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## Overview of Alternative Risk Premia (“ARP”) Strategies

While alternative risk premia (“ARP”) strategies are capturing the attention of investors and the industry alike, these are not “new” strategies. Popularized by the work of Fama and French, countless academics have published papers on systematic exceptions to the asset returns predicted by the Capital Asset Pricing Model (CAPM) which was first introduced in the early 1960s. What is new is the number of investment products that now package these alternative risk premia using quantitative methods. This increase has been driven by investors who recognize the appeal of their attractive return profiles and low correlation with traditional asset classes. Alternative risk premia strategies continue to evolve, developing new methods and techniques to sharpen existing signals and systematically extract premia from expensive “hedge” fund strategies. Given the increased complexity and diversity of these strategies, this paper outlines a framework for investors to navigate the alternative risk premia (ARP) universe.

As we reflect on the market activity of recent years and look ahead to the potential challenges of tomorrow with investors facing potentially weaker returns and higher risk from traditional asset classes, they are increasingly turning to ARP strategies to meet their goals. By systematically capturing the returns associated with different investing styles or strategies, such as value or momentum to name two common approaches, these strategies can potentially provide reliable long-term returns that are weakly correlated to traditional asset classes, and cheaper and easier to find than genuine alpha. As with any other asset class, investors should conduct full due diligence on the range of relevant strategies, but with the added number of offerings and the evolving (and inconsistent) nomenclature, there are additional dimensions that should be evaluated by prospective investors.

This paper describes the objectives of ARP strategies, the drivers of their returns and where they might fit in a portfolio, factors to consider when selecting an ARP manager.

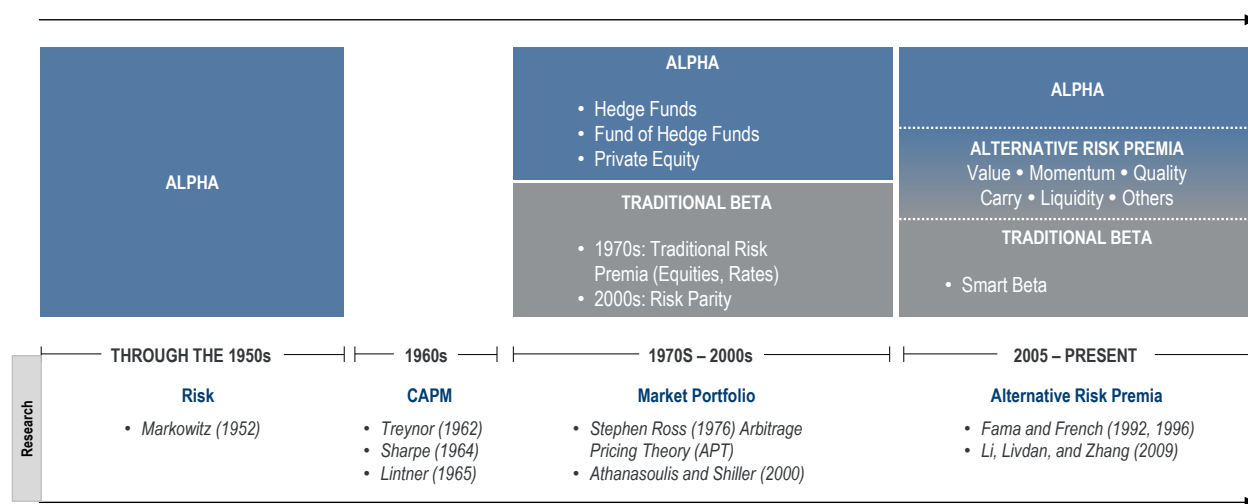
## Objectives of an Alternative Risk Premia Strategy

There is no shortage of industry jargon in an ARP strategy discussion (e.g., alternative beta, exotic beta, risk premia, alternative risk premia, factor investing, among others). Generally speaking, these strategies **seek absolute returns that are not highly correlated to traditional assets such as stocks and bonds**. As such, most investors bucket these strategies within alternatives or “absolute return” or “diversifying” buckets. Managers of these strategies seek these return objectives by implementing systematic long/short investment strategies to capture “factors” such as value (securities with lower valuations tend to deliver higher long-term returns than those with higher valuations) and momentum (securities whose price has recently outperformed tend to outperform, and vice versa). These strategies are typically transparent, liquid, and can be often expressed using systematic rules. The resulting portfolio and strategy often deliver a more consistent risk profile, while simultaneously being more cost effective than typical hedge funds charging “2 and 20” fees. We often remark that what is today’s “alpha” may be codified as tomorrow’s alternative risk premium.

