29th January 2021

Risk-weighted strategies: 4q20 update

- We look at latest performance for multi-asset risk-weighted strategies
- A 60/40 portfolio remains 97% correlated with global equities
- Risk Parity delivers highest risk-adjusted returns and greatest decorrelation

The challenge

A 60/40 portfolio delivers asset-based diversification: it represents a mix between equities and bonds.

However although a 60/40 portfolio reduces market beta, it does not provide "true" (risk-based) diversification: for example, a 60/40 portfolio, as represented by the **Elston 60/40 GBP Index** remains 97% correlated with Global Equities.

This problem only increases in stressed markets where correlations between assets increase, as we saw in 2020.

Risk-weighted strategies for "true" diversification

Risk-weighted stratetgies, which represent multi-asset portfolios constructed towards a specific portfolio risk outcome, enable an alternative, differentiated approach to investing and for incorporating "true"diversification". We look at the following risk-based strategies in our analysis: Risk Parity, Max Deconcentration, and Min Variance. These are summarised in more detail in the **Appendix.**

Comparing asset-weighted vs risk-weighted strategies

How can we compare the efficacy of traditional asset-weighted strategies (e.g. 20%, 40%, and 60% equity/bond strategies), vs these risk-weighted strategies?

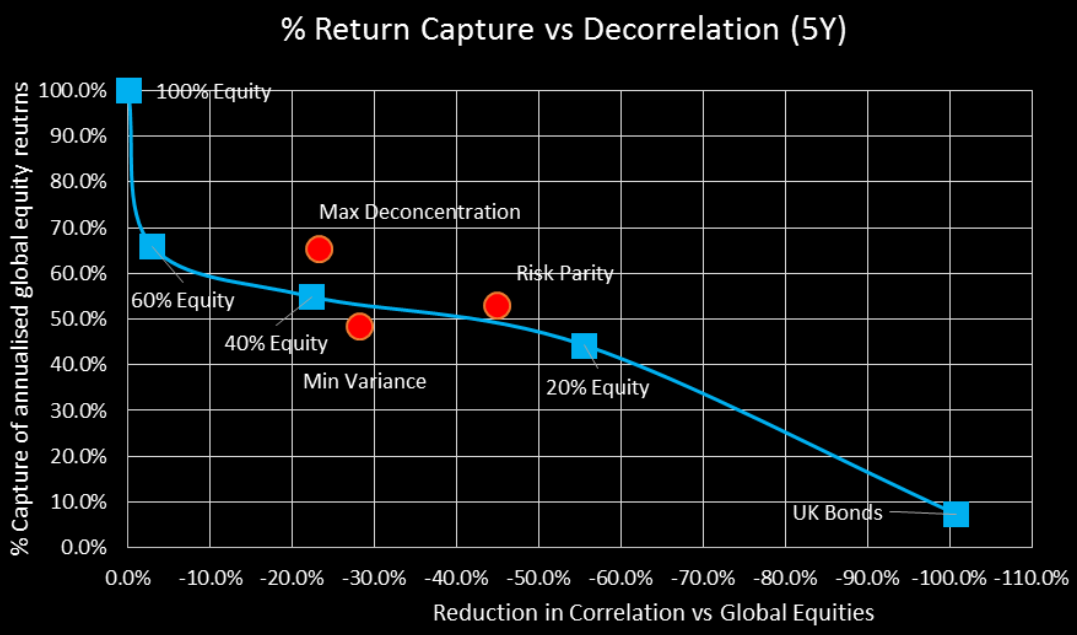
One approach would be to compare the efficacy of risk-based strategies vs asset-based strategies from the perspective of 1) capturing equity returns, whilst 2) providing "true" diversification as measured by decorrelation impact (the reduction in correlation relative to global equities).

In summary, the findings are that a Risk Parity strategy captured a similar level of equity returns as a 40% equity strategy, but with almost twice the level of decorrelation, meaning it delivers far greater "true" diversification relative to an asset-weighted strategy with similar return profile.

