Morgan Stanley

INVESTMENT MANAGEMENT

# Conducting Due Diligence on Alternative Risk Premia

**SOLUTIONS & MULTI-ASSET** | AIP HEDGE FUND TEAM | INVESTMENT INSIGHT | 2018

CO-AUTHORS

**PATRICK REID, CFA®**
*Managing Director, Portfolio Advisor*

**PETER VASILIADIS**
*Managing Director, Head of Operational Due Diligence*

As part of our commitment to providing insight on alternative risk premia, we'd like to share our view on what is required to conduct thorough due diligence on these investments. In our earlier paper, "An Introduction to Risk Premia," we highlighted the key attributes, risks and applications of alternative risk premia.[1] In this paper, we will focus on platform evaluation and premia analysis.

While risk premia have existed for some time—and have long been used by hedge funds—they have only recently begun to be evaluated by a broad swath of investors. Albourne Partners ("Albourne") estimates asset manager risk premia assets under management ("AUM") at $144.6bn, with $103.2bn in long-only beta products and $41.4bn in alternative risk premia.[2] *(Display 1)* Within the alternative risk premia space, it notes that asset managers with AUM >$1bn represent close to $23bn in assets under management. This suggests a fairly high concentration of managers who are active in the space and knowledgeable about it.

**DISPLAY 1**
**Breakdown of AUM in Risk Premia Strategies**


[1] Patrick Reid, Mark van der Zwan, "An Introduction to Risk Premia," Morgan Stanley Investment Management (November 2017.)
[2] "Alternative Risk Premia," Morgan Stanley Prime Brokerage (October 2017.)

Separately, through a survey of 13 broker-dealers, Albourne estimates broker-dealer risk premia AUM at $390bn, which suggests a significant amount of direct investor activity independent of asset managers.[3] Given the growth of investor interest in this space, we thought it timely to share our insights on what constitutes effective due diligence.

For two main reasons, ***effective due diligence requires significant resources.*** First, an investor needs to be able to evaluate all of the premia available on the market. And second, an investor needs technical expertise to evaluate each platform and premium—and to continue doing so on an ongoing basis.

## BREADTH AND NUMBER OF AVAILABLE OPTIONS

As of December 2017, we have evaluated 13 bank providers, representing more than 1,300 individual alternative risk premia. Our research shows an approximate 5:1 ratio of new index launches to cancellations. Further, we estimate approximately 100 new indices were launched in 2017.[4] It is clear that ***the choice of risk premia is continually growing***. With this ever-evolving landscape, we believe it is ***critical to have the technology and processes*** in place to capture all available information about premia so that it can be stored, categorized and used for comparison purposes.

## PREMIA COMPLEXITY

Risk premia are not only diverse, but they can be complicated too. For this reason, an investor's due diligence process must be sophisticated and ***multifaceted***, with strong investment, quantitative and operational components. Beyond having sufficient resources to evaluate the premia, we believe there are benefits to ***aligning risk premia diligence with hedge fund strategy expertise***, and having strategy or asset class experts evaluate the different risk premia categories. For example, macro and CTA analysts could be well-positioned to evaluate commodity risk premia and trend risk premia strategies, while quantitative equity hedge fund analysts and equity long-short analysts might have an advantage in evaluating micro equity premia.

## EVALUATING BANK PLATFORMS AND PROVIDERS

As is the case when evaluating a hedge fund, there are a number of things to consider when evaluating a risk premia platform. These include platform breadth, key personnel, organizational history, investment process, potential biases, pricing, construction, platform counterparty creditworthiness and reporting capabilities—to name just a few. Within each of these broad categories, considerations will range from fairly straightforward to more nuanced and situation-dependent.

At one end of the spectrum are determinants that are fairly binary, such as counterparty credit-worthiness, pricing and transparency. At the other end of the spectrum are considerations, such as number of risk premia and design methodology, which are more subjective and nuanced. While it might appear that a platform with a larger number is better, the reality is more complicated. The number of premia offered should be considered in the context of whether the platform aims to be broad or specialized. If the former, then a high number is positive; if the latter, it could be cause for concern.

The alternative risk premia space is growing, and it is important for investors to be able to look at as many different pieces of information and data points as possible. Having a holistic view is especially important when evaluating things like personnel turnover, a consideration that could be overlooked but is actually very relevant for risk premia. The stability of key personnel may have implications for how consistently the research process is applied or whether an index provider can continue to develop its offerings and keep pace with important market developments. An investor who conducts comprehensive due diligence across a number of providers at once is more likely to identify turnover than an investor who focuses on only one platform at a time.

