A CENTRALISED INVESTMENT PROCESS: JOINED UP INVESTMENT THINKING

Balancing risks through strategic asset allocation and populating portfolios with winning funds

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Introduction

The investment advisory process requires an adviser to identify a client's financial requirements, connect this to their risk tolerance and build an investment portfolio with appropriate risk weighting in each asset class and then select the right funds to populate a portfolio. To do this all in one seamless process is the holy grail of investment advice.

In this document we develop a unique approach to solving this problem which we believe is both theoretically and empirically robust at every stage. It embodies comprehensive financial planning with sophisticated client risk profiling, a sound strategic asset allocation framework and a fund selection technique for the major UK IMA sectors. This selection process has a 15 year proven track record of outperformance of both sector average and investment benchmark performance for many sectors. We believe

> **SUCH A PROCESS WILL BOTH IMPROVE A CLIENT'S EXPERIENCE OF INVESTMENT AND INVESTMENT ADVICE IMMEASURABLY**

that such a process will both improve a client's experience of investment and investment advice immeasurably and address the major criticisms by the UK regulator of misguided approaches prevalent in the advisory space. This will in turn improve the experience of the adviser. In addition, this process pays particular regard to transactions' costs, both fiscal and organisational incurred by the adviser in meeting client's needs. This transparency is crucial to the industry-wide acceptability of this or, indeed, any other joined up investment advisory process.

This document is a summary of the research paper: 'Balancing risks through strategic asset allocation and populating portfolios with winning funds' (2014).

Background

In 2011 the UK financial regulator, the FSA (now the FCA), published its Finalised Guidance regarding 'Assessing Suitability' in the context of the appropriate risk a customer is willing and able to take when making an investment selection. As background, the FSA found that in a recent sample of investment files which had failed their 'suitability' test, around half were considered

> **...WHILE MOST ADVISERS DID CONSIDER A CUSTOMER'S ATTITUDE TO RISK WHEN ASSESSING SUITABILITY, THERE WAS A FAILURE IN MANY CASES 'TO TAKE APPROPRIATE ACCOUNT OF THEIR CAPACITY FOR LOSS'**

to be unsuitable on the grounds that the investment selection failed to meet the risk that a customer is willing and able to take. It solemnly pronounced: 'The level of failure in this area is unacceptable' (FSA, March, 2011, para 1.4, p2)[1].

The FSA study documented common features of processes deemed inadequate in assessing the risk a customer is willing and able to take. In particular, while most advisers did consider a customer's attitude to risk when assessing suitability, there was a failure in many cases 'to take appropriate account of their capacity for loss', (para 1.8, p3), where the latter refers to the ability to absorb falls in the value of their investment. Basically, if any loss of capital would result in a negative impact on the customer's standard of living, this should be taken into account in assessing the risk that they are able to take.

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1 FSA – Assessing Suitability: Establishing the risk a customer is willing and able to take and making a suitable investment selection. March 2011.

Following the UK's Retail Distribution Review implemented early in 2013, the dramatic reforms to the UK annuity market announced in the budget of March, 2014, along with the general demise of defined benefit pensions, the need for skilled financial advisers who can offer rigorous, consistent and intelligent investment solutions to customers has never been greater: there is a clear and present need for 'joined up' thinking that straddles the four key elements of any advised solution, they are:

  i.   **financial planning**
  ii.   **risk calibration,**
  iii. **portfolio construction, and**
  iv.   **fund selection**

Each stage in the process should be as scientifically-based as possible, drawing upon the most up-to-date industry and academic research available. We hope to show in this paper that such a rigorous and joined up approach is possible. The integrated effort is a blend of art and science[2], investment recommendations will emanate from a combination of scientific tools such as financial planning software or risk tolerance questionnaires, together with the adviser's ability to use these tools effectively in a rigorous and robust dialogue with the client. This will focus on client needs, mismatches and inconsistencies in their aspirations, and discuss alternative avenues to explore.

> **" THE INTEGRATED EFFORT IS A BLEND OF ART AND SCIENCE "**

Securing an appropriate investment strategy for a given client while taking on board risk in a general sense is called 'Risk Profiling', and involves assessing risk required, capacity for loss and risk tolerance. This process will also involve identifying and resolving any mismatches between goals and (expected) investment reality.