Investors may also seek to access bespoke factor exposures in addition to absolute return exposures more broadly. ARP strategies can be customized to provide specific exposures to help diversify and/or hedge other parts of an asset allocation. For example, an investor may want to utilize trend/momentum strategies to help offset other strategies in the portfolio which exhibit negative skew (i.e. long left tail in a normal curve).

Figure 1 below highlights the evolving perspective on returns: what was previously considered “pure alpha” has been gradually decomposed throughout recent history into its more granular component building blocks, many of which can now be systematized and traded efficiently. Over time, we expect continued evolution along this spectrum, leading to a more granular understanding of the drivers of asset returns.

FIGURE 1: EVOLUTION OF RISK PREMIA INVESTING—NEW WAYS TO ACCESS OLD SOURCES OF RETURN



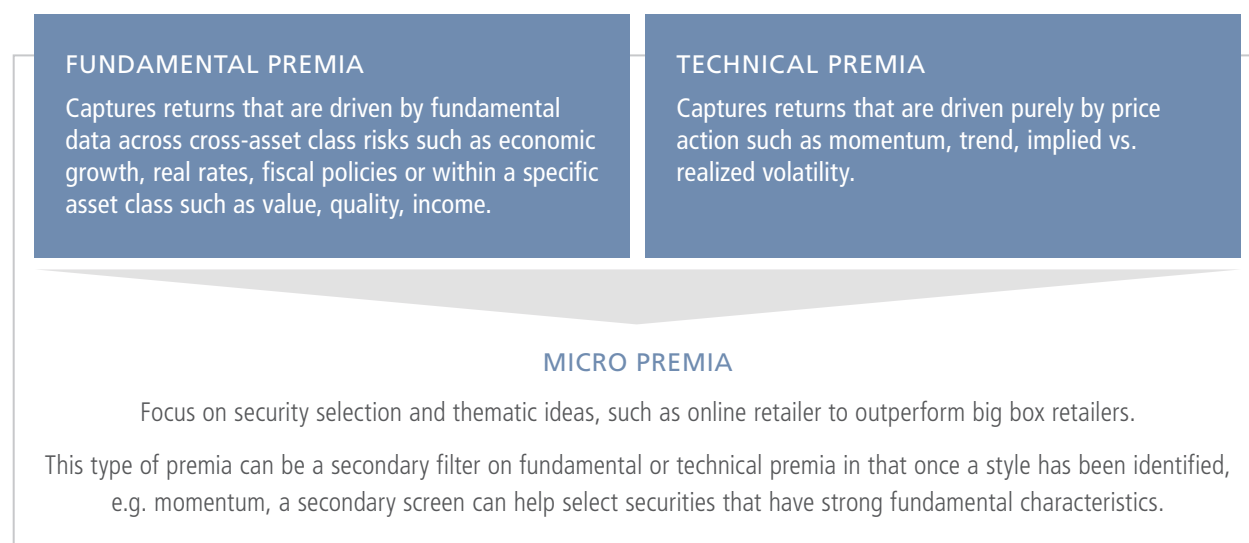
## Sources of Returns

As reviewed above, ARP strategies are systematic, long/short strategies designed to capture premiums—returns that are compensation for accepting certain risks. While the risk premia themselves can come in many different shapes and forms, their general characteristics include the following:

BACKED BY RESEARCH	Well documented and backed by both practitioners and academics
ECONOMICALLY INTUITIVE	Targets additional premium driven by factors other than the market
PERSISTENT	Pervasive across asset classes, market cycles and geographies
TRADABLE	Can be easily accessed using liquid instruments

There are several categories of explanation for the existence of risk premia, primarily related to risk, investor behavior and market structure.