By describing our perspective on a few of these considerations, we hope to make clear that in our view ***evaluating platforms requires resources, expertise, time and commitment***. The nature of these investment strategies is such that they change quickly and continually, so having the right resources and infrastructure in place to make sense of those changes on an ongoing basis is essential.

## BRINGING IT TOGETHER

***The evaluation process requires inputs from investment as well as operational due diligence experts.***

Having evaluated the platforms, the next core component is analysis of the individual premium itself. With the vast number of premia providers in the space today, this work is both extensive and critical. In our view, the work begins with ***understanding the fundamental and academic rationale*** underlying a given premium. A large body of research covers

[3] "Alternative Risk Premia," Morgan Stanley Prime Brokerage (October 2017.)

[4] Source: AIP analysis based on information provided to us by six banks with risk premia platforms.

many risk premia styles, and an investor should be able to explain why and how a given premium should perform.

It is also important to understand how a premium is harvested. What instruments are used? How many positions should be expected? How frequently is there trading? Is short exposure attained by shorting single names or shorting an index? Which approaches might have inherent biases based on specific criteria applied or an individual market structure? Not only is it important to evaluate the academic underpinnings of a premium, but it is also essential to have a view on the ***best way to approach harvesting*** that type of premium.

We believe that synthesizing fundamental and academic research on a style of premium helps to establish a framework for assessing the relative attractiveness of different premia of that same style across providers. For each style of premium, our analysts review all available academic research and conduct their own proprietary research. The culmination of this effort is a summary of implementation recommendations, the rationales for which are presented to a peer group for review and debate.

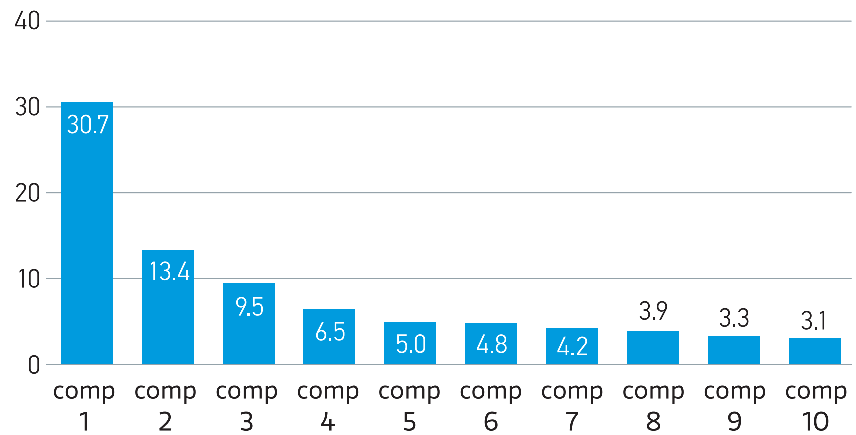
## QUANTITATIVE ASSESSMENT

Once an investor has established a universe of potential risk premia from an array of providers, a series of statistical analyses can be performed to determine the relative attractiveness of each premium. Such checks are essential to understanding each premium's expected performance and the robustness of its design. As there are no formal benchmarks against which to measure risk premia, a thorough evaluation requires very specific and technical analyses.

**DISPLAY 2**

**Illustrative Commodity Carry Premia**

*% variance explained by component*




For illustrative purposes only.
Source: Alternative Risk Premia Team as of June 7, 2017.

For bank-sponsored risk premia, which are indices, an investor has access to a ***wealth of information from rule books***. Because of the "institutional" way these investments are sold, banks are required to disclose to their investors details about index construction and the parameters used in developing them. This information is available upon request.[5] An investor should review these rules with an eye toward ensuring the methodology for harvesting the risk premium is consistent with the risk premium the strategy seeks to exploit. With the transparency provided by rule books, investors can test the indices under different scenarios and evaluate performance themselves. Further, investors can adjust the index parameters in their proprietary testing and evaluate the potential impact on performance under different circumstances.

Next, an investor should evaluate the ***distribution of returns and risks*** for each premium. Premium behavior can be categorized as persistent, episodic or structural, with the risk of decay over time. This evaluation may help an investor determine what roles different types of exposures could play in a portfolio.

