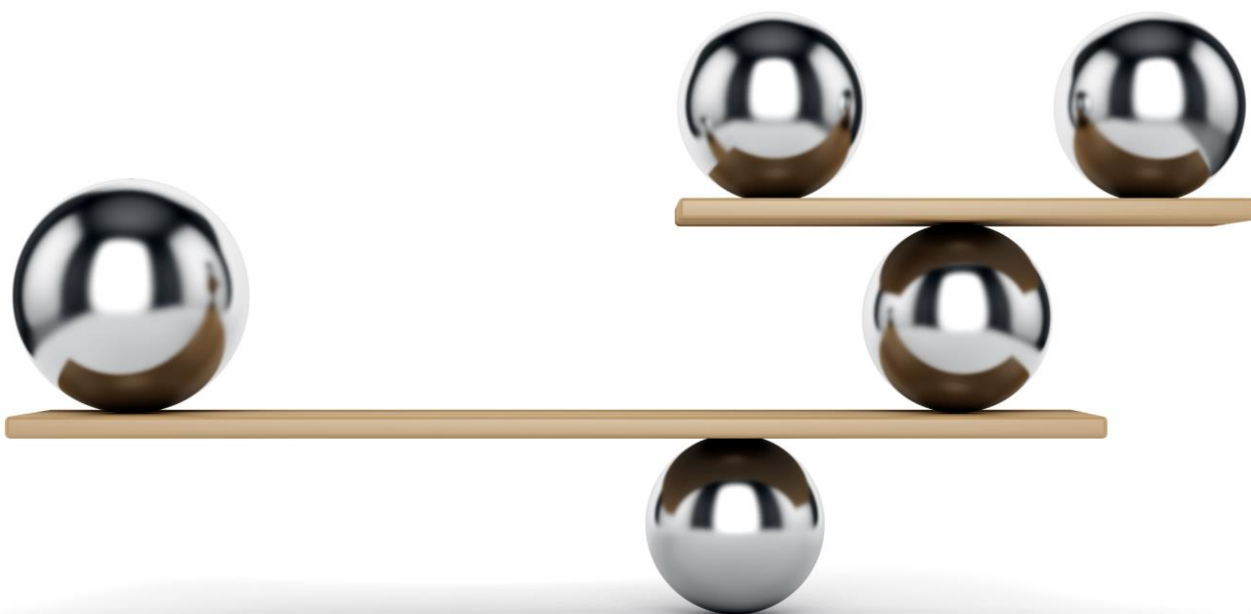
Hedge funds for the future

Evaluating hedge fund performance in the decade since the global financial crisis



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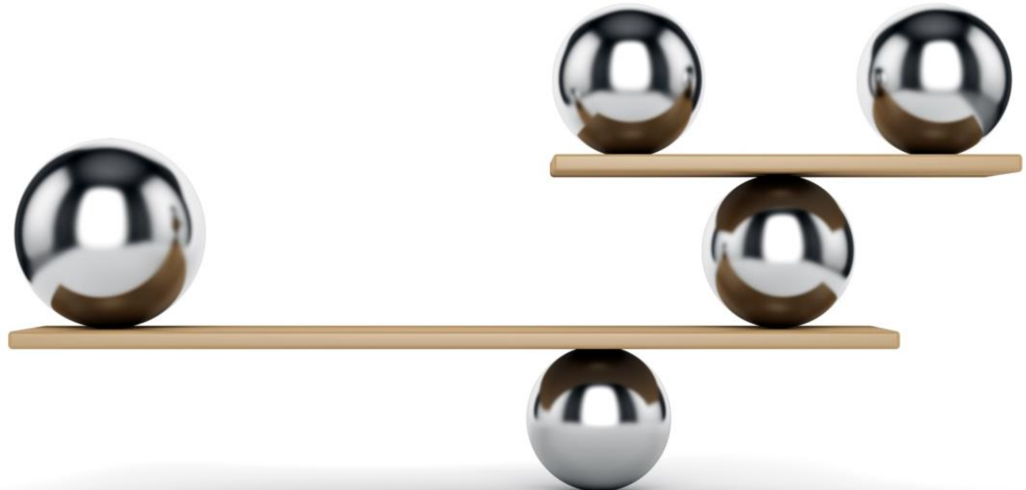

Hedge funds for the future

Evaluating hedge fund performance in the decade since the global financial crisis

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Over the past decade and a half, hedge funds have become commonplace in institutional investors' portfolios. During that time, Russell Investments has been working with its clients to implement and monitor hedge fund portfolios; however, the hedge funds that we are evaluating today in investors' portfolios are not the same as they were 10 or 15 years ago. As hedge funds have grown in asset size and their investor changed to include more institutional investors, Russell Investments has observed many managers increasing their emphasis on operational structure, risk management procedures, transparency, counter party risk and leverage.

The evaluation set forth in this paper is meant to assess hedge funds as they exist today: strategies that are meant to provide a reasonable level of return, a high level of alpha and a low level of volatility, by utilizing a variety of investment instruments (e.g., stocks, bonds, futures, forwards) and shorting (i.e., the hedge).