### Premia can also be largely grouped by the following categories:



Returns beyond what can be explained by these categories and drivers of return may be considered “pure” alpha, and are typically scarce, capacity-constrained and generally warrant higher fees. Sources of such alpha may include:

- Undiscovered beta
- Effective tactical asset allocation and/or factor timing
- Areas where information barriers are high to obtain relevant data, or markets that are opaque or hard to trade
- Completely idiosyncratic alpha (the rarest)

Given the evolution that we have discussed of alpha decomposition transforming into beta over time, the dispersion of alpha across managers can be expected to be tighter going forward than over the last 15 years. For example, hedge fund assets under management grew from \$850 billion to \$3.5 trillion between 2009 and 2017.<sup>1</sup> However, pure “alpha” in **dollar** terms may not have necessarily increased more than threefold.

<sup>1</sup>Source: BarclayHedge. Hedge fund industry assets under management. Data as of December 31, 2017.

## Types of ARP Managers

There has been significant growth over the past few years in ARP offerings, although these can generally be boiled down to three major categories of risk premia strategies offered:

**1. Broker/Dealer strategies** – Banks and broker-dealers may each offer anywhere from 10 to 50 individual risk premia and a few multi-factor premia that can be accessed by qualified investors through total return swaps or other structured products. One driver of the expansion of this product suite from the banks/broker-dealers was the restrictions on proprietary trading under the Dodd-Frank regulations, where trading strategies that were previously utilized by bank trading desks were now being offered to clients in packaged form.

**Pros** – The rules are designed at the outset and are completely transparent.

**Cons** – The total costs are opaque and potentially prohibitive, and “simple” definitions are often convoluted and made too “cute” (e.g. with backtested optimized triggers). Importantly, banks and broker-dealers do not necessarily have the same fiduciary obligations as investment managers and therefore may be less likely to offer guidance on how, where and when to use individual risk premia. These products are also documented under ISDAs; involve counterparty risk; and depending on the strategy, may or may not have liquidity prior to the stated maturity of the trade. Finally, banks do not necessarily need to evolve the factors to account for changes in market behavior, new data sets and regulatory changes.

**2. “Smart” beta type strategies** – Several firms, mainly traditional long-only quant shops, have moved into the risk premia space via straightforward, simply constructed premia using either direct investments or bank swaps.

**Pros** – These strategies leverage factor definition and portfolio construction methodologies that are well defined and easy to understand, and often are available at attractive fees.

**Cons** – Locked-in rules can fail to adapt to market conditions—they do not help push the envelope by sharpening signals, nor do they stay abreast of new tools, methodologies and data.

**3. Dynamic (or 2.0 type) strategies** – Traditional hedge funds, in response to fee pressure, have started offering strategies that help discern diversifying return drivers by systematizing consistent, robust and persistent signals in a thoughtful, intuitive and liquid manner.

**Pros** – These types of strategies help investors achieve their objectives, i.e. to provide diversifying returns as new information/tools/techniques become available without comprising on the philosophy of the process.

**Cons** – Investors may compromise on transparency. While the signals and exposures may be known, their precise definitions are usually not fully disclosed since the manager continues to evolve the signal and construction process. Fees are also typically higher than smart beta strategies, albeit lower than traditional hedge fund active management.

Estimated assets for the first category are in the hundreds of billions, while the remaining two categories are dominated by a small handful of players. Also, some investors interchangeably use risk parity, risk premia or dynamic beta. They are very different strategies and should not be labeled together.

## Considerations when Selecting ARP Strategies

Apart from the “standard” due diligence one would conduct when evaluating any investment strategy, we believe the following factors are relevant in the selection of ARP strategies:

**Investment philosophy** – The key drivers of potential risk/return are the types of signals used (“categories” in our discussion above) and the asset classes in which they are employed. Not all asset classes are utilized by every strategy. Strategies tend to differ by allocation to each asset class and this can be static, dynamic or a combination of both. An investor needs to understand manager’s experience and strength in trading each asset class and tie that to the broader exposure at the strategy level (e.g. currencies can be one of the most difficult risk exposures to trade, so it is pertinent that manager has considerable experience and edge trading this asset class). In other words, play to the manager’s strength—since allocation between asset classes can carry

considerable risk in a multi-asset class context. A traditional matrix of a manager’s risk premia and asset class would typically consist of some combination of the following:

CATEGORY	ASSET CLASS
Fundamental Technical Micro	Equity Rates Currency Commodities Credit Volatility* Alternative (Event Driven, Cat Bonds, etc.)