The client and adviser conversation

- Initially, advisers ask their clients about their financial goals.

- By agreeing certain assumptions about the future, the process helps to forecast investors' income, expenditure, assets and liabilities throughout their lifetime.

- Effectively, this process enables advisers to show their clients in a highly visual way the robustness or weakness in their finances.

- This then enables their clients to think about their objectives, what they would like to achieve, and what financial options may be relevant to help mitigate against some or all of the factors detailed above.

Lifetime cash flow planning helps advisers to collaboratively consider financial decisions with their clients and agree a sensible financial strategy for their future. In addition Monte Carlo techniques[3] can help the adviser guide the client to understand that a range of outcomes are possible given the probabilistic nature of investment returns.

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2 Risk Profiling: Art and Science, P. Resnik and G. Davey, FinaMetrica, 2012 http://www.riskprofiling.com/WWW_RISKP/media/RiskProfiling/Downloads/Risk_Profiling_-_Art_and_Science_UK.pdf)

3 Problem solving techniques used to approximate the probability of certain outcomes by running multiple trial runs, called simulations, using random variables (Investopedia: http://www.investopedia.com/terms/m/montecarlosimulation.asp)

FinaMetrica Pty Ltd suggest that risk profiling lies at the heart of financial planning. It is the process for determining an appropriate investment strategy with regard to risk with risk itself having three main aspects:

- **Risk required –** the risk associated with the return that would be required to achieve the client's goals (a financial characteristic).

- **Capacity for loss –** the extent to which the future can be less favourable than anticipated without derailing the client's plans (a financial characteristic).

- **Risk tolerance –** the extent to which a consumer is willing to risk experiencing a less favourable financial outcome in the pursuit of a more favourable financial outcome.

Assessing and comparing these three aspects of risk, together with the dialogue which accompanies any mismatches and the resolution of these mismatches, is the process known generically as 'risk profiling'.

The term 'capacity for loss' usually refers to clients' ability to withstand a fall in their investment, both financially and emotionally, without being driven off course. In many ways, assessing capacity for loss helps advisers to manage their clients' expectations. One of the best ways to measure the amount of loss that clients are able to tolerate is either by way of lifetime cash flow planning or to carry out 'stress testing' through Monte Carlo Simulations or, indeed, to combine both.

> "**RESEARCH (AND COMMON SENSE) SHOWS THAT GETTING ASSET ALLOCATION RIGHT IS FAR MORE IMPORTANT THAN FINDING A MANAGER THAT CAN OUTPERFORM THEIR PARTICULAR MARKET**"

Advisers should realise the need for portfolio recommendations to be tested against a range of possible outcomes to help determine the amount of loss their clients would feel comfortable with. When constructing client portfolios, advisers should also take into account any differences between the portfolio consistent with their cash flow needs, their risk tolerance and their capacity for loss. Financial planning software packages allow a financial plan to be stress-tested so that investors' capacity for loss – their ability to achieve goals in the event of investment underperformance – can be assessed.

So once an adviser has identified a client's return requirement with careful financial planning, and their capacity for investment risk with a robust risk profiling questionnaire, how should they allocate the investment portfolio between the ranges of available asset classes?

Research (and common sense) shows that getting asset allocation right is far more important than finding a manager that can outperform their particular market (since managers for a particular asset class will have highly correlated returns in general) – although we show that this is important too.

Many advisers make use of sophisticated optimisation software to help them allocate their funds across different asset classes and try to identify the 'optimal' asset class mix for their clients. The inputs to this software require the user to specify the following:

- Return that they expect on any asset class of interest
- The likely volatility of those returns
- The correlations between the asset class returns.

These optimised processes generally give reassuring, scientific-looking charts and statistics. However, in practice they frequently suggest highly concentrated, unrealistic portfolios unless they are heavily constrained by the user, typically going massively 'overweight' the asset with the highest (most optimistic?) return (see Micheaud, 1989, Financial Analysts' Journal[4]). Ultimately then, the pseudo-scientific output is only as good as the input. So unless one is very good at forecasting asset class returns, volatilities and correlations into the indefinite future, the results of ALL optimisation processes, however seemingly sophisticated, will be nonsense. Remember the saying: garbage in equals garbage out.

