The Morningstar Style Box for Alternative Funds
A new research tool for cross-border alternative strategies.

Executive Summary
Many investors have turned to liquid alternative mutual funds as a way to increase the diversification of their overall portfolio and improve risk-adjusted returns. Alternative strategies, however, have far more flexibility than most traditional funds, which has led to heterogeneous groupings, even within Morningstar Categories. Fund names and category assignments give limited insight into the expected diversification benefit of a given strategy or how volatile a strategy could be in a given market environment. Yet diversification and volatility are two of the most important factors investors should consider when evaluating an alternative strategy and determining its fit within a portfolio of traditional investments. To make these factors more apparent, we are introducing the Morningstar Style Box for alternative funds. This style box is a graphical representation of a fund’s correlation and volatility relative to global equities, providing a quick and intuitive guide to whether a fund has matched its stated diversification goals and/or meets an investor’s personal goals for diversification.

Key Takeaways
- The Morningstar Style Box for alternative funds provides a quick, intuitive illustration of key diversification traits investors seek in alternative mutual funds.
- The alternatives style box is modeled after the well-known equity and fixed-income style boxes, but it is not based on underlying portfolio data.
- Instead, the alternatives style box’s axes are derived from correlation and relative volatility.
- Key use cases for the alternatives style box include identifying the diversification traits of a single fund, determining changing diversification patterns over time, and comparing two alternative funds side by side.
- Initially, the alternatives style box will be used as a research tool for Morningstar analysts and included in our published research; ultimately, it will be a data point and tool available in Morningstar products.
Introduction

Alternative strategies are a potentially useful tool for building well-diversified portfolios. These strategies are designed to provide low exposure and low correlation to traditional asset classes, primarily stocks and bonds, which could help smooth out returns and lower maximum drawdowns at the overall portfolio level. While that is an admirable goal, it is difficult to achieve, and alternative funds have had varied levels of success when it comes to differentiating return streams from traditional asset classes. Achieving such diversification is critical for alternative funds: If they offer only returns derived from beta (market) exposures, then investors are better off sticking with traditional investments, which will likely be much less expensive.

Yet investors lack a convenient means of quickly assessing these characteristics in a strategy and comparing it with peers. To remedy this state of affairs, we are introducing a new tool called the Morningstar Style Box for alternative funds (hereafter, the alternatives style box). By providing an easy-to-understand visual representation of an alternative fund’s diversification and volatility characteristics over time and versus peers, the alternatives style box allows for informed comparisons between funds running similar strategies and other liquid alternatives strategies in a single glance. Exhibit 1 shows the 100 largest European alternative funds with euro-denominated share classes grouped by category, as of the end of 2016.

Exhibit 1 The 100 Largest European Cross-Border Alternative Funds

How It Works
The alternatives style box has several key differences when compared with the Morningstar Style Boxes for equity and fixed income. Unlike the equity and fixed-income style boxes, the alternatives style box is not based on portfolio holdings. Portfolio data for alternative strategies is not always available or reliable given their heavy use of derivatives. Instead, alternative strategies are plotted on the style box based on historical performance characteristics, namely, correlation and volatility relative to a market-cap-weighted global equity index.

Interpreting the Alternatives Style Box
Interpreting the alternatives style box is relatively straightforward. The vertical axis measures a fund's correlation to the Morningstar Global Markets Index during the trailing three-year period using monthly return data. The horizontal axis represents what we are calling the fund's "relative volatility" compared with the same index during the same time. To calculate relative volatility, the fund's monthly standard deviation during the trailing three-year period is divided by the monthly standard deviation of the index during the same time period.

The closer a fund is to the top of the box, the higher its correlation to the global equity market has been during that particular time period. The further a fund is to the right of the box, the higher its volatility has been.
Exhibit 2 How the Morningstar Style Box for Alternative Funds Works

We divide the vertical axis into thirds. The upper bound of 1.0 indicates a fund that’s perfectly correlated with the global equity market.

We use 0.5 as the first break point. Investors shouldn’t take it as a hard rule that funds with correlations above 0.5 have a “high” correlation or that they don’t qualify as alternative funds. Many long/short equity funds, for example, have relatively high correlations because of their net long exposure. Those funds’ short exposures still represent an alternative investment strategy, but their roles in portfolios will be different than those of investments with lower correlations.

We use 0.0 as this axis’ second and final breakpoint. Funds that hover around this line essentially have no correlation with equity markets, so their performance patterns move relatively independent of the market’s movements.