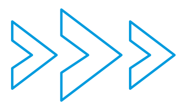
Another key consideration is what factors drive the behavior of the premium and whether those factors are independent of or complementary to one another. We believe ***principal component analysis*** ("PCA"), which can be used to identify—but not predefine—the risk factors common to a set of data, is particularly useful.

For example, *Display 2* shows all of the common risk factors impacting performance of a group of risk premia referred to as "commodity carry risk premia." Through our analysis, we can see that component #1 appears fairly dominant. In other words, it likely plays a role in explaining the behavior of the risk premia classified as "commodity carry." While this diagram appears fairly straightforward, sophisticated analysis is required to draw these sorts of conclusions.

[5] Often provided subject to a nondisclosure agreement.

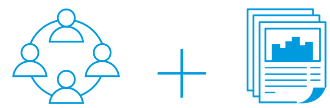
Using PCA also helps us confirm something that our fundamental research had suggested: Of the distinguishable components, there appear to be two identifiable groupings within the broader universe of commodity carry premia, backwardation and curve carry. These two clusters can be seen in *Display 3*.

It is also important for investors to conduct peer analysis, comparing the same type of premium across platforms and evaluating the dispersion. This allows an investor to identify where the purity of the risk premium may be called into question but also where there is the opportunity to add value through premium selection. As one might expect, this should not be considered a one-time evaluation, but rather ***an ongoing process***. As mentioned earlier, it is important to have the appropriate people, processes and tools in place for routine gathering and analysis of data.



**ROBUST DECISION-MAKING PROCESS**

Lastly, a comprehensive due diligence process would not be complete without **an appropriate structure for review and approval.** We believe that a strong process incorporates both rigorous independent analysis and a formal vetting process, such as committee or peer approval. In our view, the process should be **well-documented and repeatable.**

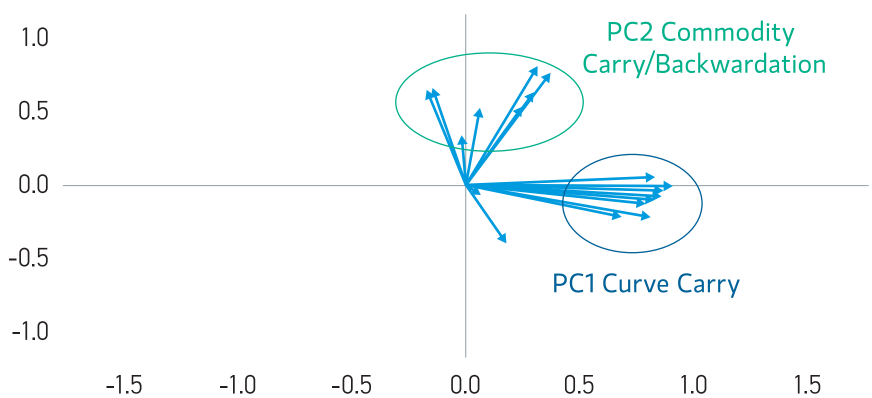


Of course, in such a fast-paced investment landscape it is crucial that **ongoing risk monitoring and investment-style monitoring** be a formal component of the overall investment process. As with any investment, care should be taken to ensure that the risk premium strategy is performing as expected. Any deviation should be identified, escalated and, if required, acted upon.

**DISPLAY 3**

**Two Types of Premia Associated With Commodity Carry**

*Factor loadings on PC1 and PC2*




For illustrative purposes only.

Source: Alternative Risk Premia Team as of December 31, 2017.

## Conclusion

Alternative risk premia is a rapidly growing and very dynamic opportunity set that many investors seem eager to explore. In order to make prudent investments in this space, it is crucial that investors have the requisite infrastructure in place or that they partner with someone who does. As we hope to have made clear, a robust due diligence process will help take advantage of what we believe is an exciting opportunity in an evolving segment of the market.

## DISCLAIMERS

The views expressed herein are those of the Investment team and are subject to change at any time due to changes in market and economic conditions. The views and opinions expressed herein are based on matters as they exist as of the date of preparation of this piece and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available or circumstances existing, or changes occurring, after the date hereof. The data used has been obtained from sources generally believed to be reliable. No representation is made as to its accuracy.

Information regarding expected market returns and market outlooks is based on the research, analysis and opinions of the investment team. These views do not represent views of other investment teams at MSIM or those of the firm as a whole. These conclusions are speculative in nature, may not come to pass and are not intended to predict the future of any specific investment.