A growing body of academic research has shown that these apparently sophisticated, optimised approaches to portfolio construction can be outperformed by simple rules that instead seek to benefit from biases in investors' behaviour. The optimisers fail because at their heart lie the assumptions of an all too fallible human. Unless we have thousands of years of financial data or are very, very sure of the way the world functions, then simple investing rules may well be superior to more complex rules[5].

> **REMEMBER THE SAYING: GARBAGE IN EQUALS GARBAGE OUT.**

Instead, as we will explain, our approach is based upon a methodology that does not rely for its success on the ability of any user to forecast the future, and has been proven to work by recent, rigorous research, both industry and academic. It employs a disciplined, risk-focussed, rules-based strategic asset allocation solution that benefits from being well diversified across a broad range of IMA sector-compatible asset classes.

In the FSA review of profiling and investing described above, they emphasised the importance of diversification to investors. Our approach to strategic asset allocation seeks to benefit from what is commonly referred to as the "only free lunch in finance" – diversification.

Figure 1 shows a stylised representation of what happens to the risk of a portfolio as more assets, say equities, are added to it. As the table indicates, the average risk – or volatility – is highest for a single asset portfolio whereas the risk of portfolios comprising progressively larger numbers of assets falls, quite sharply at first, so that the risk of a ten or fifteen asset portfolio is significantly lower than that of a one asset portfolio.

FIGURE 1
Stylised representation of the limit to portfolio diversification.
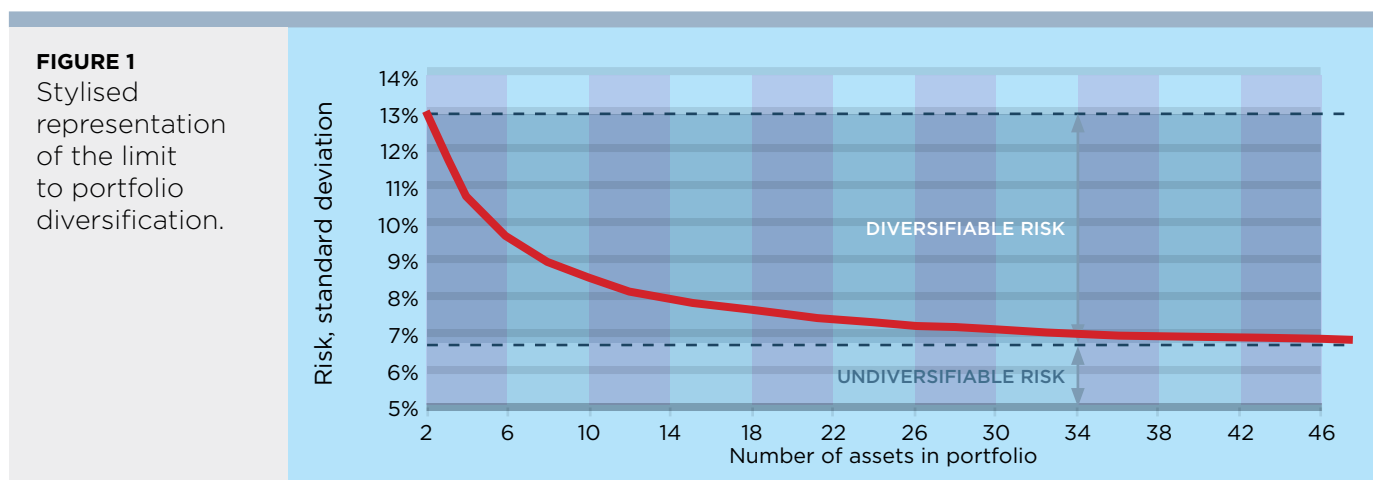
4 The Markowitz Optimization Enigma: Is 'Optimized' Optimal? by R.O. Michaud, Financial Analysts Journal, January/February 1989, Vol. 45, No. 1: 31-42

5 See The 1/N investment strategy is optimal under high model ambiguity, by G.Pflug, A.Pichler, and D.Wozaba (2012), Journal of Banking and Finance, February, 2012.

The sharp decline in portfolio risk comes about from the imperfect correlations among the assets. The risk that can be eliminated by holding a diversifiable portfolio is called, unsurprisingly, "diversifiable risk", since it can be diversified away.

