Liquidity and diversification: Absolute return strategies for asset allocation

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Over the last 20 years, the correlation between equities and fixed income has been predominantly negative. But, with the emergence of inflation, this relationship has changed, leaving a need to add uncorrelated and liquid building blocks to investment portfolios. Using hedged equity factors, fixed income factors, FX overlays and stand-alone tactical asset allocation signals, we have researched an absolute return approach that may serve as an uncorrelated portfolio component.

For more than 20 years, the negative correlation between equites and bonds was taken for granted, making these two asset classes the main ingredients of balanced, well-diversified portfolios.

But this correlation has not always predominated. In fact, the correlation between equities and bonds has varied quite drastically over time.[1] Figure 1 shows positive 5-year correlations between 10-year US Treasuries and the S&P 500 in red and negative correlations in green.

As we can see, long periods of negative 5-year correlations are a fairly recent phenomenon. From 1963 to 2000, stocks and bonds generally moved in the same direction. The 1-year correlation, shown in gray, is more volatile – but its recent return into positive territory signals that the current period of negative 5-year correlations may soon be over. This means a well-diversified portfolio may require more than just stocks and bonds, and absolute return strategies may be more interesting than ever.

How uncorrelated are "uncorrelated" portfolio components?

Absolute return strategies have a long history: Initially, fairly illiquid offshore hedge funds dominated. But since the global financial crisis in 2008, more and more strategies with daily liquidity have appeared in the market, some managed by hedge funds, others by traditional asset managers. Numerous alternative indices have also emerged over the years, and fund rating providers have introduced

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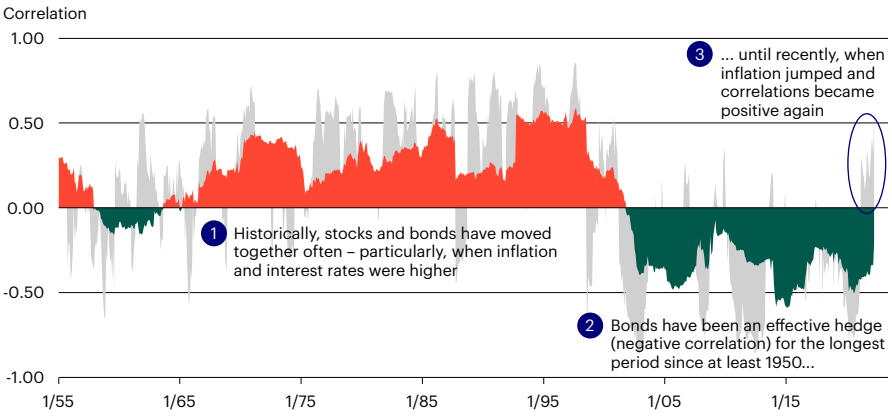
Figure 1
Correlations between equities and bonds



Source: Bloomberg, Invesco. 5-year correlations between 10-year US Treasury bonds and the S&P 500 in red (positive) and green (negative); 1-year correlations in gray. Data from January 1955 to August 2022.

various new investment categories. Some of these have recently changed, proving how dynamic the market is – Morningstar, for example, restructured its categories in 2021.[2]

Still, the right indices can be a valuable source for analysis, and we'll look at the Hedge Fund Research (HFRX) indices for the categories Equity Market Neutral and Macro/CTA, which are well known and have a long history. Equity Market Neutral represents equity-based strategies with a net market exposure close to zero. The Macro/CTA Index consists of macro strategies with long and short positions mostly in bond, equity, commodity and currency indices. As expected, both indices have, on average, low correlations with equities over the long term.

While long-term diversification is important, adequate diversification over shorter periods is necessary, too. Figure 2 shows the historical correlations between the two alternative indices and global equities. The long-term pattern looks favorable, with average correlations close to zero. But intermediate deviations are also visible and can persist for periods longer than expected.

Particularly interesting are the 18 months from January 2020 until June 2021 – encompassing periods before and after the COVID outbreak. Both indices experienced a rolling 12-month correlation with equities of more than 0.5, which may have been a good thing when equities were rising. But there was obvious disappointment when equities declined. The COVID period was unusual, even though similarly high correlations between alternatives and equity markets were observable previously. The question is when this will happen again, and what could then be an appropriate portfolio positioning.

An absolute return strategy with diversified building blocks

A possible solution may be an absolute return strategy with well-known building blocks, namely: equity factors, fixed income factors and FX factors, as well as a tactical asset allocation component.

