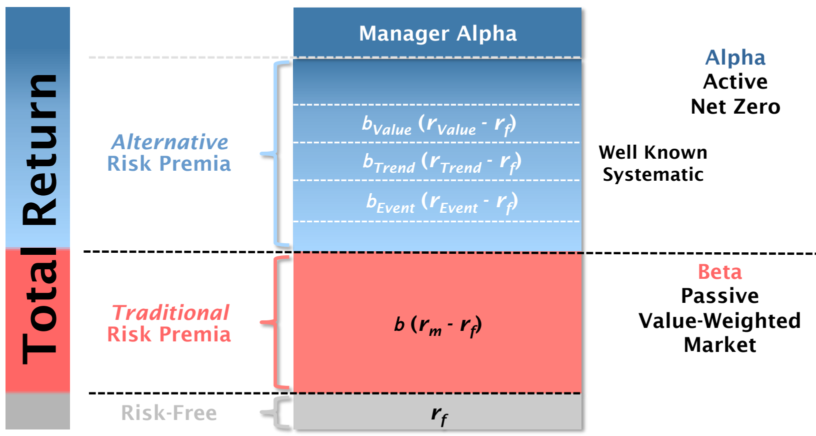
1. Introduction: Risk Premia as Return Components

We use figure 1 to define alternative risk premia. The figure graphically decomposes the total return of a portfolio into returns from the risk free rate, traditional risk premia, alternative risk premia, and idiosyncratic alpha.

Figure 1: Return Components



Of these, alternative risk premia are the least familiar. We define alternative risk premia factors as systematic implementations of active trading strategies offered at low, generally fixed fees. Examples of alternative risk premia factors include stock selection factors (momentum, valuation, quality), trend following, event investing, and systematic macro factors (momentum, carry, valuation). The two features that distinguish alternative risk premia from traditional risk premia are that

1. alternative risk premia do not have market exposures
2. alternative risk premia require active trading.

The requirement that alternative risk premia do not have market exposures, at least on average, implies that they generally contain long and short positions in the underlying securities.

Alternative risk premia factor portfolio

For the purpose of our empirical analysis, we construct an alternative risk premia factor portfolio with 25% risk weight to each of four factors: stock selection; trend following; systematic macro, and equity event. The portfolio is rebalanced annually at the beginning of each calendar year and is scaled to an annualized volatility of 8%. The underlying factor portfolios are sourced from ARP Investments internal research and publicly available factor returns on Bloomberg. The factor portfolio returns are based on simulated performance of systematic investment rules. They assume the reinvestment of dividends and other income. They are net of fees, expenses, and estimated transaction costs.

The stock selection portfolio systematically invests in individual global equities based on their characteristics. The portfolio invests in developed markets and is market neutral by holding equal long and short exposures. Long positions tend to have attractive valuations, high earnings quality, positive analyst sentiment, positive momentum, and attractive accounting measures of financial stability. Short positions tend to score poorly on the same characteristics.

The trend following portfolio invests in 70 liquid futures contracts using trend-following signals to determine long and short positions. In addition, the portfolio uses sophisticated risk management to ensure proper diversification across signals and asset classes.

The systematic macro portfolio also invests in liquid futures contracts but determines positions based on cross-sectional carry, value, and momentum signals.

The equity event portfolio invests in North American and European corporate events: announced mergers and Dutch auction share repurchases. The positions are determined by the announced deal characteristics and sized based on a proprietary risk model for mergers.

Traditional risk premia factor portfolio

We refer to common market segments (or asset classes) like global equities, global fixed income, and commodities as traditional risk premia factors. Long exposures to traditional factors like these dominate most institutional portfolios.

For illustration, we construct a traditional factor portfolio as a risk-weighted portfolio with risk weights as follows: global equities: 37.5%; government / investment-grade bonds: 30%; high yield credit: 7.5%; commodities: 25%. We interpret this as a simple implementation of a risk parity portfolio. The portfolio is rebalanced annually at the beginning of each calendar year and is levered to a nominal total weight of 150% on each rebalance day. Returns assume the reinvestment of dividends and other income.