Certain information contained herein constitutes forward-looking statements, which can be identified by the use of forward-looking terminology such as "may," "will," "should," "expect," "anticipate," "project," "estimate," "intend," "continue" or "believe" or the negatives thereof or other variations thereon or other comparable terminology. Due to various risks and uncertainties, actual events or results may differ materially from those reflected or contemplated in such forward-looking statements. No representation or warranty is made as to future performance or such forward-looking statements.

Past performance is not indicative of nor does it guarantee comparable future results.

This piece has been prepared solely for informational purposes and is not an offer, or a solicitation of an offer, to buy or sell any security or instrument or to participate in any trading strategy.

Persons considering an alternative investment should refer to the specific fund's offering documentation, which will fully describe the specific risks and considerations associated with a specific alternative investment.

Alternative investments are speculative and include a high degree of risk. Investors could lose all, or a substantial amount of, their investment. Alternative investments are suitable only for long-term investors willing to forgo liquidity and put capital at risk for an indefinite period of time. Alternative investments are typically highly illiquid—there is no secondary market for private funds, and there may be restrictions on redemptions or the assignment or other transfer of investments in private funds. Alternative investments often engage in leverage and other speculative practices that may increase volatility and risk of loss. Alternative investments typically have higher fees and expenses than other investment vehicles, and such fees and expenses will lower returns achieved by investors.

This is a summary of various risks associated with investing in alternative risk premia. This summary is not, and is not intended to be, a complete enumeration or explanation of the risks involved. The recipient should consult with its own advisors before deciding whether to invest in these strategies. In addition, to the extent that the investment program of such a portfolio changes and develops over time, additional risk factors not described here may apply. Only a recipient who understands the nature of the investment, does not require more than limited liquidity in the investment and has sufficient resources to sustain the loss of its entire investment should consider making the kind of investments described in this Presentation.

**General Risks of Derivatives.** An alternative risk premia portfolio could use various derivatives and related investment strategies, as described below. Derivatives may be used for a variety of purposes including hedging, risk management, portfolio management or to earn income. Any or all of the investment techniques described herein may be used at any time and there is no particular strategy that dictates the use of one technique rather than another, as the use of any derivative by a portfolio is a function of numerous variables, including market conditions.

A derivative is a financial instrument the value of which depends upon (or derives from) the value of another asset, security, interest rate or index. Derivatives may relate to a wide variety of underlying instruments, including equity and debt securities, indices, interest rates, currencies and other assets. Certain derivative instruments that a portfolio may use and the risks of those instruments are described in further detail below. A portfolio may also utilize derivatives techniques, instruments and strategies that may be newly developed or permitted as a result of regulatory changes, to the extent such techniques, instruments and strategies are consistent with a portfolio's investment objective and policies. Such newly developed techniques, instruments and strategies may involve risks different than or in addition to those described herein. No assurance can be given that any derivatives strategy employed by a portfolio will be successful.

The risks associated with the use of derivatives are different from, and possibly greater than, the risks associated with investing directly in the instruments underlying such derivatives. Derivatives are highly specialized instruments that require investment techniques and risk analyses different from other portfolio investments. The use of derivative instruments requires an understanding not only of the underlying instrument but also of the derivative itself. Certain risk factors generally applicable to derivative transactions are described below.

Derivatives are subject to the risk that the market value of the derivative itself or the market value of underlying instruments will change in a way adverse to a portfolio's interests. A portfolio bears the risk that the Adviser may incorrectly forecast future market trends and other financial or economic factors or the value of the underlying security, index, interest rate or currency when establishing a derivatives position for a portfolio.

Derivatives may be subject to pricing (or mispricing) risk. For example, a derivative may become extraordinarily expensive (or inexpensive) relative to historical prices or corresponding instruments. Under such market conditions, it may not be economically feasible to initiate a transaction or liquidate a position at an advantageous time or price.

Many derivatives are complex and may be valued subjectively. The pricing models used by a portfolio to value derivatives may not produce valuations that are consistent with the values a portfolio realizes when it closes or sells an over-the-counter ("OTC") derivative. Valuation risk is more pronounced when a portfolio enters into OTC derivatives with specialized terms because the market value of those derivatives in some cases is determined in part by reference to similar derivatives with more standardized terms. Improper valuations can result in increased payment requirements to counterparties, over- and/or under-collateralization, and/or a loss of value to a portfolio.