Introduction

Has hedge fund performance "disappointed"?

Comparing the performance of a diversified hedge fund portfolio to public equity over the last decade has led some investors to question the role of their portfolios. After all, hedge funds are expensive, potentially illiquid and lack transparency. A few large, prominent and publicly visible (by law) institutional investors have made the decision to entirely redeem from hedge funds in recent years, as highlighted by industry press.

What should investors think about diversified hedge fund portfolio performance? More important, going forward, does an allocation to diversified hedge funds continue to be worthwhile? This evaluation will first seek to level-set performance expectations for diversified hedge fund portfolios using a holistic risk/return objective framework and then provide guidance to determine the role of hedge funds going forward. In the evaluation, three key points will become apparent:

1. **Fees matter…a lot.** In fact, fee structure is make-or-break in terms of success.
2. **The time period matters.** While the last five years have been challenging for hedge fund performance, the prior five years saw results that were above expectations.
3. Hedge funds can, and do, play an important role of **downside protection with upside participation**, but you need the latter to justify the former.

What should investors think about diversified hedge fund portfolio performance? More important, going forward, does an allocation to diversified hedge funds continue to be worthwhile?

The decade since the Global Financial Crisis

It has been a decade since the 2008-2009 Global Financial Crisis (GFC) when long-standing banking institutions such as Bear Stearns and Lehman Brothers collapsed, and publicly traded equity performance was hard hit with the MSCI World Index declining over 40% in 2008.[1] The aftermath was that many institutional investors saw large declines in portfolio values, liquidity became an issue and individual investors lost significant retirement savings, which took years to recoup (almost four years for global public equity, assuming no withdrawals[2]). All of the equity portfolio gains of the prior years (2003-2007) were wiped out by the GFC, and then some.

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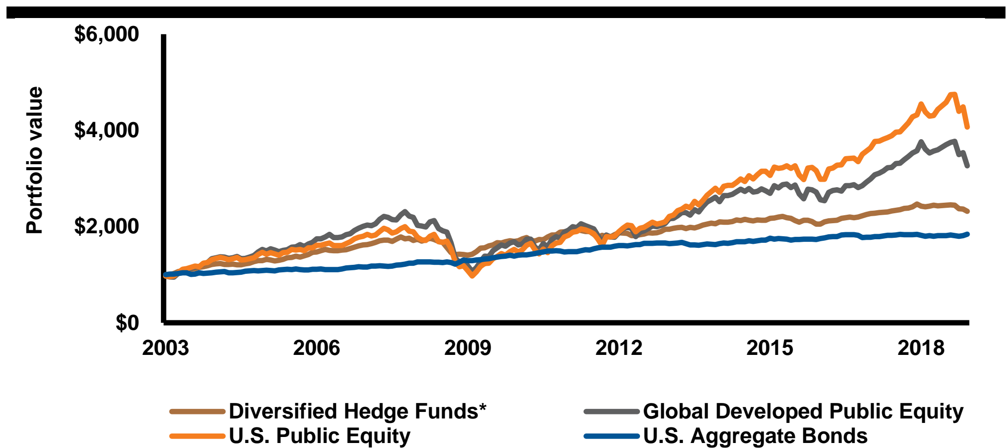
Since the GFC, public equity markets have experienced strong performance, which, coupled with historically low-volatility, has resulted in significant portfolio gains. Over the decade since the GFC, global public equity (MSCI World Index) returned 9.7% per annum while a diversified hedge fund portfolio[3] returned 5.0% per annum (net of fees). This means that for investors who were able to leave their money untouched, $1,000 invested in global developed public equity on January 1, 2003 grew to almost $3,300 by December 31, 2018, while a diversified hedge fund portfolio grew to $2,300. A portfolio of U.S. public stocks touched a high of over $4,500 before the public equity market decline in the fourth quarter of 2018. In other words, diversified hedge funds, global developed public equity and U.S. public equity more than doubled, tripled and quadrupled, respectively, over the last 16 years.

Exhibit 1: Growth of $1,000 from January 2003 to December 2018



Source: HFRI, MSCI, FTSE Russell, Bloomberg Barclays

Level-setting hedge fund performance expectations

Risk/return objective framework

Despite short-term performance comparisons made in the press (and a million-dollar bet won by Warren Buffet[4]), Russell Investments takes the view that a direct comparison to long-only public market returns, such as the S&P 500 Index, is not the way to evaluate hedge fund performance. Rather, performance should be evaluated using a risk/return framework. When working with clients to assess results for a diversified hedge fund portfolio, Russell Investments generally utilizes the following combination of risk and return objectives.

Since the GFC, public equity markets have experienced strong performance, which, coupled with historically low-volatility, has resulted in significant portfolio gains.

Diversified hedge fund portfolio risk/return objectives:

1	**Objective 1** Annualized returns between global public equity and aggregate bonds **combined with** volatility closer to that of aggregate bonds
2	**Objective 2** Returns in the range of LIBOR +3-5% over a market cycle
3	**Objective 3** Downside protection when public equity market returns are negative combined with participation in positive returning markets
4	**Objective 4** Beta of 1/3 relative to public equity markets
5	**Objective 5** Sharpe Ratio at least equal to public equity (i.e., better risk adjusted returns)

Objective 1 is critical. If it is missed, and diversified hedge funds underperform aggregate bonds, an investor would have had superior diversification and downside protection investing in an aggregate bond portfolio, which would have provided correlation and beta of around zero to global developed public equity markets.