Over the 5 years to December 2020, a 40% Equity strategy captured 44.3% of global equities annualised returns and delivered a correlation reduction of -22.3%. By contrast, a Risk Parity

strategy captured 48.5% of global equity reutrns, and delivered a decorrelation of -44.8%, relative to global equities.

Fig.1. Risk-weighted vs asset-weighted: % return capture, vs decorrelation impact



Source: Elston research, Bloomberg data

So for portfolio constructors looking to deliver "true" risk-based diversification, whilst maintaining exposure to risk assets for the potential for returns, incorporating a risk-based strategy such as Risk Parity, Max Deconcentration, or Min Variance could make sense depending on portfolio risk budgets and preferences.

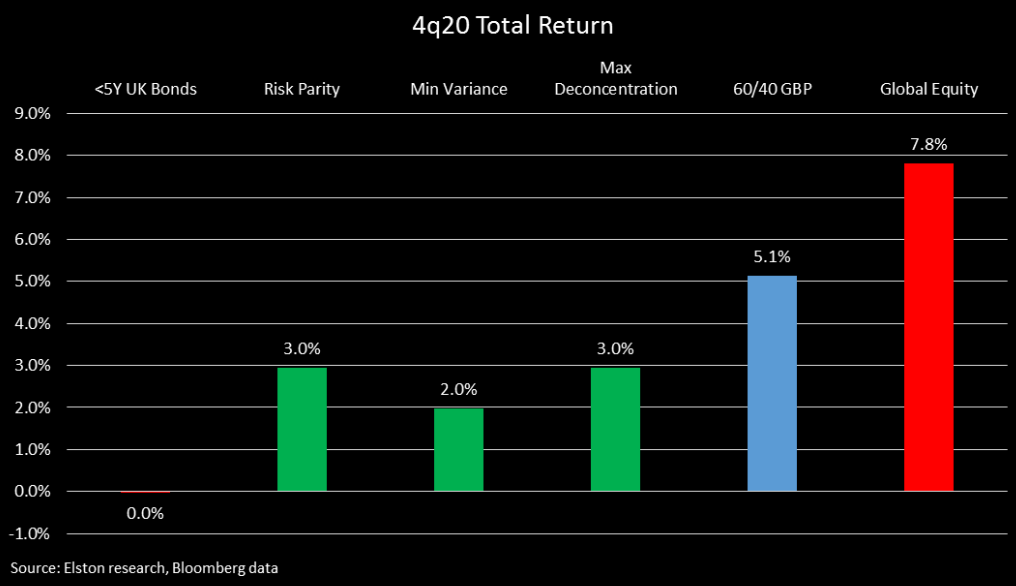
Risk-weighted strategies: Quarterly performance update

We review the quarterly performance of our multi-asset risk-weighted strategies compared to Global Equities and a traditional asset-weighted 60/40 portfolio for GBP investors

Total Returns

In the quarter, Risk Parity and Max Deconcentration offered best returns of these alternative strategies.

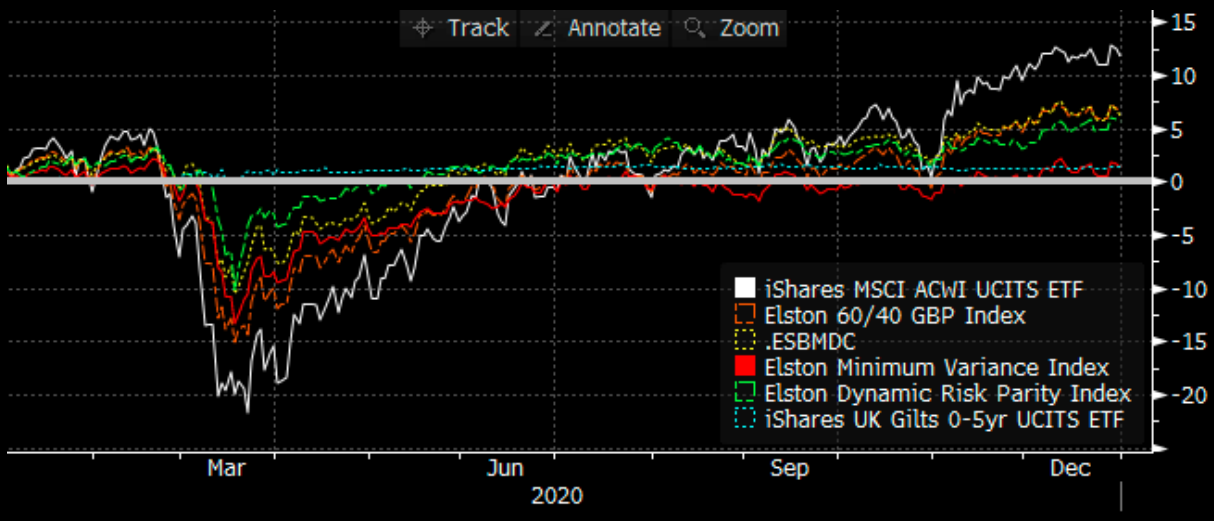
Fig.2. Total Return (discrete quarter, GBP terms)