Using derivatives as a hedge against a portfolio investment subjects a portfolio to the risk that the derivative will have imperfect correlation with the portfolio investment, which could result in a portfolio incurring substantial losses. This correlation risk may be greater in the case of derivatives based on an index or other basket of securities, as the portfolio securities being hedged may not duplicate the components of the underlying index or the basket may not be of exactly the same type of obligation as those underlying the derivative. The use of derivatives for "cross hedging" purposes (using a derivative based on one instrument as a hedge on a different instrument) may also involve greater correlation risks.

While using derivatives for hedging purposes can reduce a portfolio's risk of loss, it may also limit a portfolio's opportunity for gains or result in losses by offsetting or limiting a portfolio's ability to participate in favorable price movements in portfolio investments.

Use of derivatives for non-hedging purposes may result in losses which would not be offset by increases in the value of portfolio securities or declines in the cost of securities to be acquired. In the event that a portfolio enters into a derivatives transaction as an alternative to purchasing or selling the underlying instrument or in order to obtain desired exposure to an index or market, a portfolio will be exposed to the same risks as are incurred in purchasing or selling the underlying instruments directly as well as additional risks associated with derivatives transactions, such as counterparty credit risk.

The use of certain derivatives transactions, including OTC derivatives, involves the risk of loss resulting from the insolvency or bankruptcy of the counterparty to the contract or the failure by the counterparty to make required payments or otherwise comply with the terms of the contract. In the event of default by a counterparty, a portfolio may have contractual remedies pursuant to the agreements related to the transaction, but there is no guarantee that the portfolio will be able to enforce such contractual remedies in a timely manner, or at all.

While some derivatives are cleared through a regulated central clearinghouse, many derivatives transactions are not entered into or traded on exchanges or in markets regulated by the CFTC or the SEC. Instead, such bi-lateral OTC derivatives are entered into directly by a portfolio and a counterparty. OTC derivatives transactions can only be entered into with a willing counterparty that is approved by the Adviser. Where no such counterparty is available, a portfolio will be unable to enter into a desired OTC transaction.

A portfolio may be required to make physical delivery of portfolio securities underlying a derivative in order to close out a derivatives position or to sell portfolio securities at a time or price at which it may be disadvantageous to do so in order to obtain cash to close out or to maintain a derivatives position.

As a result of the structure of certain derivatives, adverse changes in, among other things, interest rates, volatility or the value of the underlying instrument can result in losses substantially greater than the amount invested in the derivative itself. Certain derivatives have the potential for unlimited loss, regardless of the size of the initial investment.

Certain derivatives may be considered illiquid and therefore subject to a portfolio's limitation on investments in illiquid securities.

Derivatives transactions conducted outside the United States may not be conducted in the same manner as those entered into on U.S. exchanges, and may be subject to different margin, exercise, settlement or expiration procedures. Brokerage commissions, clearing costs and other transaction costs may be higher on foreign exchanges. Many of the risks of OTC derivatives transactions are also applicable to derivatives transactions conducted outside the United States. Derivatives transactions conducted outside the United States are subject to the risk of governmental action affecting the trading in, or the prices of, foreign securities, currencies and other instruments. The value of such positions could be adversely affected by foreign political and economic factors, lesser availability of data on which to make trading decisions, delays in a portfolio's ability to act upon economic events occurring in foreign markets, and less liquidity than U.S. markets.

Currency derivatives are subject to additional risks. Currency derivatives transactions may be negatively affected by government exchange controls, blockages and manipulations. Currency exchange rates may be influenced by factors extrinsic to a country's economy. There is no systematic reporting of last sale information with respect to foreign currencies. As a result, the available information on which trading in currency derivatives will be based may not be as complete as comparable data for other transactions. Events could occur in the foreign currency market that will not be reflected in currency derivatives until the following day, making it more difficult for a portfolio to respond to such events in a timely manner.

**OTC Options.** Unlike exchange-traded options, which are standardized with respect to the underlying instrument, expiration date, contract size and strike price, the terms of OTC options generally are established through negotiation between the parties to the options contract. Unless the counterparties provide for it, there is no central clearing or guaranty function for an OTC option. Therefore, OTC options are subject to the risk of default or non-performance by the counterparty to a greater extent than exchange-traded options.