Four time periods as described in Exhibit 2 are used in the evaluation. Though the focus here is post-GFC, the five years before the GFC are also included. The use of specific time periods allows for consideration of the market conditions that drove performance and how they have changed over time. Performance specific to the GFC will be covered as a part of objective 3.

Exhibit 2: Evaluation time-periods

10 years ending December 31, 2018	Post-GFC period: 2009-2018
5 years ending December 31, 2018	Most recent five-year period, Includes negative equity market return of 2018
5 years ending December 31, 2013	Previous five-year period, Post-GFC equity bull market
5 years ending December 31, 2007	Pre-GFC equity bull market
10 years ending December 31, 2018	Post-GFC period: 2009-2018

Defining a diversified hedge fund portfolio

The HFRI® Fund Weighted Index is used to represent the performance of a diversified hedge fund portfolio in this evaluation. This index provides a net-of-fee track record for hedge funds diversified across the major hedge fund strategies: equity hedge, event driven, relative value and global macro. When working with clients on the construction of a diversified hedge fund portfolio, Russell Investments will generally advise inclusion of all four of these broad strategies, the weights of which will depend on a client's specific objectives. A higher return and risk objective (i.e., closer to that of public equity than bonds) would lead to a portfolio that has a larger allocation to strategies with higher equity beta, such as equity long/short and event driven. A lower return and risk objective (i.e., a more defensive portfolio) would lead to a portfolio with higher allocations to relative value and global macro strategies.

Institutional hedge fund investors generally use one of three portfolio implementation approaches: fund-of-one, commingled fund-of-fund and direct investment. There are benefits and drawbacks to each approach; the exploration of such is beyond the scope of this evaluation. For this evaluation, two implementation cost structures were considered: a 0.75% flat-fee characteristic of a fund-of-one and a "1% and 10%" fee structure characteristic of a commingled fund-of-fund.

Over the decade since the GFC (10 years ending December 31, 2018), using a 0.75% implementation fee assumption, a hypothetical diversified hedge fund portfolio (as measured by the HFRI® Fund Weighted Index) met all five risk/return objectives.

Performance evaluation

Summary of performance versus objectives

Over the decade since the GFC (10 years ending December 31, 2018), using a 0.75% implementation fee assumption, a hypothetical diversified hedge fund portfolio (as measured by the HFRI® Fund Weighted Index) met all five risk/return objectives. However, the post-GFC experience was split with all objectives met over the five years ending December 31, 2013, but only two objectives met over the most recent five years ending December 31, 2018. Exhibit 3 provides an overview of which objectives were met over which time periods.

Exhibit 3: Implementation cost assumption – 0.75% flat-fee characteristic of a fund-of-one

		10 YEARS ENDING DEC 31, 2018	5 YEARS ENDING DEC 31, 2018	5 YEARS ENDING DEC 31, 2013	5 YEARS ENDING DEC 31, 2007	SUCCESS VERSUS OBJECTIVE OVER TIME PERIODS
1	Annualized returns between aggregate bonds and global developed public equity combined volatility closer to that of aggregate bonds	Y	N	Y	Y	3 out of 4
2	Returns between LIBOR +3-5%	Y	N	Y	Y	3 out of 4
3	Negative versus positive equity market capture	Y	Y	Y	Y	4 out of 4
4	Beta of about 1/3 relative to public equity markets	Y	Y	Y	N	3 out of 4
5	Sharpe Ratio at least equal to public equity	Y	N	Y	Y	3 out of 4
	Success versus Objectives for Time Period	5 out of 5	2 out of 5	5 out of 5	4 out of 5	

For illustrative purposes only.

The level of implementation fee can be material in determining whether hedge fund results were successful. When shifting to a 1% and 10% implementation cost assumption[5] in Exhibit 4, only three of the objectives were met over the 10-year period and the critical first objective was missed even though the hypothetical diversified hedge fund portfolio returned 3.60% versus U.S. aggregate bonds, which returned 3.48%. An additional 0.12% per annum arguably is not a reasonable premium over aggregate bonds. In contrast, under the 0.75% implementation cost structure, the diversified hedge fund portfolio returned 0.72% over bonds per annum. It is notable that in the five years post-GFC all five objectives were still met with this cost structure. The underperformance for the entire period was determined by the recent five-year period.

The level of implementation fee can be material in determining whether hedge fund results were successful.