\*Few managers tend to have a separate line item for volatility premia even though the underlying may be traditional asset classes

Investors should determine why each signal was selected (and why others were avoided), which will help create a road map of the broad exposures of the final portfolio.

**Signal definition** – While the labels of these signals may be similar or even the same from one manager to the next—e.g. equity value—the exact definitions used will differ. For example, value can be defined by a simple P/B ratio, or as an average of a combination of yield-focused characteristics, or by utilizing forward-looking estimates, or using alternative real-time estimates for some sectors. From an investor’s standpoint, it is important to understand the economic/behavioral efficiency rationale for a signal to persist and as to why a manager is using a specific definition and why they believe that will result in a high likelihood of persistent outcomes.

**Portfolio construction** – Several methods of portfolio construction are commonly used, including traditional covariance-driven methodologies, rank of ranks, machine learning, fixed allocations, risk parity allocations or a combination of these. Again, it is key for investors to determine the economic rationale as to why a manager is using a specific methodology, and whether they have accounted for the unique considerations that may exist for certain signals/countries/sectors. Each one of these methodologies has pros and cons, which we will tackle in a separate paper.

**Risk management** – Risk can be managed from the top down (portfolio volatility targets, notional limits or stop losses), or from the bottom up at a micro level (position level risk limits) or through a combination of the two. An investor also needs to make sure that the risk model does not impair the alpha model.

**Execution** – This is a key aspect of any investment strategy that often is not fully considered by investors. In ARP strategies in particular, execution can be an important determinant of a strategy’s success. ARP strategies are not seeking to take huge bets on a handful of positions—a profitable ARP strategy is often achieving success through a series of singles and doubles. As such, execution and capital markets expertise are critical from a total cost perspective, as is a thoughtful approach to managing liquidity, especially during volatile periods.

Other factors to consider:

**Research process for sourcing and refining signals** – Typically a combination of thorough research, portfolio manager and team experience, academic backing and trading expertise would be the best mix of manager traits to build signals. Trading static bank signals may leave a portfolio exposed to crowding risk with no sharpening of signals as more information and computing techniques become available.

**Investment time horizon** – Risk premia strategies will vary from one provider to the next across their liquidity profiles, data frequency, trading periods and other characteristics. It is important to make sure one is comparing “apples to apples” and creating peer groups of strategies that have a similar investment time horizon and to set expectations based on that horizon. In general, most strategies have a three- to five-year holding period. Higher frequency strategies tend to have shorter investment time horizons.

**Leverage** – Similar to other strategy characteristics, ARP managers typically employ some degree of leverage so it also is important to compare such strategies on a pari passu basis. Leverage typically ranges from 2X to 8X gross notional exposure for most strategies. More importantly, it is critical to look through to the underlying portfolio to see the contribution to leverage, both from a signal and asset class basis. Also, investors should understand how much leverage comes from borrowing as compared to the notional exposure from derivatives, and they should also review the margin/equity policy for the strategy.

**Turnover and trading frequency** – The turnover of ARP strategies typically ranges from 75% to 250% depending on the asset classes traded. Another common factor overlooked is trading frequency. Less trading frequency generally tends to be matched with longer half-life of the models, and may be prone to larger drawdowns.

**Costs** – Investors should consider total costs, including management fees, fund expenses, commissions and service provider costs (prime broker, custodian, etc.), and swap costs (if relevant). Smart beta type ARP managers are generally on the lower end of the cost spectrum. Also, investors should consider hidden costs that may detract from the total return of the strategy. For example, how is the manager/counterparty compensated beyond stated fees, and is there potential for the manager to extract trading profits in excess of stated fees that will detract from total performance?