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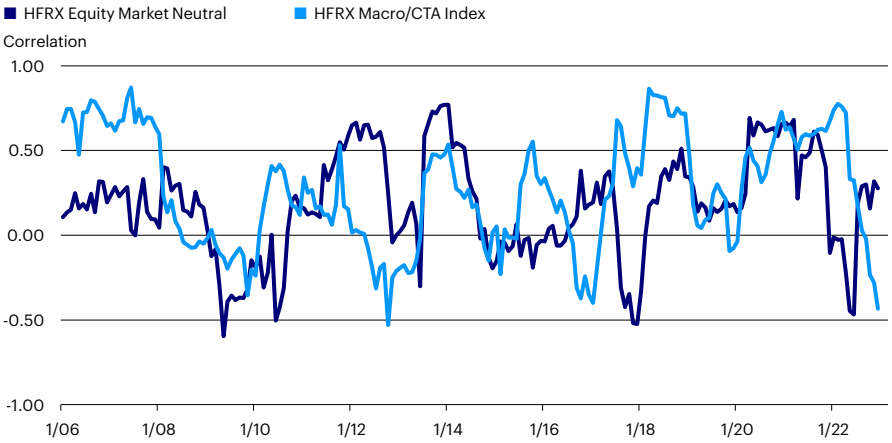
A possible solution may be an absolute return strategy with well-known building blocks.

Figure 2
Rolling 12-month correlation of hedge fund strategies and global equities



Sources: Bloomberg, Invesco. Hedge fund strategies as measured by the HFRD Equity Market Neutral and the HFRX Macro/CTA Index, global equities as measured by the MSCI World. Data from January 2006 to December 2022.

> Combining all four building blocks into an absolute return strategy shows the potential of diversification.

Equity factors are derived from the well-established risk and return drivers quality, momentum, value and low volatility. Drawing from a global universe, we construct beta-neutral factor exposures by building a global equity portfolio that represents these factors. Additionally, we hedge risk-adjusted equity market exposure using index futures. The result is a liquid equity multi-factor investment without counterparty risk.

Fixed income factors overweight bonds in the portfolio with positive value, carry and low volatility characteristics. Starting with an appropriate investment grade universe, three portfolios are formed. Low volatility targets bonds with higher credit ratings and lower duration. Value targets bonds with higher spreads or yields in excess of maturity-matched Treasuries (relative to bonds with similar industry characteristics, credit rating and maturity). Carry targets the bonds with the highest overall spread. These three portfolios are combined such that each component contributes equally to risk. A final optimization controls for other risk factors such as capital structure and issuer concentration.

FX factors are formed for two separate universes: ten major developed market currencies (G10) and emerging market currencies (EM). For each universe, we form long-short portfolios targeting carry, value and momentum. For carry, we go long (short) the currencies with the highest (lowest) forward yield. Value is formed by going long (short) the currencies with both the highest (lowest) discount to their PPP[3]-implied fair value and a large decrease (increase) in their fair value. Momentum is formed by going long (short) the currencies with the highest trailing 12-month return and a strong dollar-beta exposure, i.e., a strong correlation to the US dollar.

The ***tactical asset allocation (TAA)*** building block consists of a portfolio that invests in the S&P 500, EuroStoxx 50, FTSE 100 and TOPIX. Investments are based on a set of tactical signals comprising three different concepts: Trend following captures the overall risk aversion and price trends in capital markets. Valuation compares the standardized relationship between current and fundamental prices. Economics measures the economic outlook given that equity market performance is sensitive to shifts in underlying macroeconomic trends. In implementing the tactical signals, we assign a fixed pre-defined tracking error budget to the TAA (in this case: 1%) such that the risk contribution of the four equity markets can be controlled effectively.

Table 1 compares the simulated performance of the MSCI World absolute return strategy and its four building blocks. An equity factor investment would have delivered significantly higher risk-adjusted returns than the MSCI World (Sharpe ratio of 0.66 vs 0.35). In periods with equity market losses, it would have delivered a positive return 61.28% of the time and an aggregate return of 11.70%, confirming its diversification capabilities. As the fixed income factor, the FX factor and TAA component target a risk of 1%, their return contribution is lower. Still, they helped to diversify since they performed well in equity downturns and had low equity betas overall.

Combining all four building blocks into an absolute return strategy shows the potential of diversification. Over the sample period, this combination would have returned 5.36% p.a. at 3.83% annualized volatility, translating to a Sharpe ratio of 0.97. Beta-hedged, i.e., adjusted with the aim of reaching an equity market beta near zero, the results would have been even better, with a Sharpe ratio of 1.26; we will discuss this in more detail later. Hence, in risk-adjusted terms, the absolute return strategy would have outperformed a pure equity market investment as well as investments in the four building blocks.