Exhibit 4: Implementation cost assumption – 1% and 10% fee structure characteristic of a commingled fund-of-fund

		10 YEARS ENDING DEC 31, 2018	5 YEARS ENDING DEC 31, 2018	5 YEARS ENDING DEC 31, 2013	5 YEARS ENDING DEC 31, 2007	SUCCESS VERSUS OBJECTIVE OVER TIME PERIODS
1	Returns between aggregate bonds and global developed public equity combined with bond-like volatility	N	N	Y	Y	2 out of 4
2	Returns between LIBOR +3-5%	N	N	Y	Y	2 out of 4
3	Negative versus positive equity market capture	Y	Y	Y	Y	2 out of 4
4	Beta of about 1/3 relative to public equity markets	Y	Y	Y	N	3 out of 4
5	Sharpe Ratio at least equal to public equity	Y	N	Y	N	2 out of 4
	Success versus Objectives for Time Period	3 out of 5	2 out of 5	5 out of 5	3 out of 5	

For illustrative purposes only.

The following sections will provide the details of the results versus each of the objectives using the 0.75% implementation cost assumption.

Details of evaluation versus each objective

1

Objective 1

Annualized returns between global public equity and aggregate bonds **combined with** volatility closer to that of aggregate bonds

Objective 1 met?

This objective was met in three of the four time periods.

This two-part objective is arguably what earns diversified hedge funds their place in a portfolio; it is the active management outcome for which investors pay hedge fund fees. **Over the 10-year post-GFC period, the diversified hedge fund portfolio returned 4.2% per annum net of all fees (underlying hedge fund and implementation). That compares to a return of 3.5% for U.S. aggregate bonds and 9.7% per annum for global developed public equity**. The diversified hedge fund portfolio standard deviation of 5.0% was much closer to that of U.S. aggregate bonds (2.8%) than to global developed public equity (14.3%).

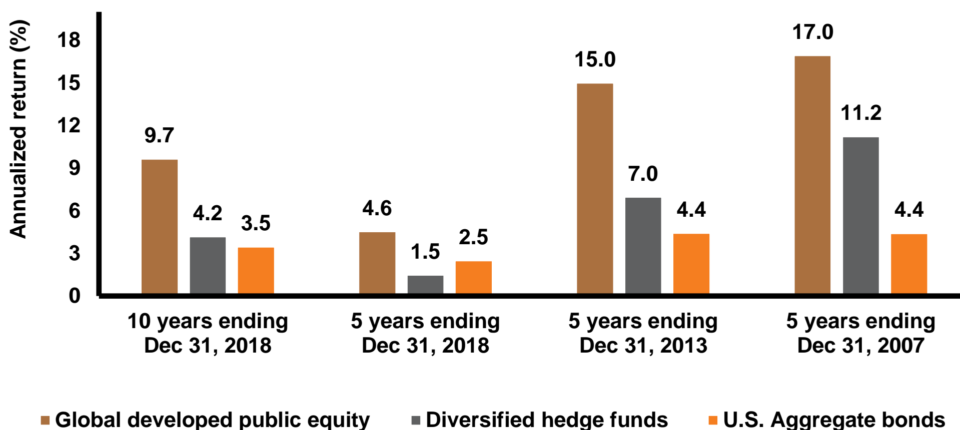
For the five-year periods, success versus this objective was split. **Over the five years post-GFC, the objective was met** as diversified hedge funds returned 7.0% per annum relative to the U.S. aggregate bond return of 4.4% and the global developed public equity return of 15.0%. However, **over the five years ending December 31, 2018, this objective was missed** as the diversified hedge fund portfolio returned 1.5% per annum underperforming U.S. aggregate bonds.

Pre-GFC performance of diversified hedge funds was strong with a return of 11.2% per annum relative to a 4.4% return for U.S. aggregate bonds and 17.0% per annum for global developed public equity.

Over all time periods, volatility was much closer to that of U.S. aggregate bonds than to that of global developed public equity as shown in Exhibit 6.

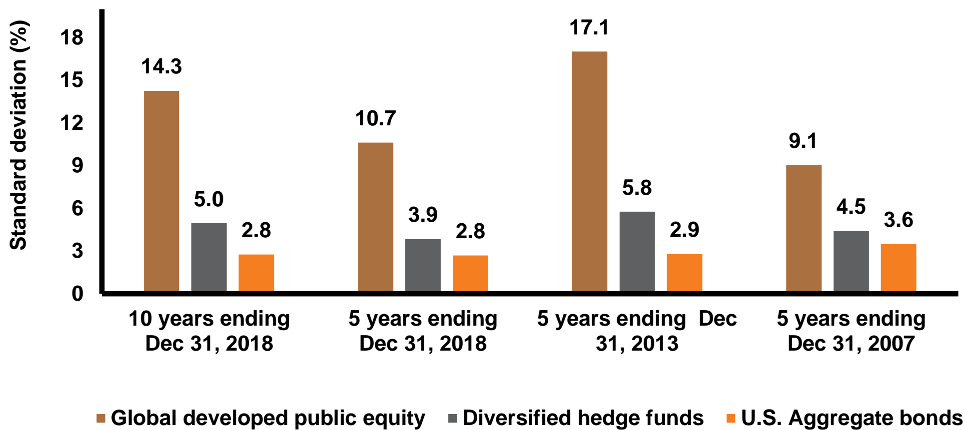
Over the five years post-GFC, the objective was met…over the five years ending December 31, 2018, this objective was missed…

Exhibit 5: Annualized return comparison



Source: HFRI, MSCI, Bloomberg Barclays. For illustrative purposes only.