Source: Elston research, Bloomberg data

On a rolling 1 year basis, of these strategies, Max Deconcentration offered the highest level of returns whilst Risk Parity provided the greatest downside protection.

Fig.3. 1 year Total Return (time series, GBP terms)

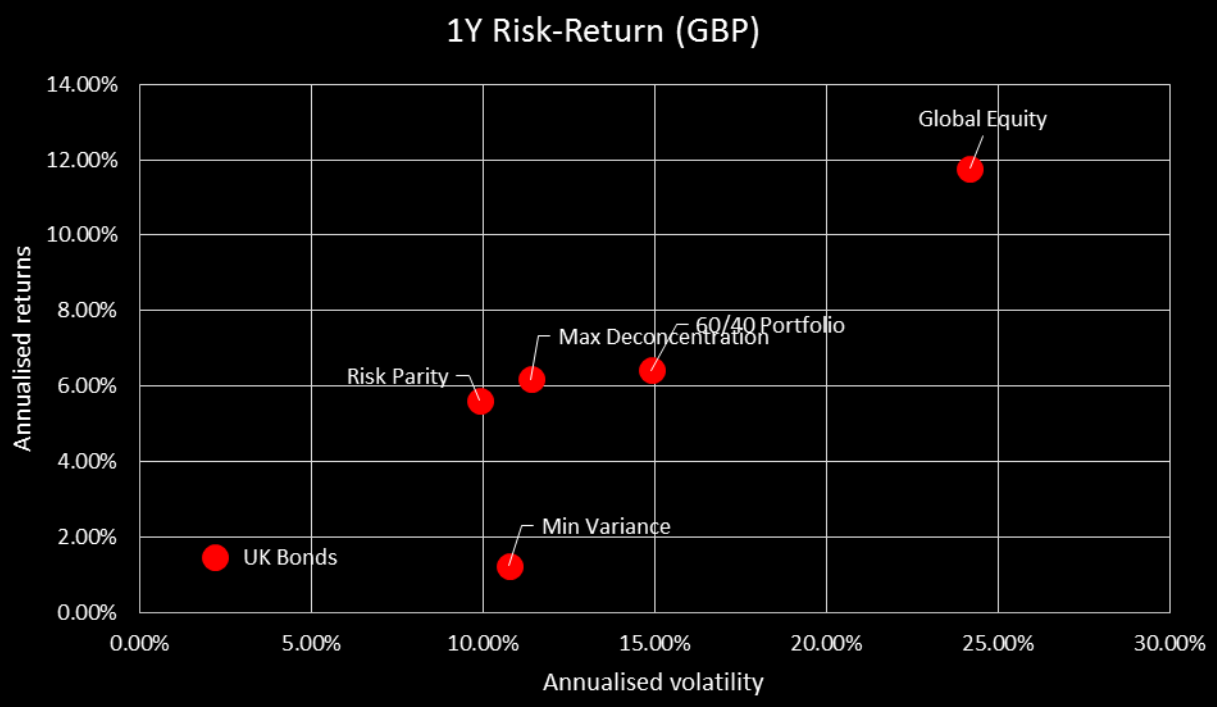


Source: Elston research, Bloomberg data. 1 year Total Return in GBP terms as at 31-Dec-20

Risk-return performance

On a rolling 1 year, basis Risk Parity & Max Deconcentration provided best risk-adjusted returns.