For the purpose of our empirical analysis, we use the MSCI World (net) total return index for global equities. Similarly, we use the Barclays Global Aggregate (un-hedged) bond index for government and investment grade bonds; the Barclays Global High Yield (un-hedged) index for high yield credit; and the S&P GSCI total return index for commodities. The returns for all underlying indices are sourced from Bloomberg, MSCI, and Barclays.

2. Low Correlations

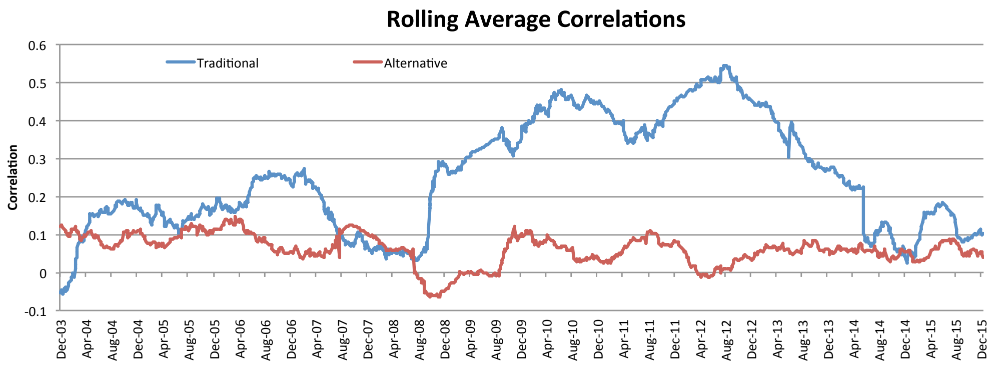
Diversification is the most powerful tool for portfolio construction and risk management. Diversification is most effective with investments that have low and stable correlations with each other. Alternative risk premia possess both of these properties.

Figure 2 compares average correlations among traditional factors with the average correlation among alternative factors. We compute pair-wise, one-year rolling correlations between traditional factors, represented by global equities, global fixed income and global commodities. On each day, we average the three pair-wise rolling correlations generated to compute the average correlation across traditional factors. The blue line in figure 2 plots these correlations.

Similarly, the red line plots the average pair-wise, one-year rolling correlations among alternative factors represented by stock selection, trend following, systematic macro and equity events risk premia.

The graph shows that Alternative factors exhibited persistently low correlations over the period. The analysis covers the period January 2003 to December 2015.

Figure 2: Return Correlations



3. Attractive Returns During Periods of Market Stress

Figure 3 presents the performance of our simulated alternative portfolio during quarters with negative returns for the traditional portfolio.

The analysis covers the period January 2003 to December 2015 and includes 15 quarters with negative returns for the traditional portfolio. Over these 15 quarters, the alternative portfolio returned +4.8%, on average, while the Traditional portfolio returned -5.1%.

Figure 3: Returns During Periods of Market Stress (Simulated)

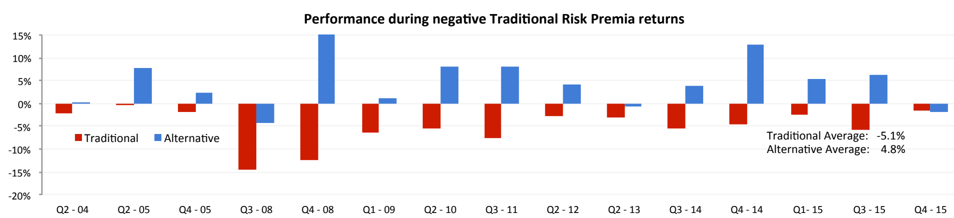
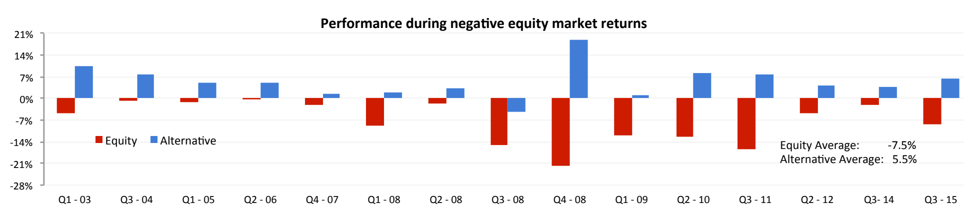