Exhibit 6: Annualized standard deviation comparison



Source: HFRI, MSCI, Bloomberg Barclays. For illustrative purposes only.

2

Objective 2

Returns between LIBOR +3-5%

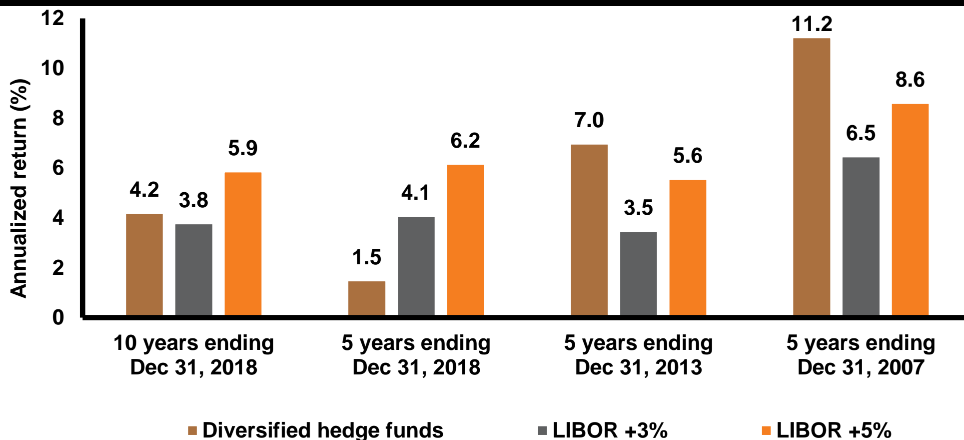
A LIBOR return hurdle is used both by some commingled fund-of-funds to determine performance fees and by investors as a policy return objective. Hedge funds met this objective over the full 10-year post GFC period.

Again, for the five-year periods, success versus this objective was split. Diversified hedge funds outperformed the high-end of the range for the post-GFC period but underperformed over the five years ending December 31, 2018.

Objective 2 met?

This objective was met in three of the four time periods.

Exhibit 7: Annualized returns versus LIBOR +3-5%



Source: HFRI & LIBOR. For illustrative purposes only.

3

Objective 3

Protection when public equity market returns are down combined with participation in up markets

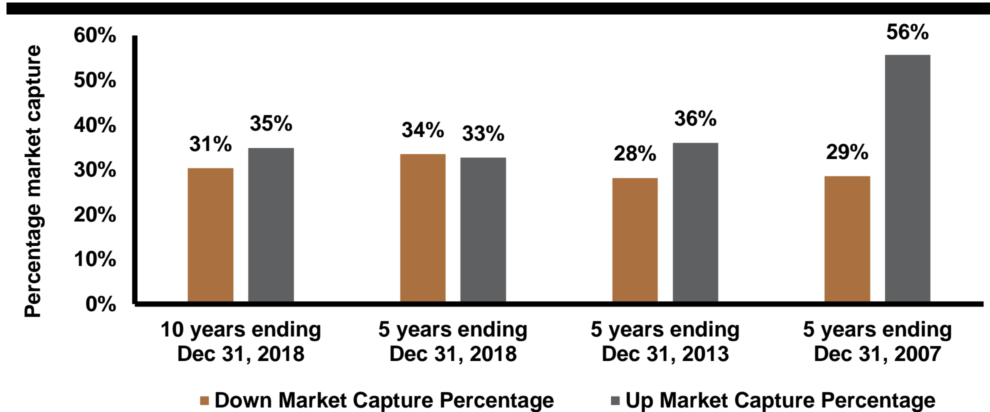
Objective 3 met?

This objective was met in all four time periods.

This objective is evaluated by comparing percentage of down-market capture to percentage of up-market capture. Down market capture is calculated by dividing the average return for hedge funds in months when the global developed public equity return is negative by the average return for global public equity in those same months. Ideally, down equity market capture is close to, or lower than, up market capture. Using this criterion, hedge funds met this objective over all four time periods.

Using this criterion, hedge funds met this objective over all four time periods.

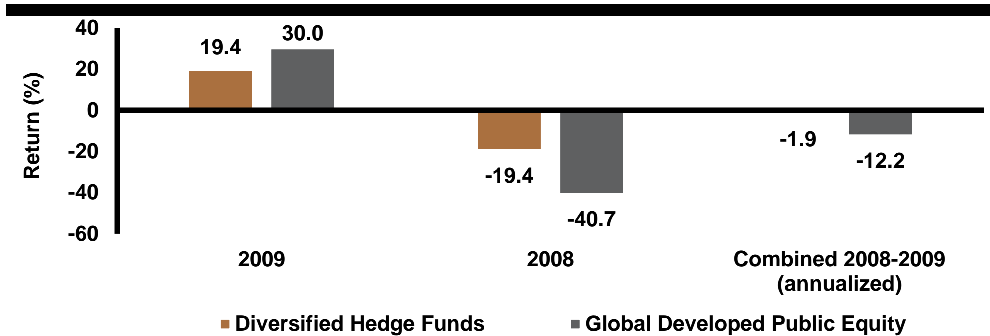
Exhibit 8: Down and up market capture



Source: HFRI & MSCI. For illustrative purposes only.