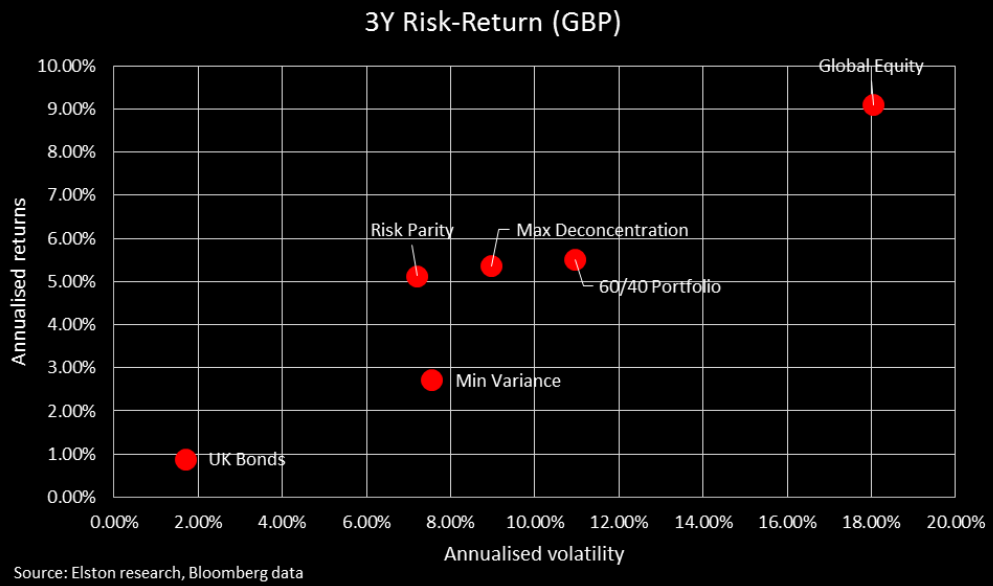
Fig.4. Risk-Return (1 year, GBP terms)



Source: Elston research, Bloomberg data

On a rolling three year basis, multi-asset Risk Parity has provided best risk-adjusted returns relative to a 60/40 Index Portfolio for GBP investors.

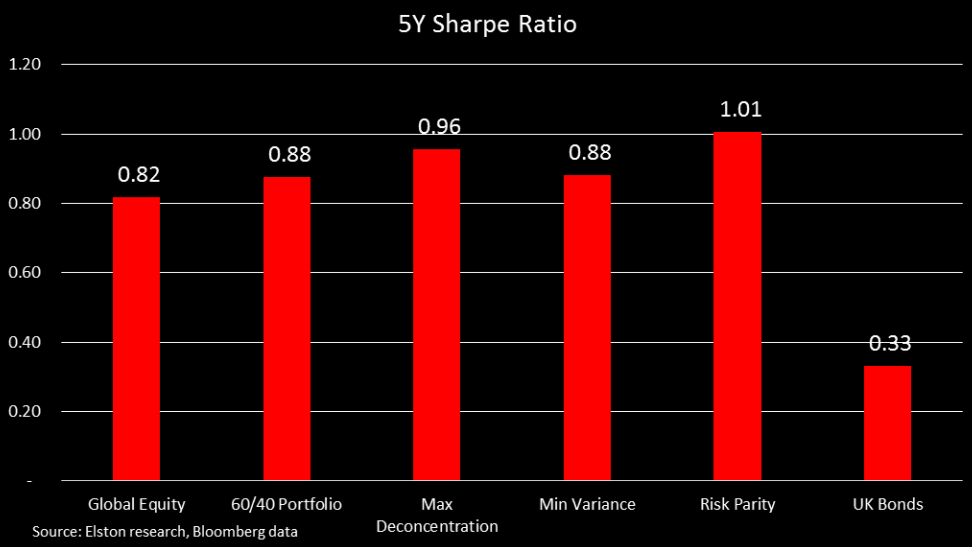
Fig.5. Risk-Return (3 year, GBP terms)



Source: Elston research, Bloomberg data

Max Deconcentration and Risk Parity offered superior risk-adjusted returns (defined by 5 year Sharpe ratio) relative to Global Equities or a 60/40 portfolio.

