How a low correlation asset may impact portfolio efficiency

Federated Hermes

Key takeaways

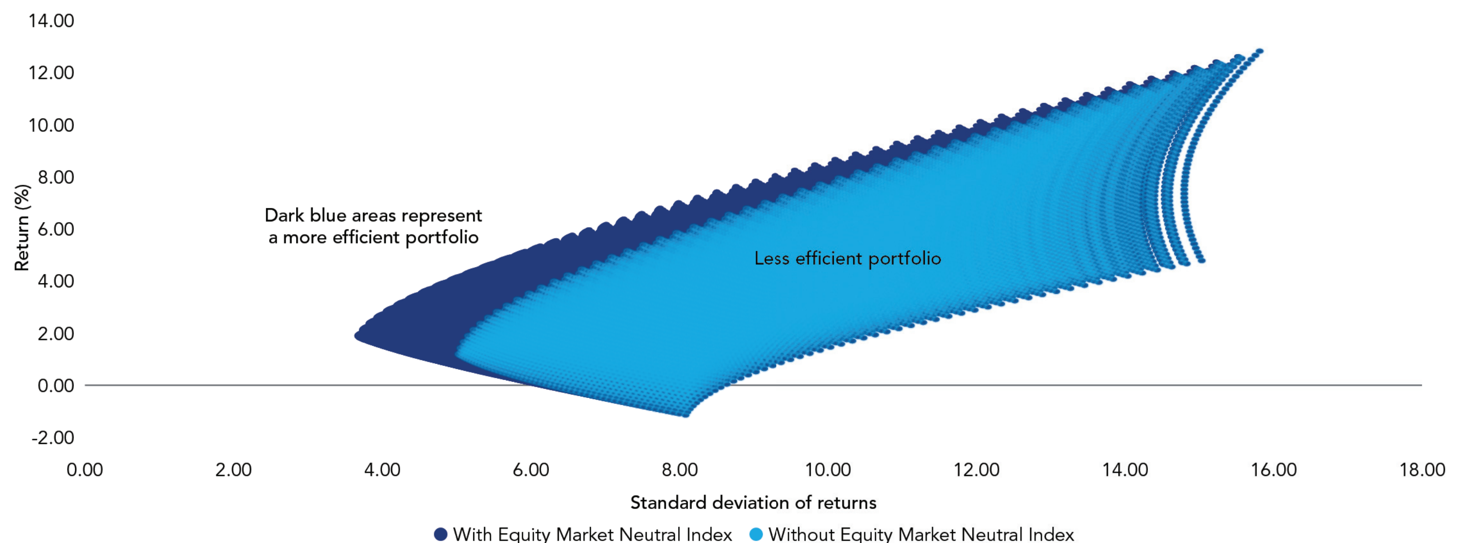
- **A portfolio of assets that don't move in tandem may potentially lower overall portfolio risk.**
- **Positive returns from uncorrelated assets may boost overall portfolio performance potential.**
- **A mix of uncorrelated assets may lead to more stable and predictable portfolio performance.**

Adding an uncorrelated asset class with a positive return to a portfolio can have several potentially beneficial effects:

- **Improved diversification:** Diversification is a key strategy in risk management. Seeking uncorrelated returns by spreading investments across different asset classes may help reduce overall portfolio volatility.
- **Reduced risk potential:** Uncorrelated assets, by definition, do not move in tandem with the other assets in a portfolio. When other assets are underperforming, the uncorrelated asset may not be affected in the same way, by the same factors, potentially reducing overall portfolio risk.
- **Potential for higher returns:** While a chief goal of adding uncorrelated assets to a portfolio is to reduce risk, it can also increase return potential during periods when other assets in the portfolio have lower relative performance.
- **Smoother performance:** With a mix of uncorrelated assets, a portfolio may potentially experience less dramatic swings in value, as uncorrelated assets will tend to mitigate the extreme performance of any individual asset. This may result in a more stable performance stream over time.

Adding an asset that aims to generate positive returns uncorrelated with the equity, bond or credit market (like an equity market neutral strategy represented by the Credit Suisse Equity Market Neutral Index below) to a portfolio mix has the potential to improve portfolio efficiency (increase return without taking on additional risk). In the efficient frontier analysis below, which contains over 350,000 portfolio variations using hypothetical allocations and historical index data, the dark blue areas represent portfolios where an uncorrelated asset has been added. In this analysis, the vast majority of portfolio combinations without an uncorrelated asset are shown to be "inefficient," with lower risk-adjusted returns than portfolios that include an allocation to the Market Neutral Index.

Exhibit 1: Five-asset efficient frontier analysis (Russell 3000®, Bloomberg US Aggregate, MSCI ACWI ex-USA, Bloomberg Global Aggregate ex-USD, Credit Suisse Equity Market Neutral Index)



Source: Morningstar, Inc., Federated Hermes, Inc. Index return period is 1/1/15 to 12/31/24. **For illustrative purposes only. Past performance is no guarantee of future results.**

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Exhibit 2: 10-year correlations and total returns 1/1/15 through 12/31/24

	Russell 3000®	Bloomberg US Aggregate	MSCI ACWI ex USA	Bloomberg Global Agg ex-USD	Credit Suisse Equity Market Neutral
Russell 3000®	**1.00**				
Bloomberg US Aggregate	0.37	**1.00**			
MSCI ACWI ex USA	0.86	0.42	**1.00**		
Bloomberg Global Agg ex-USD	0.46	0.78	0.61	**1.00**	
Credit Suisse Equity Market Neutral USD	0.25	0.20	0.40	0.40	**1.00**

	Russell 3000®	Bloomberg US Aggregate	MSCI ACWI ex USA	Bloomberg Global Agg ex-USD	Credit Suisse Equity Market Neutral
Return	12.55	1.35	4.80	-0.90	2.55
Standard deviation	15.82	5.03	15.03	8.08	4.52
Return/Standard deviation	0.79	0.27	0.32	-0.11	0.56

Source: Morningstar, Inc., Federated Hermes, Inc. Index return period is 1/1/15 to 12/31/24. **For illustrative purposes only. Past performance is no guarantee of future results.** Index returns do not reflect expenses that would be applicable to an actual investment.