**Additional Risks of Options Transactions.** The risks associated with options transactions are different from, and possibly greater than, the risks associated with investing directly in the underlying instruments. Options are highly specialized instruments that require investment techniques and risk analyses different from those associated with other portfolio investments. Options may be subject to the risk factors generally applicable to derivatives transactions described herein, and may also be subject to certain additional risk factors, including:

- The exercise of options written or purchased by a portfolio could cause a portfolio to sell portfolio securities, thus increasing a portfolio's portfolio turnover.
- A portfolio pays brokerage commissions each time it writes or purchases an option or buys or sells an underlying security in connection with the exercise of an option. Such brokerage commissions could be higher relative to the commissions for direct purchases of sales of the underlying securities.
- A portfolio's options transactions may be limited by limitations on options positions established by the SEC, the CFTC or the exchanges on which such options are traded.
- The hours of trading for exchange-listed options may not coincide with the hours during which the underlying securities are traded. To the extent that the options markets close before the markets for the underlying securities, significant price and rate movements can take place in the underlying securities that cannot be reflected in the options markets.
- Index options based upon a narrower index of securities or other assets may present greater risks than options based on broad market indexes, as narrower indices are more susceptible to rapid and extreme fluctuations as a result of changes in the values of a small number of securities or other assets.
- A portfolio is subject to the risk of market movements between the time that an option is exercised and the time of performance thereunder, which could increase the extent of any losses suffered by a portfolio in connection with options transactions.

**Foreign Currency Forward Exchange Contracts and Currency Futures.** A portfolio may enter into foreign currency forward exchange contracts. Unanticipated changes in currency prices may result in losses to a portfolio and poorer overall performance for a portfolio than if it had not entered into foreign currency forward exchange contracts. At times, a portfolio may also enter into "cross-currency" hedging transactions involving currencies other than those in which securities are held or proposed to be purchased are denominated. Forward contracts may limit gains on portfolio securities that could otherwise be realized had they not been utilized and could result in losses. The contracts also may increase a portfolio's volatility and may involve a significant amount of risk relative to the investment of cash. While a portfolio seeks to hedge against its currency exposures, there may be occasions where it is not viable or possible to ensure that the hedge will be sufficient to cover a portfolio's total exposure.

**Additional Risk of Futures Transactions.** The risks associated with futures contract transactions are different from, and possibly greater than, the risks associated with investing directly in the underlying instruments. Futures are highly specialized instruments that require investment techniques and risk analyses different from those associated with other portfolio investments. Futures may be subject to the risk factors generally applicable to derivatives transactions described herein, and may also be subject to certain additional risk factors, including:

- The risk of loss in buying and selling futures contracts can be substantial. Small price movements in the commodity underlying a futures position may result in immediate and substantial loss (or gain) to a portfolio.
- Buying and selling futures contracts may result in losses in excess of the amount invested in the position in the form of initial margin. In the event of adverse price movements in the underlying commodity, security, index, currency or instrument, a portfolio would be required to make daily cash payments to maintain its required margin. A portfolio may be required to sell portfolio securities, or make or take delivery of the underlying securities in order to meet daily margin requirements at a time when it may be disadvantageous to do so. A portfolio could lose margin payments deposited with a futures commodities merchant if the futures commodities merchant breaches its agreement with a portfolio, becomes insolvent or declares bankruptcy.
- Most exchanges limit the amount of fluctuation permitted in futures contract prices during any single trading day. Once the daily limit has been reached in a particular futures contract, no trades may be made on that day at prices beyond that limit. If futures contract prices were to move to the daily limit for several trading days with little or no trading, a portfolio could be prevented from prompt liquidation of a futures position and subject to substantial losses. The daily limit governs only price movements during a single trading day and therefore does not limit a portfolio's potential losses.
- Index futures based upon a narrower index of securities may present greater risks than futures based on broad market indexes, as narrower indexes are more susceptible to rapid and extreme fluctuations as a result of changes in value of a small number of securities.

**Warrants.** Warrants are equity securities in the form of options issued by a corporation that give the holder the right, but not the obligation, to purchase stock, usually at a price that is higher than the market price at the time the warrant is issued. A purchaser takes the risk that the warrant may expire worthless because the market price of the common stock fails to rise above the price set by the warrant.

**Rights.** A portfolio may purchase rights for equity securities. If a portfolio purchases a right, it takes the risk that the right might expire worthless because the market value of the common stock falls below the price fixed by the right.