It is important to note, as Figure 1 illustrates, that not all risk can be eliminated through diversification across many risky assets. However, one of the important lessons of modern portfolio theory was that through effective diversification investors can improve the risk-adjusted performance of their portfolios.

Our approach to strategic asset allocation allows investors to dine on this free lunch by providing a set of strategic portfolio recommendations that span a wide range of broad, IMA sector-compatible asset classes.

Demonstrating the risk-balanced approach to asset allocation

There has been growing dissatisfaction with apparently sophisticated optimisers which simply give us the answer that we have put into them, and which often produce unrealistic portfolios unless heavily constrained by the user. In response, there is now a growing body of academic evidence that shows that alternative and simpler approaches to the same asset allocation problem, produce results that are at least as good as those produced by the most 'sophisticated' optimisers.

We will outline this process by applying it to five broad asset classes:

FIGURE 2
Five broad asset classes...

...within which exposure is achieved in the following IMA sectors...
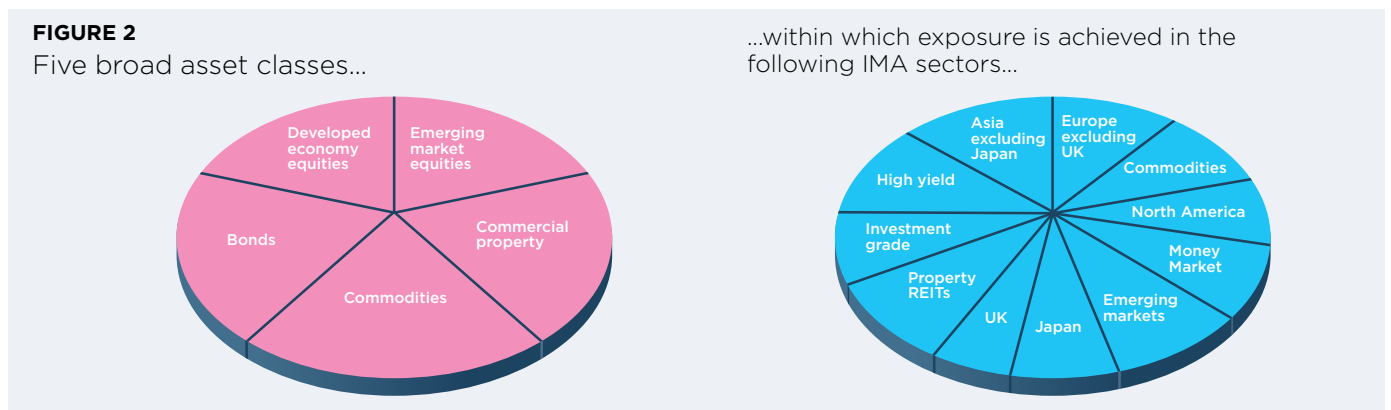
There are literally an infinite number of ways in which we could allocate capital between this set of asset classes. One such approach, referred to as 1/N investing, advocates allocating equal amounts of capital to each of the asset classes of interest. So, for example, if there are ten (N) asset classes then the approach simply requires that each asset class has a weight 10% (1/10). Any other type of weighting implies that one knows something about the world. In our view, the events of the last few years have shown us that we know only one thing – and that is that we know very little about the future!

There is a further weighting method which we will investigate called Risk Parity, and it involves weighting asset shares to reflect the 'riskiness' or volatility of the asset; in fact the more volatile the asset, the smaller its share will be in the portfolio. We describe this in detail on page 7.

A 2011 study[6] conducted a horse race between representative risk parity portfolios and other asset allocation strategies, including equal weighting, minimum variance, mean–variance optimisation, and the classic 60/40 equity/bond portfolio. While the basic risk parity portfolio does not consistently outperform (in terms of risk-adjusted return) equal weighting or the 60/40 equity/bond portfolio structure, it does significantly outperform such optimised allocation strategies as minimum variance and mean–variance efficient portfolios. Over the last 30 years, the Sharpe ratios of the risk parity and the equal-weighting portfolios have been much more stable across decade-long sub periods than either the 60/40 portfolio or the optimised portfolios. Although risk parity performs on par with equal weighting, it does provide better diversification in terms of risk allocation.