Figure 4 repeats this analysis for quarters with negative returns to global equities, represented by the MSCI World index. The analysis covers the period January 2003 to December 2015 and includes 15 quarters with negative returns to global equity markets. Over these 15 quarters, global equity markets returned -7.5%, on average. By contrast, the alternative portfolio returned +5.5%, on average, over the same 15 quarters.

Figure 4: Returns During Periods of Equity Market Stress (Simulated)



It is well known that equity risk dominates most institutional portfolios. Investments that perform well when equities are down, offer such portfolios excellent opportunities for diversification.

4. Superior Risk-Adjusted Returns

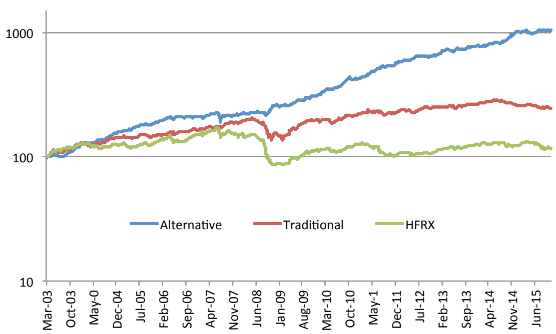
Figure 5 compares the cumulative returns of a *simulated* alternative risk premia portfolio to returns on the traditional risk premia portfolio and the HFRX Global Hedge Fund index returns. We include the HFRX index because some hedge funds may have exposures to alternative risk premia factors.

The blue line traces the cumulative *simulated* returns of the Alternative portfolio; the red line traces the cumulative returns of Traditional portfolio and the green line traces the cumulative returns of HFRX Global Hedge Fund index. The graph compounds daily returns from January 2003 to December 2015.

The table on the right shows summary statistics for the returns of these portfolios. The mean, median, and risk statistics are annualized.

The analysis shows that the alternative portfolio exhibited the highest Sharpe ratio among the three portfolios. Moreover, the alternative portfolio has also exhibited low beta and high alpha with respect to global equities and sovereign debt. The beta with respect to the HFRX Global Hedge Fund index is higher, but the alpha remains similarly high.

Figure 5: Historical Performance Comparison (Simulated)



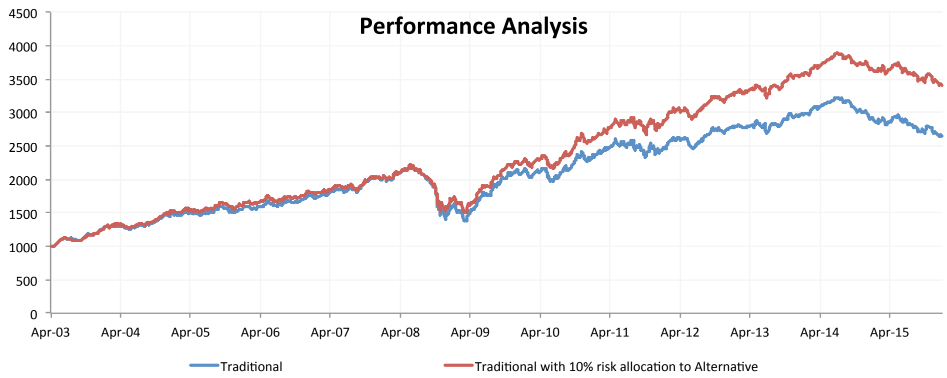
	Alternative	Traditional	HFRX
Arithmetic Mean	18.7%	8.3%	1.4%
Geometric Mean	20.0%	7.9%	1.2%
Median	19.9%	12.1%	4.4%
Risk	8.1%	11.6%	5.6%
Sharpe Ratio	2.25	0.56	-0.01
Max Drawdown	-4.7%	-34.4%	-25.3%
Percent Positive	75.8%	60.8%	59.5%
Equity α	16.2%	3.0%	-1.4%
Equity β	0.07	0.43	0.16
Sov. Debt α	15.8%	3.8%	0.0%
Sov. Debt β	0.36	1.05	0.00
HFRX α	16.7%	6.5%	-
HFRX β	0.70	1.34	-
Equity + Sov. Debt + HFRX α	16.5%	1.1%	-
Equity β	-0.12	0.35	-
Sov. Debt β	0.39	0.95	-
HFRX β	1.07	0.29	-