**General Risks of Swaps.** A portfolio may enter into swaps directly or indirectly (including through Risk Premia Investments). The risks associated with swap transactions are different from, and possibly greater than, the risks associated with investing directly in the underlying instruments. Swaps are highly specialized instruments that require investment techniques and risk analyses different from those associated with other portfolio investments. The use of swaps requires an understanding not only of the underlying instrument but also of the swap contract itself. Swap transactions may be subject to the risk factors generally applicable to derivatives transactions described above, and may also be subject to certain additional risk factors. In addition to the risk of default by the counterparty, if the creditworthiness of a counterparty to a swap agreement declines, the value of the swap agreement would be likely to decline, potentially resulting in losses.

In addition, the U.S. government has enacted legislation that provides for new regulation of the derivatives market, including clearing, margin, reporting and registration requirements, which could restrict a portfolio's ability to engage in derivatives transactions or increase the cost or uncertainty involved in such transactions. The European Union (and some other countries) are implementing similar requirements, which will affect a portfolio when it enters into a derivatives transaction with a counterparty organized in that country or otherwise subject to that country's derivatives regulations.

For example, the U.S. government and the European Union have adopted mandatory-minimum margin requirements for OTC derivatives. The Adviser expects that a portfolio's transactions will become subject to variation margin requirements under such rules in 2017 and initial margin requirements under such rules in 2020. Such requirements could increase the amount of margin a portfolio needs to provide in connection with its derivatives transactions and, therefore, make derivatives transactions more expensive.

These and other new rules and regulations could, among other things, further restrict a portfolio's ability to engage in, or increase the cost to a portfolio of, derivatives transactions, for example, by making some types of derivatives no longer available to a portfolio or otherwise limiting liquidity. A portfolio may be unable to execute its investment strategy as a result. The costs of derivatives transactions are expected to increase as clearing members raise their fees to cover the costs of additional capital requirements and other regulatory changes applicable to the clearing members become effective. These rules and regulations are new and evolving, so their potential impact on a portfolio and the financial system are not yet known. While the new rules and regulations and central clearing of some derivatives transactions are designed to reduce systemic risk (i.e., the risk that the interdependence of large derivatives dealers could cause them to suffer liquidity, solvency or other challenges simultaneously), there is no assurance that they will achieve that result, and in the meantime, as noted above, central clearing and related requirements expose a portfolio to new kinds of costs and risks.

**Interest Rate Swaps, Caps, Floors and Collars.** A portfolio may enter into interest rate swaps, which do not involve the delivery of securities, other underlying assets or principal. Accordingly, the risk of loss with respect to interest rate and total rate of return swaps is limited to the net amount of interest payments that a portfolio is contractually obligated to make. A portfolio may also buy or sell interest rate caps, floors and collars, which may be less liquid than other types of swaps.

**Currency Swaps.** Currency swap agreements may be entered into on a net basis or may involve the delivery of the entire principal value of one designated currency in exchange for the entire principal value of another designated currency. In such cases, the entire principal value of a currency swap is subject to the risk that the counterparty will default on its contractual delivery obligations.

**Credit Default Swaps.** A portfolio may be either the buyer or seller in a credit default swap. As the buyer in a credit default swap, a portfolio would pay to the counterparty the periodic stream of payments. If no default occurs, a portfolio would receive no benefit from the contract. As the seller in a credit default swap, a portfolio would receive the stream of payments but would be subject to exposure on the notional amount of the swap, which it would be required to pay in the event of default. The use of credit default swaps could result in losses to a portfolio if the Adviser fails to correctly evaluate the creditworthiness of the issuer of the referenced debt obligation.

**Combined Transactions.** Combined transactions involve entering into multiple derivatives transactions instead of a single derivatives transaction in order to customize the risk and return characteristics of the overall position. Combined transactions typically contain elements of risk that are present in each of the component transactions. Because combined transactions involve multiple transactions, they may result in higher transaction costs and may be more difficult to close out.

**Other Instruments and Future Developments.** A portfolio may take advantage of opportunities in the area of swaps, options on various underlying instruments and swaptions and certain other customized "synthetic" or derivative investments in the future. In addition, a portfolio may take advantage of opportunities with respect to certain other "synthetic" or derivative instruments that are not presently available but that may be developed to the extent such opportunities are both consistent with a portfolio's investment objective and legally permissible for a portfolio.