Few funds have correlations with the global equity market of less than −0.50, so we cut off the y-axis at this point. We plot funds with correlations less than −0.50 on this line.

This horizontal axis represents funds’ relative volatility compared with the global equity market over a given time period. We divide the axis into thirds, at 33% relative volatility and 66% relative volatility. We measure relative volatility by dividing a fund’s standard deviation with that of the index’s.

Funds with less than one-third of the volatility of the global equity market exhibit more bond-like volatility. The Barclays Aggregate Bond Index, for example, has registered between 15% and 20% relative volatility over the last 15 years.

Funds with volatility more than two-thirds the volatility of the global equity market exhibit more stock-like behavior. These funds would likely be a poor substitute for a traditional bond allocation.

Source: Morningstar.
Why We Chose Global Equities as the Measuring Stick

In a traditional portfolio of long-only stocks and bonds, the key risk, measured by both volatility and potential maximum drawdown, comes from the equity portion of the portfolio. The overwhelming pull of stock market returns on a traditional portfolio was evident during the financial crisis. From the precrisis market peak in November 2007 through the market bottom in March 2009, a balanced 50/50 portfolio composed of the FTSE World Index and the Bloomberg- Barclays Euro Aggregate Bond Index had a maximum drawdown of around 25% in euro terms; the bond index's 6% return during that period wasn't nearly enough to make up for the stock market's 48% fall. Given that equities pose the predominant risk in traditional portfolios, it makes sense to first consider how well an alternative strategy diversifies away from that risk.

We are aware of other risks that investors may be looking to lower through diversification into alternatives, namely, interest-rate risk in fixed-income portfolios in the current low-rate environment. Yet we've found that many of the strategies that look to damp interest-rate risk, like non-traditional-bond and long-short credit funds, tend to do so by increasing equity-like risk. Avoiding unintended outcomes, such as trading the relatively lower risk posed by interest rates to fixed-income holdings for the potentially far greater risk in equities and more equity-sensitive securities like high-yield bonds, should lead to better long-term results for investors. By seeing a fund's correlation to global equities during a particular time period, investors will have a better understanding of what role that strategy could play in a portfolio.

Using a blended stock and bond benchmark would yield similar directional results for each fund when plotted in the alternatives style box, but, given the variety of individual portfolios, it might not be as informative for users.

Why Correlation?

A fund's correlation to the global equity market index shows how strong or weak a relationship with the its returns have exhibited with the index, a key concern when thinking about portfolio diversification. The closer an alternative fund's correlation is to 1.0 (the maximum achievable correlation), the stronger the relationship is between its returns and the returns of the global equity market. The closer the correlation is to negative 1.0, the closer the fund's returns are to having an inverse relationship, which means they would increase in value when global equities are down and vice versa.

Why Relative Volatility?

We use the fund's volatility (as measured by standard deviation) relative to the global equity market during a given time period. The amount of volatility a fund exhibits over time is an important factor for investors to consider. Absolute volatility, however, can vary greatly. The Morningstar Global Markets Index, for example, had a standard deviation of 31% based on weekly data in 2008 and 11% in 2013. Comparing a fund's volatility with global equities, likely the most volatile asset already in the portfolio, investors can more easily put the fund's volatility into the context of a larger portfolio. Other measures of risk, like value-at-risk and downside capture ratio, were considered and have their merits. Standard
deviation remains a widely accepted and straightforward (if imperfect) measure of risk. Moreover, the limitations of the transparency of the underlying portfolio data in many alternative mutual funds, which can rely heavily on derivatives, and our reluctance to rely on measures that could lead to performance-chasing, such as a fund’s downside-capture ratio during a period of relatively little downside like 2013, led us away from performance-based risk measures.

Why Not Beta?

A reasonable question to ask is why the style box does not use beta. Equity beta measures the amount of systematic risk a portfolio has compared with a broad market. A fund with a beta of 0.50 to the Morningstar Global Market Index would be expected to gain or lose roughly half the amount of the market plus or minus any alpha the strategy produces. It is a useful measure and one we consider regularly when analyzing liquid alternative funds to which we assign Morningstar Analyst Ratings.

It is important to know where a fund’s beta is coming from, though, as it is based on measures of both correlation and relative volatility. Recall that one version of the formula to calculate an asset’s beta is Correlation(a,b) * standard deviation of A / standard deviation of B. From that perspective, what we’ve done with the alternatives style box is essentially to decompose a fund’s equity beta. Exhibit 3 highlights why this is important.