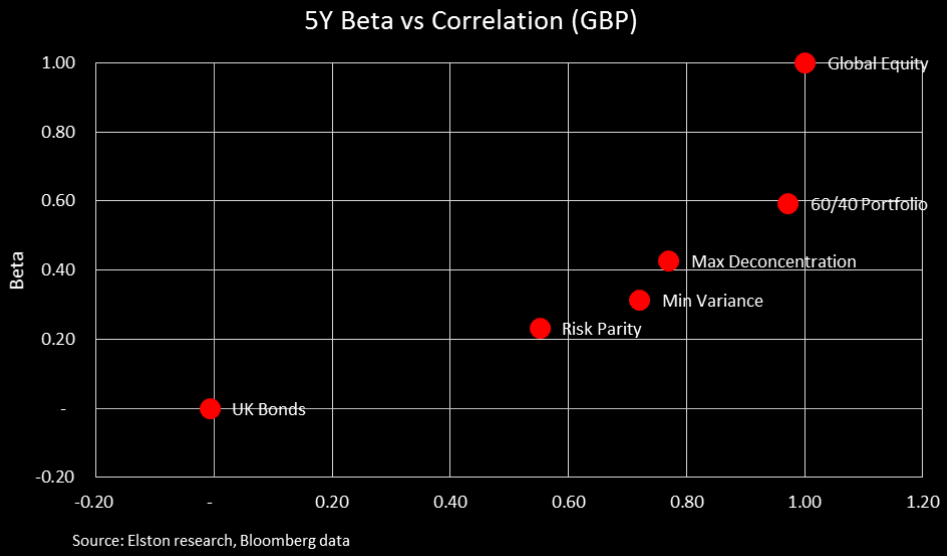
Fig.6. Sharpe Ratio (5 year, GBP terms)



Correlation & Beta

On a rolling 5 year basis, both Max Deconcentration, Min Variance and Risk Parity delivered lower beta and reduced correlation to Global Equities, relative to a 60/40 Index, which only provides beta reduction, but is 97% correlated to global equities – delivering negligible diversification from a risk-based perspective.

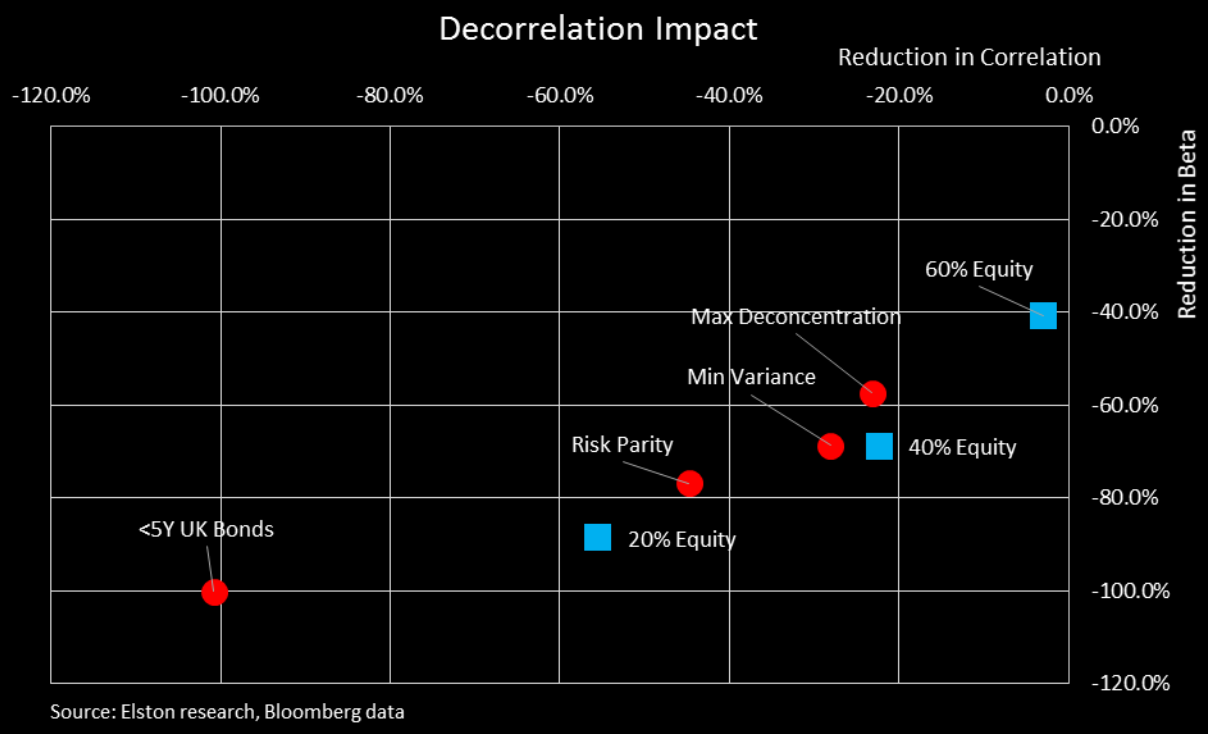
Fig.7. Beta vs Correlation to (5 year, GBP terms)