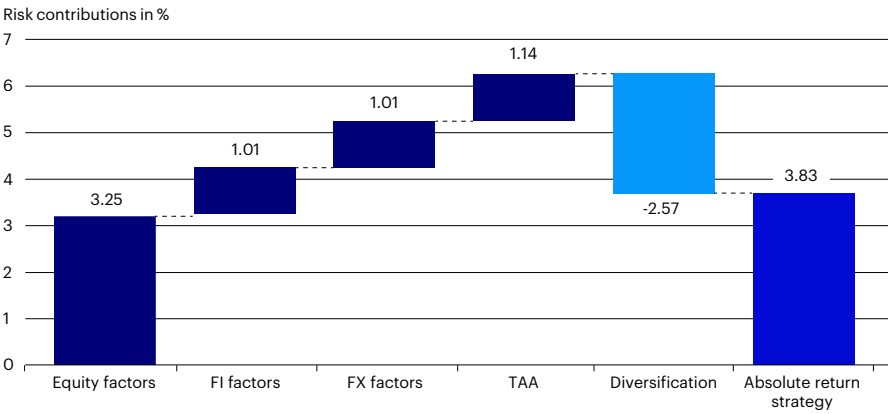
Figure 3 shows the risk decomposition of the strategy. While, at 3.25%, the equity factors were responsible for the largest proportion of risk, the FX, fixed income and the TAA components are constructed to reach around 1% risk ex post. As the four building blocks diversify one another, the final strategy would have had a risk of 3.83% – only slightly above the equity factor on its own.

Table 1
Simulated performance in comparison

		MSCI World	Equity factors	FI factors	FX factors	TAA	Absolute return strategy	Absolute return strategy (beta-hedged)
All period	Return p.a	7.32%	3.80%	0.48%	0.51%	0.51%	5.36%	5.76%
	Standard deviation p.a.	16.21%	3.25%	1.01%	1.01%	1.14%	3.83%	3.26%
	Sharpe ratio	0.35	0.66	-1.17	-1.13	-1.00	0.97	1.26
	Beta (ex post)	1.00	-0.02	0.00	0.02	0.02	0.03	0.01
Periods with equity market drawdowns only	Total return	-82.97%	11.70%	0.91%	-3.63%	-6.86%	1.16%	3.52%
	Average return	-0.70%	0.04%	0.00%	-0.01%	-0.03%	0.00%	0.01%
	Periods with positive return	0.00%	61.28%	52.99%	42.86%	21.17%	50.92%	51.40%

Sources: Bloomberg, Invesco. Data from January 2005 to December 2022. **Past performance does not predict future returns.** There is no guarantee the simulated results will be realized in the future.

Figure 3
Risk decomposition of the absolute return strategy



Sources: Bloomberg, Invesco. Data from January 2005 to December 2022.

Protection is key, especially when equities experience elevated drawdowns. Figure 4 shows the performance of the absolute return strategy and its building blocks in different bear markets.

During most bear markets, the strategy would have held up nicely, reporting positive or at least flat returns. The only exception is during the COVID pandemic with its sharp and rapid drawdown followed by a very fast recovery.[4] Actively managing the beta of the absolute return strategy would have led to even better results. While equity factors were the main driver of outperformance, the other components helped as well by adding diversification to the strategy.

Adding diversity

As discussed, hedge fund indices proxy the ability to engage in uncorrelated portfolio components. Table 2 shows low correlations between the indices, the four building blocks and the resulting absolute return strategy. While the Equity Market Neutral Index has an average correlation of 0.22 with equites, and the Macro/CTA Index has one of 0.12, the absolute return strategy would have been relatively uncorrelated, at 0.08 – and only 0.06 if beta were managed actively.