**Volatility** – Similar to leverage, volatility typically ranges from 5% to 15%. Most strategies at the higher end of the volatility spectrum are generally more levered, so investors should exercise additional caution when evaluating higher volatility strategies. Some funds target a specific volatility while others target notional levels.

**Skew** – In general, liquid hedge funds need to provide skew that is close to zero if not positive, but very few do. One way to look at this characteristic would be to see what percent of the portfolio is in convergence trades (trades that are expected to mean revert) versus divergence trades. Traditional asset classes and hedge funds tend to have a lot more convergence trades. In order to diversify, the ARP strategy would need to have a sizable portion of the risk in divergence trades, which would provide a higher skew and more attractive correlations versus traditional indices and hedge funds.

**Discretionary input** – Strategies that tend to have a significant degree of discretion—either over positions or risk, with 10% a typical threshold level for the amount of discretion—will not squarely fall into a traditional ARP sandbox.

**Experience in trading alternative products** – Since ARP strategies can be a supplement for liquid hedge funds, it is important to understanding a manager’s experience in trading alternative strategies through various crises and over as long a history as possible. One should be cautious of product proliferation especially if managers have little to no experience in trading long/short or when managers create multiple derivatives of a core strategy.

**Benchmarks** – Currently, the ARP space lacks a standard benchmark given the plethora of investment approaches, strategy objectives and levers available to trade signals. Two of the more well-known reference indices are the Societe Generale (SG) Multi Alternative Risk Premia index and HFRX suite of indices, but there are important considerations around these indices and they should be used carefully and only where appropriate. The best solution, once a particular strategy has been selected, is to identify the main objectives and exposures and use a set of triangulation tools to help determine the outcomes on an absolute and relative basis.

**Capacity** – Managers tend to use many different asset classes and signals. While the deployment of additional levers may provide more diversification, this may come at a cost of constraining capacity, especially if the strategy has exposure to certain asset classes such as commodities, emerging market debt, structured products or credit-linked instruments such as catastrophe bonds. One way to assess this is to work backward from the strategy’s least liquid asset class exposures (stress test for liquidity) to determine the ARP strategy’s overall capacity. Investors should also be aware of any proxies or derivatives usage to gain exposure to less liquid markets.



Finally, other factors that are important in determining capacity in ARP strategies include turnover, trading periods, signal frequency, investment holding time horizon, redemption/subscription clauses, market correlations and transaction costs, among others.

## Developing an ARP Allocation Framework

While it goes without saying that the objectives of an ARP investment program will differ from one investor to the next, we believe that there are a handful of universal core decisions that every investor should consider.

**1. Determining the answer to the question: What overall objective am I trying to achieve?** Some possible answers include:

- Replace some or all hedge fund or fund of hedge funds exposure with a potentially more transparent, liquid, cost-effective alternative investment strategy
- Reduce costs within an alternatives allocation, without significantly changing the risk profile
- Add a diversified long volatility profile to help offset short volatility exposure within hedge funds in credit, distressed or more illiquid strategies
- Shift active risk budget from traditional asset classes where passive options can be used to a greater extent to attractive alternative strategies such as ARP, which are more likely to contribute to reaching target returns
- Diversification for a long duration portfolio against a backdrop of healthy funding ratios and liabilities that are largely hedged
- Generate return on cash while awaiting private equity investment

**2. Determine the time horizon for the investment in ARP.** While it may be possible to select an ARP strategy with a time horizon in sync with the investor's, diversifying an ARP allocation across a few strategies may provide a more consistent path toward achieving the desired time horizon.