Additionally, this objective can be evaluated using specific periods of negative public equity market performance such as the GFC and 2018. During the GFC, when the global developed public equity market return was sharply negative at -40.7%, diversified hedge funds experienced a return of -19.4%. In the 2009 rebound, global developed public equity returned 30.0% relative to 19.4% for diversified hedge funds. The benefit of this down-market protection extended into the rebound, as over the full 2008-2009 period, diversified hedge funds outperformed global developed public equity, returning -1.9% relative to a global public equity return of -12.2%.

Exhibit 9: 2008-2009 Performance: GFC and rebound



Source: HFRI & MSCI. For illustrative purposes only.

In 2018, global developed public equity experienced its worst annual return since 2008, dropping -8.7%. Hedge funds returned -4.5% experiencing about half of the drop. Aggregate bond returns were flat. When performance bounced back in the first quarter of 2019, global developed public equity returned 12.5%, diversified hedge funds returned 5.4% and aggregate bonds returned 2.9%.[6]

4 Objective 4

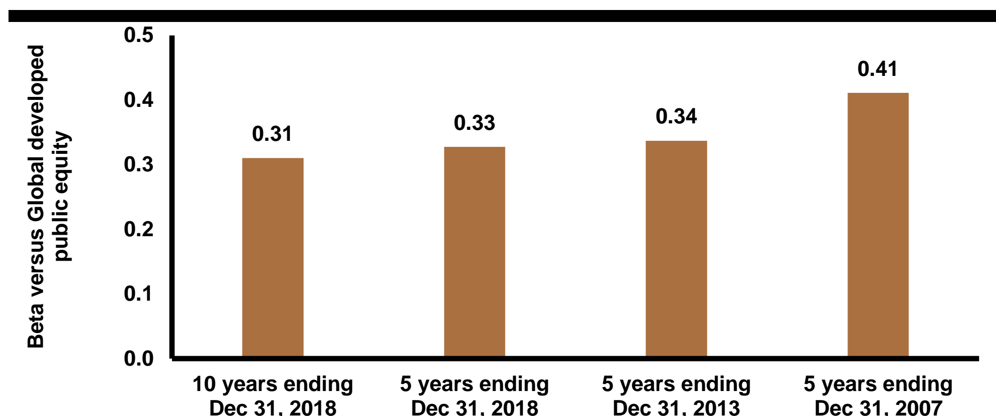
Beta of about 1/3 relative to public equity markets

Objective 4 met?

This objective was met in three of the four time periods.

While at the high-end of the range, diversified hedge funds met this objective in three of the four time-period observations, missing in the pre-GFC time period.

Exhibit 10: Beta to global developed public equity



Source: HFRI & MSCI. For illustrative purposes only.

Beta can also be utilized to calibrate a return expectation relative to public equity. For instance, if the expectation is that diversified hedge funds will have a beta of around 1/3 of equity markets, then performance should be expected to be around 1/3 of public equity markets. Over the 10 years post-GFC, since global developed public equity returned 9.7% per annum, diversified hedge funds with a beta expectation (or actual beta in this case) of around 1/3 should result in a return expectation of 3.2%. Diversified hedge funds outperformed this calibrated expectation by returning 4.2% per annum.[7]

Beta versus correlation

Russell Investments prefers to use beta rather than correlation when assessing the performance of diversified hedge funds since movement in the same direction as public equity markets should be expected when equity-based strategies (e.g., equity hedge and event driven) constitute a significant portion of the hedge fund allocation. The calculation of beta makes an important distinction of including the magnitude of the movement of returns as well as the direction.

Uncorrelated versus low correlation versus diversification

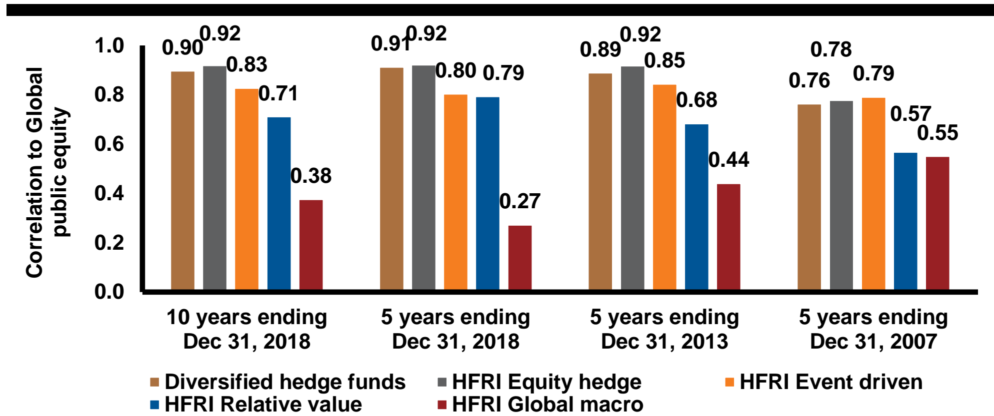
An objective of returns that are **uncorrelated** to public equity markets was not included in this evaluation. Exhibit 11 shows that HFRI® Fund Weighted Composite Index correlations to public equity have been around 0.8-0.9 historically and closer to 0.9 in the more recent time-period observations. If achieving uncorrelated returns is an objective that investors wishes to pursue, then their hedge fund portfolios should be tailored to invest in strategies that are expected to be uncorrelated to public equity markets (e.g., global macro) and they should be prepared to

hold tight through possible long periods of low relative performance. Alternatively, an objective of uncorrelated returns can be achieved simply and relatively inexpensively by investing in aggregate bonds.