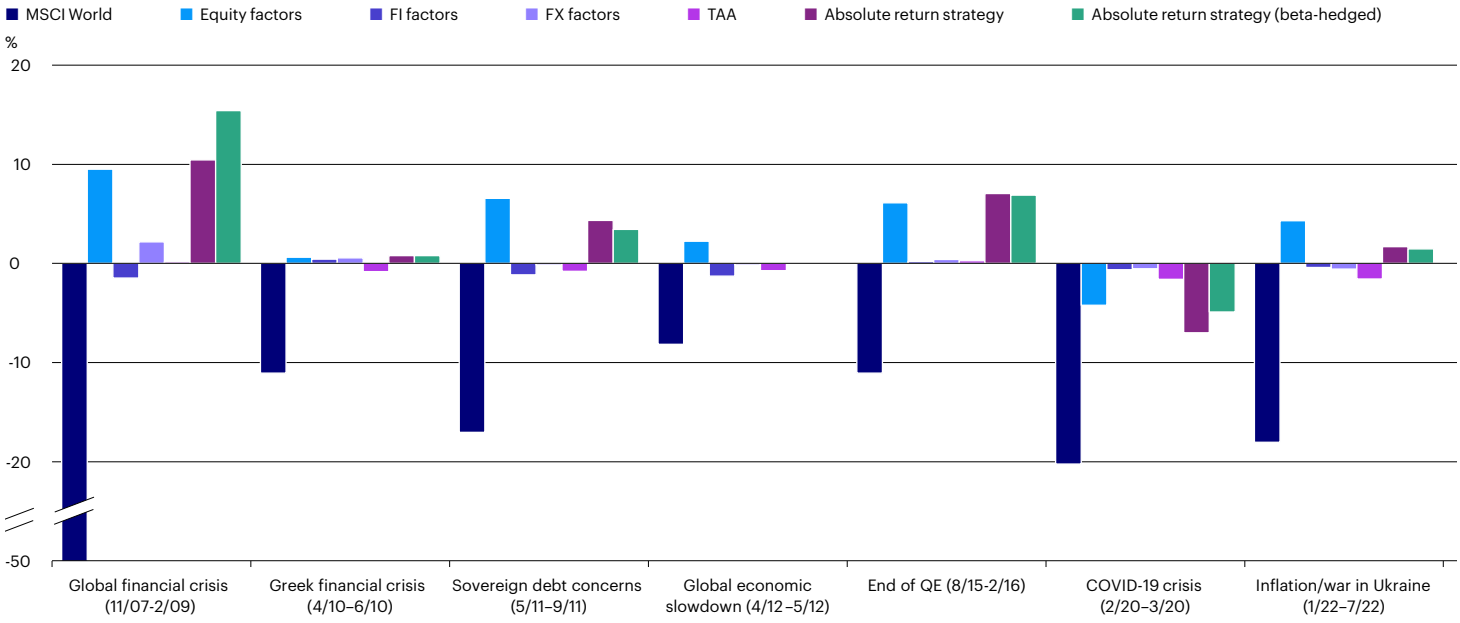
Actively controlling beta

When striving for diversification, it is crucial to control a strategy's major risk drivers. As illustrated in figure 3, equity risk is the main risk factor of the absolute return strategy. Nevertheless, over the sample period, the beta relative to the MSCI World was 0.03, providing overall diversification with respect to the equity market.

As the correlations between financial markets vary over time, we need to examine the development of their betas to equities. Figure 5 shows that the beta of the absolute return strategy relative to the MSCI World would have been very volatile over the sample period, with a maximum of 0.23. Thus, especially in

> When striving for diversification, it is crucial to control a strategy's major risk drivers.

Figure 4
Performance of the absolute return strategy and its building blocks in selected bear markets



Sources: Bloomberg, Invesco. Data from January 2005 to December 2022. **Past performance does not predict future return.**

Table 2
Correlations

	MSCI World	Equity factors	FX factors	FI factors	TAA	Absolute return strategy	Absolute return strategy (beta-hedged)	HFRX Equity Hedge Market Neutral Index	HFRX Macro/ CTA Index
MSCI World	1								
Equity factors	-0.17	1							
FX factors	0.43	-0.12	1						
FI factors	0.04	0.24	0.10	1					
TAA	0.52	-0.06	0.17	-0.07	1				
Absolute return strategy	0.08	0.91	0.19	0.43	0.21	1			
Absolute Return strategy (beta-hedged)	0.06	0.90	0.17	0.42	0.20	0.98	1		
HFRX Equity Hedge Market Neutral Index	0.22	-0.01	0.22	-0.07	0.26	0.10	0.08	1	
HFRX Macro/CTA Index	0.12	0.04	0.08	0.04	0.17	0.11	0.12	0.07	1

Sources: Bloomberg, Invesco. Based on data from January 2005 to December 2022.

periods of high correlation, we can further increase diversification by controlling for beta relative to the equity market.