Morgan Stanley does not render tax advice on tax accounting matters to clients. This material was not intended or written to be used, and it cannot be used with any taxpayer, for the purpose of avoiding penalties that may be imposed on the taxpayer under U.S. federal tax laws. Federal and state tax laws are complex and constantly changing. Clients should always consult with a legal or tax advisor for information concerning their individual situation.

The information contained herein may not be reproduced or distributed. This communication is only intended for and will only be distributed to persons resident in jurisdictions where such distribution or availability would not be contrary to local laws or regulations.

Index data is provided for illustrative purposes only. Indices do not include any expenses, fees or sales charges, which would lower performance. Indices are unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

**Hedge Fund Research, Inc. (HFRI) Equity Hedge Index.** The HFRI Equity Hedge Index consists of managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure and leverage employed.

**Dubai:** Morgan Stanley Investment Management Limited (Representative Office, Unit Precinct 3-7th Floor-Unit 701 and 702, Level 7, Gate Precinct Building 3, Dubai International Financial Centre, Dubai, 506501, United Arab Emirates. Telephone: +97 (0)14 709 7158)

**Germany:** Morgan Stanley Investment Management Limited Niederlassung Deutschland Junghofstrasse 13-15 60311 Frankfurt Deutschland (Gattung:Zweigniederlassung (FDI) gem. § 53b KWG)

**Italy:** Morgan Stanley Investment Management Limited, Milan Branch (Sede Secondaria di Milano) is a branch of Morgan Stanley Investment Management Limited, a company registered in the U.K., authorised and regulated by the Financial Conduct Authority (FCA), and whose registered office is at 25 Cabot Square, Canary Wharf, London, E14 4QA. Morgan Stanley Investment Management Limited Milan Branch (Sede Secondaria di Milano) with seat in Palazzo Serbelloni Corso Venezia, 16 20121 Milano, Italy, is registered in Italy with company number and VAT number 08829360968.

**The Netherlands:** Morgan Stanley Investment Management, Rembrandt Tower, 11th Floor Amstelplein 1 1096HA, Netherlands. Telephone: 31 2-0462-1300. Morgan Stanley Investment Management is a branch office of Morgan Stanley Investment Management Limited. Morgan Stanley Investment Management Limited is authorised and regulated by the Financial Conduct Authority in the United Kingdom.

**Switzerland:** Morgan Stanley & Co. International plc, London, Zurich BranchI Authorised and regulated by the Eidgenössische Finanzmarktaufsicht ("FINMA"). Registered with the Register of Commerce Zurich CHE-115.415.770. Registered Office: Beethovenstrasse 33, 8002 Zurich, Switzerland, Telephone +41 (0) 44 588 1000. Facsimile Fax: +41(0) 44 588 1074.

Swiss investors are advised that copies of the Prospectus, Key Investor Information Document, the Articles of Incorporation and the annual and semi-annual reports, in German, and further information can be obtained free of charge from the representative in Switzerland. The representative in Switzerland is Carnegie Fund Services S.A., 11, rue du Général-Dufour, 1204 Geneva. The paying agent in Switzerland is Banque Cantonale de Genève, 17, quai de l'Ile, 1204 Geneva.

**United Kingdom:** Authorised and regulated by the Financial Conduct Authority. Registered in England. Registered No. 1981121. Registered Office: 25 Cabot Square, Canary Wharf, London E14 4QA, authorised and regulated by the Financial Conduct Authority.

**Hong Kong:** This document has been issued by Morgan Stanley Asia Limited for use in Hong Kong and shall only be made available to "professional investors" as defined under the Securities and Futures Ordinance of Hong Kong (Cap 571). The contents of this document have not been reviewed nor approved by any regulatory authority including the Securities and Futures Commission in Hong Kong. Accordingly, save where an exemption is available under the relevant law, this document shall not be issued, circulated, distributed, directed at, or made available to the public in Hong Kong.

**Singapore:** This document may not be circulated or distributed, whether directly or indirectly, to persons in Singapore other than to (i) an accredited investor (ii) an expert investor or (iii) an institutional investor as defined in Section 4A of the Securities and Futures Act, Chapter 289 of Singapore ("SFA"); or (iv) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

**Australia:** This publication is disseminated in Australia by Morgan Stanley Investment Management (Australia) Pty Limited ACN: 122040037, AFSL No. 314182, which accepts responsibility for its contents. This publication, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act.

Explore our site at **www.morganstanley.com/im**



MSIM CRC 1978333 Exp. 1/2019 9135487_KC_0118
US