An objective of **low correlation** can be sought by constructing a hedge fund portfolio that emphasizes strategies such as relative value and global macro. Again, lower returns in times of strong public equity market performance should be expected.

Finally, an objective of **diversification** versus public equity can be assessed using the risk/return framework contained within this evaluation.

Exhibit 11: Hedge fund strategy correlation to global developed public equity



Source: HFRI & MSCI. For illustrative purposes only.

5

Objective 5

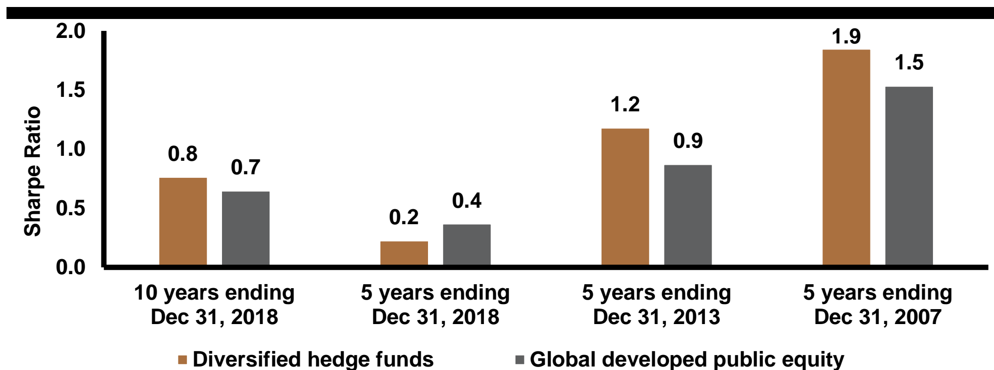
Higher Sharpe Ratio than public equity (better risk adjusted returns)

Objective 5 met?

This objective was met in two of the four time periods.

Evaluation of Sharpe Ratio in isolation is not recommended, as at some point a low return is disadvantageous regardless of the low level of risk. As one client succinctly likes to state, “You cannot eat your Sharpe Ratio.” Again, this objective was met in the full 10-year period, exceeding over the five years post-GFC and missing over the most recent five-year period.

Exhibit 12: Sharpe Ratio comparison



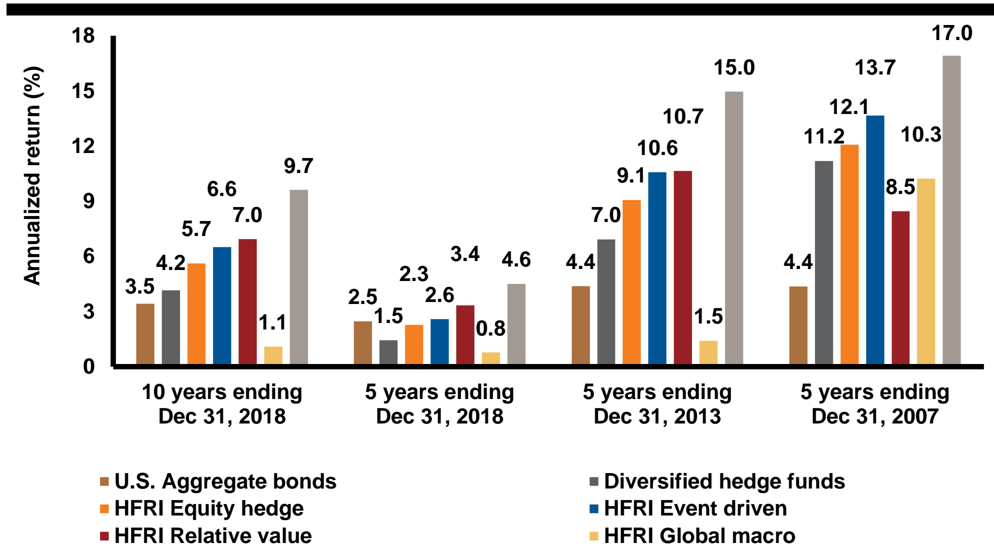
Source: HFRI & MSCI. For illustrative purposes only.

Conclusions

Why the split in performance over the five years periods?