To this end, we apply a dynamic asset allocation strategy that invests in the risky (absolute return) portfolio and a non-risky asset so that the risk target will not be violated. Specifically, systematically adjusting exposure to the portfolio conditioned on its current beta (forecast) maintains a pre-specified beta target of, in this case, 7.5%. If the portfolio's current beta is above target level, we would reduce the investment exposure by shifting towards the risk-free asset, and vice versa. To rule out leverage and short positions, we restrict the total investment exposure to between 0% and 100%. Since we do not know the ex-ante beta of the underlying risky portfolio, we estimate it using a rolling 252-day window.[5]

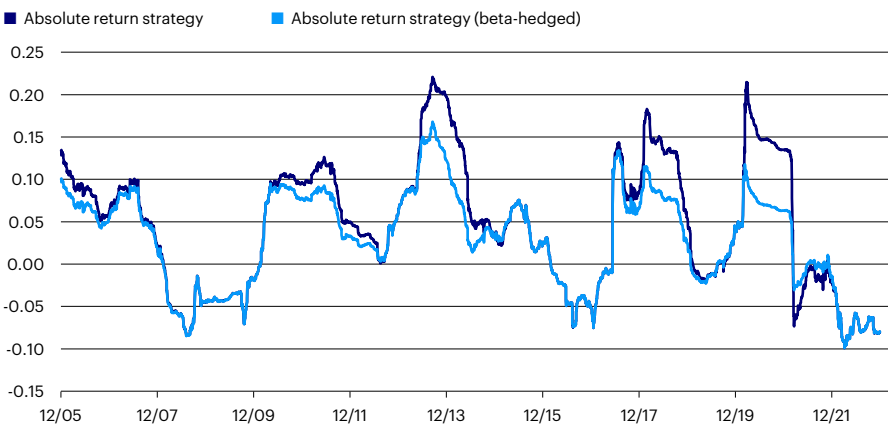
Figure 5 shows that the beta-hedged strategy indeed mitigated the correlation to the equity market in periods of high correlation, providing diversification when needed most. As table 1 shows, beta hedging would have further reduced equity beta (to 0.01) and portfolio risk (to 3.26) and increased the portfolio return (5.76%) compared to the pure absolute return strategy. This would have led to a 29 bps improvement in the Sharpe ratio.

The new normal: Adding absolute return strategies to a traditional 60/40 portfolio

Finally, we analyzed the effects of adding the beta-hedged absolute return strategy to a traditional 60/40 portfolio, consisting of 60% equities and 40% bonds. Table 3 shows different allocations – from 90% 60/40 and 10% absolute return to 50% 60/40 and 50% absolute return. While the annualized return would have risen only marginally, volatility could have been reduced significantly, by up to 4.44 percentage points (for the 50/50 variant), resulting in a Sharpe ratio increase from 0.45 to 0.84.

In equity market downturns, the 60/40 portfolio lost 63.81% in total, as opposed to a loss of 82.97% for the MSCI World. Obviously, the bond component's ability to mitigate losses is limited. But with the

Figure 5
12-months rolling beta relative to MSCI World



Sources: Bloomberg, Invesco. Data from January 2006 to December 2022.

Table 3
Simulated performance in comparison

		60% equities 40% bonds	Blended 90/10	Blended 80/20	Blended 70/30	Blended 60/40	Blended 50/50
All period	Return p.a	5.92%	5.95%	5.97%	5.98%	5.98%	5.97%
	Standard deviation p.a.	9.58%	8.64%	7.72%	6.83%	5.96%	5.14%
	Sharpe ratio	0.45	0.50	0.56	0.63	0.73	0.84
	Beta (ex post)	0.59	0.53	0.47	0.41	0.36	0.30
Periods with equity market drawdowns only	Total return	-63.81%	-59.78%	-55.31%	-50.34%	-44.82%	-38.70%
	Average return	-0.40%	-0.36%	-0.32%	-0.28%	-0.24%	-0.19%
	Periods with positive return	6.08%	6.99%	8.34%	10.61%	13.89%	18.18%

Sources: Bloomberg, Invesco. Blended 90/10: 90% traditional 60/40 portfolio (60% equities, 40% bonds), 10% beta-hedged absolute return strategy etc. Data from January 2005 to December 2022. There is no guarantee the simulated results will be realized in the future.

beta-hedged absolute return strategy, losses would have been almost halved, to 38.70% (using a mixing ratio of 50/50).

Conclusion

While simple multi-asset allocations struggle with positive correlations between equities and bonds, uncorrelated absolute return strategies may fare much better. We have researched such a strategy using well-known drivers of risk and return, i.e., style factors, as well as tactical signals. Results can be further improved by hedging equity market beta to near zero. This is confirmed by comparing the simulated performance of a traditional 60/40 portfolio with the performance of various combinations of 60/40 and/or beta-hedged absolute return strategy.

Notes
1 cf. Campbell et al. (2017).
2 See Introducing the New Alternative Morningstar Categories | Morningstar.
3 Purchasing Power Parity.
4 cf. Gormsen and Koijen (2022).
5 Hollstein and Prokopczuk (2016) show that regressing a portfolio's return on the market return delivers reasonably good forecasts, even outperforming various more sophisticated methods.

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