Exhibit 3: Return/risk for low correlation asset inclusion in various portfolio allocations

- When allocation is taken from domestic equity, potential effects include: increase/decrease levels of portfolio risk and return while maintaining return efficiency (green shade below).
- When allocation is taken from domestic fixed income, potential effects include: return increases, risk decreases and return efficiency improves (light blue shade below).

Allocations (%)					Trailing 10-year total returns		
Russell 3000®	Bloomberg Aggregate	MSCI ACWI ex-USA	Bloomberg Global Aggregate ex-USD	Credit Suisse Equity Market Neutral Index	Return (%)	Standard deviation	Return/ Standard deviation
Take Market Neutral Equity Index allocation from equity							
60	30	6	4	0	8.18	11.12	0.74
50	30	6	4	10	7.18	9.71	0.74
40	30	6	4	20	6.18	8.33	0.74
Take Market Neutral Equity Index allocation from fixed income							
60	30	6	4	0	8.18	11.12	0.74
60	20	6	4	10	8.30	11.01	0.75
60	10	6	4	20	8.42	10.93	0.77

Source: Morningstar, Inc., Federated Hermes, Inc. Analysis based on index returns from 1/1/15 through 12/31/24. These sample allocations are taken from the efficient frontier analysis in Exhibit 1. **For illustrative purposes only. Past performance is no guarantee of future results.** Index returns do not reflect expenses that would be applicable to an actual investment.

What level of correlation typically indicates a systematic relationship between two asset classes?

- A systematic relationship between two asset classes is typically indicated by a high positive (or negative) correlation, measured on a scale from -1 to +1:
  - **+1:** Perfect positive correlation, meaning the two asset classes move in the exact same direction over a specified period.
  - **0:** No correlation, meaning the movements of the two asset classes are completely unrelated.
  - **-1:** Perfect negative correlation, meaning the two asset classes move in the exact opposite directions over a specified period.
- A correlation coefficient above +0.7 generally suggests a strong positive relationship, indicating that the asset classes tend to move together systematically. Conversely, a correlation below -0.7 indicates a strong negative relationship, where the asset classes move in opposite directions.
- A correlation coefficient between +0.3 and +0.7 generally suggests a reasonably positive relationship, indicating that the asset classes generally tend to move together systematically but to a more modest extent. Conversely, a correlation between -0.3 and -0.7 indicates a more modest negative relationship, where the asset classes move in opposite directions.
- A correlation coefficient between +0.3 and -0.3 indicates low-to-no relationship exists between asset classes, thus their performance is largely independent.

Thus, the closer the correlation coefficient gets to +1.0 or -1.0, the stronger the relationship, positive or negative, between two assets.

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A word about risk

Diversification does not assure a profit nor protect against a loss.

There can be no guarantee that adding an uncorrelated asset to a portfolio will improve it's risk/reward potential or that an objective of low correlation can be achieved by any investment strategy.

Strategies pursuing low correlation may use alternative investments, such as long and short positions and derivatives, that involve risks different from, or possibly greater than, the risks associated with investing directly in traditional instruments.

Definitions

Correlation measures the similarity between two return series on a scale of -1.0 to +1.0. Assets with a correlation of 1.0 are perfectly correlated, -1.0 demonstrates perfect negative correlation and 0.0 indicates the absence of correlation.

Standard deviation: A measure of volatility of returns. It measures the dispersion about an average, and depicts how widely an investment's returns varied over a certain period of time. A higher standard deviation implies a higher level of risk.

Bloomberg Global Aggregate ex-USD Index is a measure of global investment-grade debt from local currency markets outside the US. This multi-currency benchmark includes fixed-rate treasury, government-related, corporate and securitized bonds from both developed and emerging markets issuers.

Credit Suisse Equity Market Neutral Index is constructed to reflect the performance of a market neutral investment strategy. The index is a subset of the Credit Suisse Hedge Fund Index that measures the aggregate performance of equity market neutral funds. Equity market neutral funds typically take both long and short positions in stocks while seeking to reduce exposure to the systematic risk of the market (i.e., a beta of zero is desired).

MSCI ACWI ex USA Index captures large- and mid-cap representation across 22 of 23 developed markets countries (excluding the U.S.) and 27 emerging markets countries. The index covers approximately 85% of the global equity opportunity set outside the U.S.

Bloomberg US Aggregate Bond Index is an unmanaged index composed of securities from the Bloomberg Government/Corporate Bond Index, Mortgage-Backed Securities Index and the Asset-Backed Securities Index.

Russell 3000® Index measures the performance of the largest 3,000 U.S. companies, representing approximately 98% of the investable U.S. equity market.

Indexes are unmanaged and cannot be invested in directly.

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