<table>
<thead>
<tr>
<th></th>
<th>Fund A</th>
<th>Fund B</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std Dev</td>
<td>16</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Correlation</td>
<td>0.25</td>
<td>0.8</td>
<td>1</td>
</tr>
<tr>
<td>Beta</td>
<td>0.25</td>
<td>0.25</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Morningstar.

Fund A and Fund B both have the same beta of 0.25 to the equity market, but investors should have much different expectations for how either fund would behave on its own and within a larger portfolio. Fund A is just as volatile as the market but has a very low correlation to it, so its return pattern isn't going to look like the market's. Fund B, on the other hand, is a low-volatility strategy, but the direction of its returns is very dependent on which way the market goes.
Exhibit 4 shows the same two funds plotted in the alternatives style box.

**Exhibit 4 Two Funds With Equal Beta**

By breaking apart the two components of equity beta, investors get a more granular look at a fund’s performance characteristics.

**Morningstar Medalists**

As of the end of 2016, nine alternative funds with euro-denominated share classes with a three-year history were Morningstar Medalists. Morningstar Medalists are funds that we have thoroughly researched and are confident will outperform peers or relevant benchmarks over the long term. Exhibit 5 shows where each Medalist is positioned in the alternatives style box as of the end of the year.
The style box reveals differences between the three strategies in their correlations and relative volatility.

Nicolas Walewski, the lead manager of Alken Absolute Return Europe, can have a net equity exposure between negative 20% and positive 80% in his fund, and in the three-year period ended December 2016, the fund's correlation with the global equity market has been at around 0.5. Anima's two funds, managed by Lars Schickentanz, also typically tend to see some correlation with the equity market as the fund combines three performance drivers: a book of long positions in European stocks, a pair trades bucket, and a dynamic sleeve of short positions on sector and broad index futures to calibrate the fund's net equity exposure.

In contrast, the managers of BSF (BlackRock Strategic Fund) European Absolute Return move in a tighter net equity exposure range between negative 10% and positive 20%, which in part has led to the fund's low correlation with the equity market.

On the left side of the alternatives style box, funds exhibit relatively low volatility but not necessarily low correlation with the equity market. BlackRock Strategic Funds (BSF) Fixed Income Strategies, run by Michael Krautzberger, falls into the debt-arbitrage category. Krautzberger can invest across the global...
fixed-income spectrum with a maximum volatility level of 5%, although typically the manager has kept the fund's volatility between 1% and 3%.

Multistrategy funds provide exposure to different types of asset classes such as debt strategies, equity strategies, event-driven strategies, and global derivatives. Because of this ability to tap into multiple asset classes, the fund's mandate and weighting of each strategy sleeve will determine the fund's correlation to global equities and relative volatility. Two Morningstar Medalist funds fall into this category: Standard Life Investments Global Absolute Return Strategy and Deutsche Concept Kaldemorgen.

SLI Global Absolute Return Strategy has a gross return target of Euribor+5% over rolling three-year periods. The strategy taps into four broad sources of return, trying to exploit risk premiums, directional trades, relative value pair trades, and security selection. The combination of directional trades, pair trades, and security-selection sleeves gives the fund a higher correlation to global equities. This correlation to global equities, along with its target volatility between 4% and 8%, also makes it a more volatile option than funds targeting lower levels of market risk such as BSF European Absolute Return.

As its position in the style box indicates, the volatility limits of Deutsche Concept Kaldemorgen are more relaxed than at most of the other medalist strategies. The fund, which is run by veteran manager Klaus Kaldemorgen, aims to keep annual standard deviation below 10%. Its return target is two thirds of global equity markets, and the fund has seen a higher correlation with equity markets than any of the other medalist funds.

Use Cases: How to Use (and Not to Use) the Alternatives Style Box
The alternatives style box is not intended to be an all-in-one solution for choosing alternative funds. It is intended to be a supplementary tool that enables investors to more easily compare funds within a category and to get a sense of how a fund could affect a larger portfolio. It is still important to consider the quality of the management team, the underlying process, the expected returns, and the stated objectives of the strategy. It is also key to make sure it is being offered at a reasonable, if not low, price relative to peers.

In what follows, we provide examples of various circumstances and situations in which the alternatives style box can provide useful insights to investors. These examples are not comprehensive, but they showcase some of the most common quandaries that may arise when researching alternative funds and the answers the style box can help provide.