Decorrelation impact

We can evaluate the decorrelation impact by contrasting the reduction in beta and reduction in correlation of each multi-asset strategy relative to Global Equities. Whereas a 60/40 strategy reduced beta by -40.7%, it only reduced correlation by -2.9%, thereby creating minimal "true" diversification impact. By contrast, Risk Parity achieved the greatest decorrelation impact by reducing beta by -76.8% and correlation by -44.8% whilst maintaining greater exposure to risk assets than a 20% Equity strategy, enabling greater return capture.

Fig.8. Decorrelation impact (5 year, GBP terms)



Source: Elston research, Bloomberg data

Whilst short-dated <5Y bonds which are fully decorrelated to global equities, allocation to that exposure means foregoing the returns associated with investing in risk assets.

By contrast, allocation by Risk Parity to risk assets enables the strategy to deliver decorrelation impact, whilst also maintaining the potential for returns.

For example, over the same 5 year period, Risk Parity delivered annualised returns of +7.30%p.a. compared to +1.02%p.a. for <5Y UK bonds

Summary

Risk-weighted multi-asset strategies offer a systematic approach to alternative asset allocation strategies with specific portfolio risk objectives in mind. Risk-weighted strategies are designed to be differentiated and, depending on the objective, have the potential to enhance returns, mitigates risk or improve portfolio diversification.

Quarterly Multi-Asset Periodic Table (Discrete Total Returns, GBP terms)

Strategy	1q18	2q18	3q18	4q18	1q19	2q19	3q19	4q19	1q20	2q20	3q20	4q20
Global Equities	-4.51%	6.88%	5.49%	-10.73%	10.04%	6.04%	3.45%	1.35%	-15.39%	17.55%	3.63%	7.81%
60/40 Portfolio	-3.88%	4.81%	2.29%	-6.13%	6.69%	4.35%	3.11%	-0.30%	-10.13%	11.17%	1.35%	5.13%
Max Deconcentration	-3.54%	4.05%	1.14%	-3.06%	4.81%	5.54%	4.29%	-2.93%	-7.32%	10.26%	0.25%	2.95%
Min Variance	-3.20%	2.00%	-0.42%	-1.38%	3.13%	4.03%	3.86%	-0.90%	-8.50%	8.97%	-0.43%	1.98%
Risk Parity	-1.39%	1.69%	-1.22%	-2.01%	4.26%	3.01%	5.14%	-0.43%	-3.15%	5.71%	0.21%	2.98%
UK Gilts <5Y	-0.53%	0.41%	-0.18%	0.63%	0.51%	0.32%	0.70%	-0.45%	0.64%	0.73%	-0.01%	-0.01%

Source: Elston research, Bloomberg data, discrete quarter total returns in GBP. Thresholds: Red <-2%, Amber -2% to +2%, Green >+2%.