**3. Establish risk parameters.** There are a plethora of parameters an investor may focus on to help manage and monitor risk. Some of the more important ones to focus on for an ARP strategy include:

- **Leverage.** Set guidelines around the expected total notional leverage ranges and contribution to leverage from the various asset classes and premia employed by the strategy.
- **Volatility.** Understand the expected volatility range for the program.
- **Drawdown Threshold.** Determine any hard limits to one's "pain threshold," that is, how much an investor is willing to lose within a specific time period. This may be accomplished through the use of cone charts (taking action when performance breaches pre-determined boundaries), or using absolute stop loss/drawdown limits, such as VaR, or several other drawdown statistics. There will be pros and cons to any such metrics—in the case of the cone chart, for example, the entry point of the investment is important—so investors should weigh these considerations before final selection.
- **Skew.** Understanding the long-term range for skew can be helpful in managing expectations around the expected distribution and ultimate path of returns.
- **Correlation and Beta.** Investors should have an understanding before investing about the expected correlation and beta of the ARP portfolio to their overall investment programs as well as to other alternative managers in which they may be invested. Any desired limits on these statistics should be considered at this time as well.
- **Liquidity.** Scenario analysis and stress testing (based on Bayesian methodology) can be used to establish how much liquidity is required during critical periods, such as during margin calls, capital calls or periods of increasing liabilities. That said, caution should be applied toward viewing or treating ARP strategies as an "ATM" during a stress scenario since that may cause the investor to lose the diversification benefits of the strategy in their asset allocations when they are needed most.

#### 4. Selecting ARP Strategies

Once a full understanding of a potential pool of ARP managers has been gained, setting out these details into a matrix that can easily highlight the exposures across premia and asset class is helpful to selecting strategies. For example, let's suppose an investor seeks a long volatility strategy to diversify their portfolio's skew characteristics at a reasonable cost. An ARP strategy offering the following matrix of exposures may be a possible candidate for investment:

	EQUITIES	RATES	COMMODITIES	FX
Trend	Y	Y	Y	Y
Options Selling	Y	Y		
Cross-sectional momentum	Y		Y	

Selecting two to three managers—rather than a single manager—to address a particular objective can help increase the probability of meeting objectives since taken together, over time, the combination of managers is more likely to average out at the investor's expectation for the various risk and return characteristics.

Investors should also analyze whether the individual strategies are diversified on a standalone basis. For example, assessing the diversification across risk premia styles, time horizon, asset classes, types of trades in the book (divergence versus convergence trades) and risk-on versus risk-off signals all are helpful questions to ask. Finally, an assessment of trading frequency to minimize the impact of path dependency, as well as gaining comfort in the portfolio management team also is important, with previous experience in ARP being an important differentiator among managers.

#### 5. Benchmarking

Given the wide range of approaches in alternative risk premia strategies as well as the similarly diverse objectives that investors may have for such programs, the issue of benchmarking an ARP program is not entirely straightforward. Of course individual managers may have stated benchmarks for their ARP strategies, which can be considered when developing an overall benchmark for the allocation. For allocators that invest in more than one ARP manager, however, the issue of benchmarking the overall ARP allocation is more complex.

There are both endogenous and exogenous approaches. On the former, for example, one approach is to consider the objectives of the investor's overall ARP program and develop a benchmark in line with that. For example, if the goal is to replace some hedge fund exposure with a more cost-effective, transparent option, then the benchmark for the ARP program might simply be the client's benchmark or reference index for its alternatives bucket. An exogenous approach would be to consider some of the third party ARP indices that are being developed, such as the SG Multi Alternative Risk Premia Index or others that seek to monitor performance of a diversified group of ARP managers. It is important, however, to understand the index constituents and construction to ensure that the performance comparison is relevant.

#### Conclusion

Since 2013, the ARP space has grown to over 50 buy-side strategies and in excess of 200+ individual risk premia offered by the sell-side. Most of the strategies have a short track record, so it is important to have a thoughtful process by which an investor makes decisions in this space. Given the growing complexity and diversity of the strategies, it is important to conduct due diligence on ARP strategies as one would with a potential hedge fund investment (as opposed to how one might evaluate a long only or smart beta manager), and to truly understand the manager's experience in managing ARP strategies or whether this is a "new" endeavor for them. There are currently a sufficient number of players and enough dispersion in the ARP universe to be able to build a portfolio of multiple ARP strategies—ideally three to five depending on the amount of assets to be deployed. An allocation to such a portfolio of ARP strategies can form a core allocation within the investor's alternatives bucket that can diversify the investor's overall portfolio, while contributing to a more consistent pattern of returns over time.



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