Use Case: Finding the Right Alternatives Type for Your Portfolio
Liquid alternative mutual funds tend to fall into one of two broad camps: strategies that take on equity market risk and hedge against the downside and strategies that are generally uncorrelated to risk assets. Either of those broad strategies could be a way to damp down a portfolio's overall volatility, but investors would probably use each differently. A strategy that is solely hedging equity market risk, like a
long-short equity fund, is likely suitable only as a replacement for some portion of the long-only equity part of the portfolio. A strategy with low correlation is more likely to be funded from multiple asset classes in the portfolio. While there is a lot of dispersion among funds within a category, a category’s position on the alternatives style box gives a general starting point for selecting the type of alternative funds that fits a portfolio best. Exhibit 6 shows a selection of alternative categories’ average positions in the style box.

**Exhibit 6 Alternative Category Averages for Selected Categories**

![Diagram showing correlation and relative volatility for selected alternative categories.](chart)


On average, the biggest difference between categories is the relative volatility. Debt arbitrage and market-neutral equity strategies tend to fall on the lower end of the relative volatility scale, while systematic-futures strategies are among the most volatile.

Market-neutral equity funds make equal long and short bets on equities, which eliminates most equity beta. This should lead to returns that are based more on stock selection, that is, long positions outperforming short positions, rather than how the overall market is performing. The equal long and short positions also lead to the lower overall volatility profile for most funds in the category exhibit. At the more extreme end of the relative volatility scale are systematic-futures funds. Systematic-futures funds follow trends and can go long and short a variety of asset classes. The ability to capture negative momentum in risk assets can be helpful for systematic-futures funds when equity markets go south.
Use Case: Changing Risk Profiles

It is important to note that a fund’s correlation and volatility levels are not likely to remain static over long periods. For one thing, managers of liquid alternative mutual funds can be very active in shifting the portfolio to alter exposure levels. For another, even if the portfolio holdings and exposures are stable, the ever-evolving market environment could cause the fund to react differently under various circumstances. What that means is that investors should consider how a fund’s correlation and relative volatility characteristics have changed over time.

Exhibit 7 shows how the positioning of long-short equity fund Amina Star Europa Alto Potenziale in the alternatives style box has changed in the five-year period ended 31 Dec 2016. Each dot represents where the fund would have landed based on rolling quarterly three-year trailing data during that time period. The larger the bubble, the more recent the data.

Exhibit 7 Style Trail of Amina Star Europa Alto Potenziale

The fund’s net equity exposure has a fairly wide range of between 10% and 40%, but the manager aims to keep the fund’s volatility between 5% and 6%. However, as the alternatives style box shows over the past five years, changes in the stock market’s volatility lead to shifts in the fund’s relative volatility.

Use Case: Comparing Funds in the Same Category

In addition to viewing a fund’s own history, it is also a useful to compare funds against peers in the same category. Exhibit 8 shows the Amina fund from the previous example and BlackRock Strategic Funds European Absolute Return’s trailing alternatives style box positions using the same methodology as the previous example over the past five years.
Even though both these funds fall into the long-short equity -- Europe Morningstar Category, the alternatives style box makes clear how the funds have differed in terms of both relative volatility and correlation to global equities over time. Both of these factors could have an impact on how an investor would think about using the funds in the broader context of a portfolio. For example, the lower relative volatility of the BlackRock fund might make the fund more attractive as an alternative to lower-quality fixed-income, which tends to be more volatile than investment-grade fixed-income. The Anima fund's relatively high volatility makes it more suitable as an alternative to equities.

**Conclusion**

We are introducing the Morningstar Style Box for alternative funds to help investors assess the diversification benefits of alternative funds and easily distinguish between them on this basis. Unlike Morningstar's traditional style boxes, this one is not based on portfolio-based metrics but on correlation to equity markets and a concept we have labeled **relative risk**. In developing the style box, we have attempted to straddle the demands of simplicity--to make a tool that will be quickly intuitive to users--while also capturing key traits of alternative funds that are important to investors. The alternatives style box should not be considered a comprehensive tool for performing due diligence on alternative funds--rather, it is a starting point, useful for screening and making comparisons.

This paper has outlined several important use cases for the alternatives style box. Over time, we plan to publish additional papers that will make more-intensive use of the style box, such as studies of alternatives asset allocation and category deep dives. Eventually, the alternatives style box will be a data point and tool within Morningstar products, where individual users will have the ability to use the style box for their own research purposes, including the ability to customize inputs and time periods.
About Morningstar Manager Research

Morningstar Manager Research provides independent, fundamental analysis on managed investment strategies. Analyst views are expressed in the form of Analyst Ratings, which are derived through research of five key pillars—Process, Performance, Parent, People, and Price. A global research team issues detailed analyst reports on strategies that span vehicle, asset class, and geography.

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