Annual Multi-Asset Periodic Table (Discrete Total Returns, GBP terms)

Strategy	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Global Equities	-21.37%	21.51%	16.69%	-6.86%	10.89%	20.40%	10.75%	3.25%	28.74%	13.16%	-3.89%	22.09%	11.80%
60/40 Portfolio	-8.10%	17.01%	12.30%	-0.39%	9.19%	10.66%	9.01%	0.66%	21.25%	8.96%	-3.17%	14.09%	6.45%
Max Deconcentration	5.07%	13.33%	13.42%	1.29%	8.20%	3.97%	8.25%	-0.40%	24.91%	5.33%	-1.62%	11.99%	6.20%
Min Variance	1.84%	14.15%	12.16%	1.89%	6.22%	5.13%	9.97%	0.37%	18.62%	7.49%	-3.03%	10.42%	1.24%
Risk Parity					6.20%	2.14%	10.75%	1.60%	15.58%	5.88%	-2.94%	13.40%	5.65%
UK Gilts <5Y	9.92%	2.72%	3.57%	4.70%	0.98%	-0.55%	2.90%	0.97%	2.58%	-0.25%	0.34%	1.05%	1.49%

Source: Elston research, Bloomberg data, discrete year total returns in GBP. Thresholds: Red <-5%, Amber -5% to +5%, Green >+5%.

Appendix

What are risk-weighted multi-asset strategies?

Risk-weighted strategies are an alternative approach to multi-asset investing, which we classify under "Alternative Strategies".

For traditional asset-weighted strategies, such as a 60/40 equity/bond portfolio, asset weights drive risk characteristics. For risk-weighted multi-asset strategies, risk characteristics drive asset weights.

What risk-weighted multi-asset strategies are available?

We focus on five well researched risk-weighted multi-asset strategies:

1. Minimum Variance
2. Risk Parity
3. Maximum Deconcentration
4. Maximum Sharpe
5. Maximum Decorrelation

Recap on objectives

The objectives of multi-asset risk-weighted strategies are derived from different branches of portfolio theory can be defined as follows:

Minimum Variance	Aims to minimise the overall strategy volatility by using pairwise correlations and volatilities of stocks to provide a good proxy for the least risky portfolio in the Modern Portfolio Theory framework.
Risk Parity	Aims to achieve equal risk contribution from asset classes under the assumption of identical pair-wise correlations structures. The same as inverse volatility weighting.
Maximum Deconcentration	A naïve diversification strategy that aims at maximising the effective number of holdings, equivalent to minimising concentration.
Maximum Sharpe	Aims to combine assets to achieve a strategy with the highest risk-adjusted return in excess of the risk-free rate.
Maximum Decorrelation	Aims to minimise the volatility of a strategy assuming that individual volatilities are identical, thereby constructing the strategy based on correlation structure alone (solving for the least correlated strategy).

Source: Elston Research

Performance Analysis

For the performance analysis below, we use the following ETFs, and Indices to represent the performance of different strategies.

Strategy	Representative ETF/Portfolio/Index
Global Equities unhedged in GBP terms	iShares MSCI ACWI UCITS ETF [**SSAC**]
UK Bonds (GBP)	iShares UK Gilts 0-5yr UCITS ETF [**IGLS**]
60/40 multi-asset index (GBP)	Elston 60/40 GBP Index [**6040GBP Index**]
Max Deconcentration multi-asset risk-weighted strategy (GBP)	Elston Strategic Beta® Max Deconcentration Portfolio [**.ESBMDC Index**]
Min Variance multi-asset risk-weighted strategy (GBP)	Elston Strategic Beta® Global Minimum Volatility Index (GBP) [**ESBGMV Index**]
Risk Parity multi-asset risk-weighted strategy (GBP)	Elston Strategic Beta® Risk Parity Index (GBP) [**ESBDRP Index**]

Source: Elston Research, Bloomberg data

Find out more

For more insights and information on research, portfolios and indices, visit:

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