- The downside protection provided by hedge funds versus global developed public equity during the GFC translated into higher cumulative returns for the years after.
- Market dislocations and volatility created by the GFC and its aftermath created an abundance of opportunities for hedge funds; those that were able to survive the GFC took advantage of those opportunities, leading to strong returns. Hedge fund investors were able to “back up the truck” so to speak.
- Public equity return volatility over the last five years has been historically low, weighing down on active management in general.
- Strategy selection has been a factor as there has been some differentiation in strategy performance, with global macro falling well behind equity long/short, event driven and relative value since the GFC (see Exhibit 13). Hedge fund portfolios that de-emphasized global macro in favor of other strategies may have met the stated objectives over the most recent five-year period.
- In the pre-GFC time period, diversified hedge fund beta to global developed public equity was higher than it was in the post-GFC time-period. Therefore, returns closer to equity than bonds should have been expected in the pre-GFC period.

Exhibit 13: Hedge fund strategy performance comparison

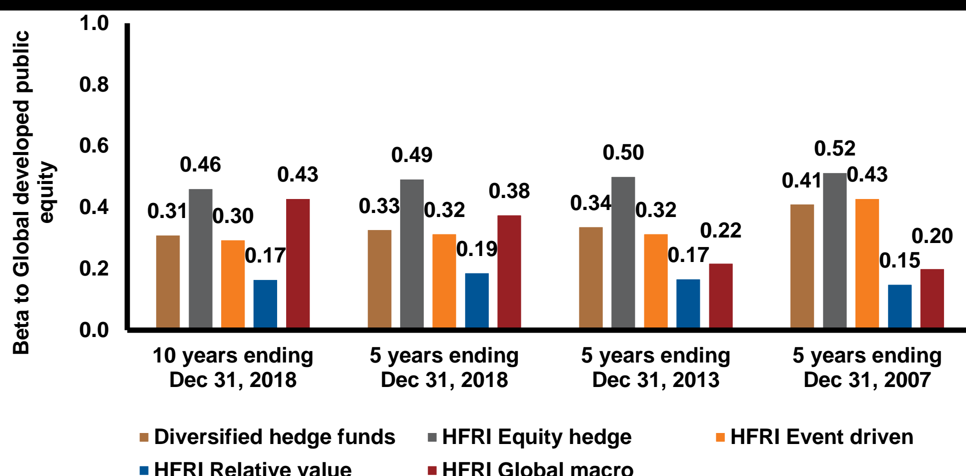


Source: HFRI & MSCI. For illustrative purposes only.

Equity hedge, relative value and event driven all added alpha by generating a return that was a higher proportion of the global developed equity return than risk (beta).

Equity hedge, relative value and event driven all added alpha by generating a return that was a higher proportion of the global developed equity return than risk (beta).

Exhibit 14: Hedge fund strategy equity beta comparison



Source: HFRI & MSCI. For illustrative purposes only.

The actual results experienced by hedge fund investors over these time periods have varied significantly; therefore, investors should use the above set of risk/return objectives in assessing the results of their specific hedge fund portfolios.

Guidance in determining the role of hedge funds going forward

- This evaluation uses a naïve hedge fund proxy. In reality, hedge funds are an actively-managed strategy where an allocator's skill in manager selection and strategy allocation is critical to success. The actual results experienced by hedge fund investors over these time periods have varied significantly; therefore, investors should use the above set of risk/return objectives in assessing the results of their specific hedge fund portfolios.
- Investors should be deliberate in aligning their hedge fund performance expectations with portfolio composition; strategy allocation targets should vary depending on investment objectives.
- Fees matter, and "high" fees can materially erode value added. Hedge fund portfolios should be expected to meet their risk/return objectives net of **all** fees. Further, investors should have an eye towards fees at both the implementation and underlying hedge fund level. Finally, hedge fund fees should be justified by the manager's investment approach and process. A high level of fees should not be accepted simply because "that's what hedge funds charge."
- Hedge funds can play the important role of providing downside protection when public equity markets decline while allowing for more significant participation than U.S. aggregate bonds when markets rebound. As demonstrated in the "Growth of $1,000 from January 2003 to December 2018" chart presented in the introduction, **a long-term time horizon and the absence of the need to make withdrawals may diminish the benefits of a hedge fund portfolio since equity returns are expected to outpace hedge fund returns over long time periods.**

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[1] MSCI
[2] MSCI
[3] Diversified Hedge Fund Portfolio is represented by the HFRI® Fund Weighted Composite Index: a global, equal-weighted index of single-manager funds that report to the HFR Database. Constituent funds report monthly net of all fees performance in U.S. Dollar and have a minimum of $50 million under management or a twelve (12) month track record of active performance (source www.HFR.com). Global Public Equity is represented by the MSCI World Index Net-Dividends. U.S. Public Equity is represented by the Russell 3000 Index. U.S. Aggregate Bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index.
[4] In 2007, Warren Buffett bet hedge fund manager Protégé Partners a million dollars that an index fund would outperform a collection of hedge funds over the course of 10 years. Mr. Buffett officially won that bet on December 31, 2017. The money was donated to the charity Girls Inc.
[5] Assumes a LIBOR performance hurdle assessed annually and a high water mark.
[6] MSCI, Bloomberg Barclays and HFRI
[7] Diversified hedge funds: HFRI; global developed public equity: MSCI

Russell Investments

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First used: July 2019

AI-27629-07-22