The alphas and betas with respect to equity returns, sovereign debt and HFRX Global Hedge Fund index are based on regression estimates for the full sample period. We proxy equity returns with the MSCI World index and sovereign debt returns with the Barclays Global Aggregate index. The regressions use returns in excess of the 3-month Treasury Bill return.

5. Enhanced Portfolio Performance

Figure 6 compares the cumulative returns of a simulated traditional portfolio and the returns of a simulated traditional portfolio augmented with a 10% risk allocation to alternative factors (for illustration only). The blue line traces the cumulative returns of the traditional portfolio. The red line traces the cumulative returns of traditional portfolio with the 10% risk allocation to alternative factors. The graph compounds daily returns up to December 31st, 2015. The analysis shows that overall portfolio performance is enhanced by allocation to Alternative factors.

Figure 6: Cumulative Returns (Simulated)



Live experience

Early live experience with alternative factor portfolios, especially during recent periods such as the third quarter of 2015 and January 2016, has confirmed the main findings presented earlier. Alternative factor portfolios have exhibited positive returns during both of these periods. At a factor level, strong performance in Trend-Following and Stock Selection was partially offset by a small loss in Equity Events.

6. High Capacity

Alternative factor portfolios have high capacity because they are highly diversified, systematic strategies that invest in highly liquid instruments. For example, limiting trading in futures and equities to a maximum of 5% of average daily volume translates into capacity for an individual firm to manage tens of billions of dollars in assets under management.

7. Conclusion

Alternative factor portfolios have significant capacity available to make them interesting for institutional investors. In addition to the attractive fees, alternative risk premia factor portfolios offer enhanced liquidity and transparency versus hedge funds. There now exist several competing alternative risk premia products with more sure to enter the market in the near future. When comparing these products, we can also show that hedge fund experience, risk management in particular, is an important ingredient in successful alternative factor products. Yet, alternative factor products offered by hedge funds create an internal conflict between the high-fee hedge fund and the low-fee alternative factor products. A natural way to avoid this conflict is to choose alternative factor products from asset managers without competing hedge fund products but with hedge fund experience.

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The HFRX Macro: Systematic Diversified CTA Index includes managers employing the Systematic Diversified CTA strategy. Systematic Diversified CTA managers typically employ an investment process designed to identify opportunities in markets exhibiting trending or momentum characteristics across individual instruments or asset classes. Strategies utilize quantitative processes which focus on statistically robust or technical patterns in the return series of the asset, and typically focus on highly liquid instruments.

The Barclays CTA Index (BARCCTA Index) provides a benchmark of representative performance of commodity trading advisors (CTAs). In order to qualify for inclusion in the Index, a CTA must have four years of prior performance history. Refer to www.barclayhedge.com for more details on index construction methodology.

A combination of HFRX Macro: Systematic Diversified CTA Index and BARCCTA Index is used as the benchmark index for the CTA Trend Following risk premia strategy returns. BARCCTA Index (monthly) returns are used for the period January 1990 to December 2008. HFRX Macro: Systematic Diversified CTA Index (daily) returns are used from January 2009 onwards. Combination index used due to availability of daily return data from HFRX Macro: Systematic Diversified CTA index (from January 2009 onwards).