Our approach here is similar in spirit to the 1/N approach to asset allocation, but instead seeks to create multi-asset class portfolios where the risks of each asset class are equal, rather than the amounts invested in each asset class. So an asset class with low return volatility would need a higher weight than one with high return volatility. We refer to this as the 'balanced risk approach',

> **ALTHOUGH RISK PARITY PERFORMS ON PAR WITH EQUAL WEIGHTING, IT DOES PROVIDE BETTER DIVERSIFICATION IN TERMS OF RISK ALLOCATION.**

but it is also referred to as the 'naive risk parity approach'. The evidence for the benefits of this approach can be found both in academic research and in work by market professionals, e.g. Salient Capital Advisors LLC, who show that such an approach actually delivers portfolios which would have been created using Mean Variance optimisation with perfect foresight!

In other words, when we criticised Mean Variance Optimisation earlier, it was partly based on the difficulty with forecasting the future returns, risk and correlations: the risk parity approach actually produces portfolios which are not that far different from those which we would have created if we had perfect forecasting ability!

To illustrate the issue consider Figure 3. This table shows the annualised return and volatility of each of the five broad asset classes listed earlier. The table shows how different the performances of these asset classes were over this period, not just in terms of average return, but also in terms of volatility.

FIGURE 3
Asset Class Returns 2003-2012

	Developed Equity	Emerging Equity	Bonds	Commodities	Property (REITs)
Annual return (%)	10.8	19.1	8.1	5.3	8.1
Annual volatility (%)	14.1	21.1	7.8	15.5	23.0

The balanced risk approach to strategic asset allocation, however, would have produced the following allocations (see full paper for more information):

	Developed Equity	Emerging Equity	Bonds	Commodities	Property (REITs)	
Risk-balanced weight	20%	13%	36%	18%	12%	
Sum of risk-balanced weights						**100%**

As can be seen, this process assigns the biggest weight (36%) to Bonds, since its historic volatility (over a 10 year period in this case) is much lower than that of the other asset classes.

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6 Risk Parity Portfolio vs. Other Asset Allocation Heuristic Portfolios. D.B. Chaves, J.C. Hsu, F. Li, O. Shakernia. Journal of Investing, Vol.20, No.1 pp. 108-118, Spring 2011

This approach can also be adopted within each broad asset class, if required. This ensures that the risks are not only balanced across each major asset class, but also within each asset class. In a series of recent research papers Salient Capital Advisors LLC explore this question beginning with a simple two asset example represented by the S&P500 and the Barclays Aggregate Bond Index from 1978 and 2011. Using this historical data they find that the Maximum Sharpe ratio portfolio (a portfolio maximising actual excess return relative to risk given the benefit of perfect hindsight) and the balanced risk approach, which they refer to as Risk Parity, are indeed very similar. They then compare three ex-ante implementable strategies: 60/40, dynamic risk balanced, and an ex-ante maximum Sharpe.

For the period 1989-2011 the following performance statistics for the monthly rolling models were found (see Figure 4):

FIGURE 4
Dynamic Risk Parity versus other Asset Allocations

	S&P500	Barclays Bond	60/40	Dynamic risk parity	Dynamic maximum Sharpe	Ex-post maximum Sharpe
Sharpe	0.34	0.91	0.51	0.96	0.64	0.95
Excess return	5.1%	3.34%	4.7%	4.1%	3.5%	3.5%
Volatility	15.1%	3.7%	9.3%	4.3%	5.5%	3.7%

Source: Salient Capital Advisors

Figure 4 suggests that the Dynamic Risk Parity portfolio produces performance at least as good as the (theoretically important but non-implementable) ex-post Maximum Sharpe (one which benefitted from the impossible perfect foresight).

The above suggests that ex-ante risk parity allocations (which only rely on past data to calculate volatilities) compare favourably with ex-post optimal portfolios (Mean Variance, Maximum Sharpe), which assumes an unrealistic perfect foresight. Put simply – ex-ante means a portfolio using only information that was available at the time an investment would have been made, whereas ex-post refers to allocations made with perfect foresight. Hence the alleged superiority of risk parity occurs in a context which requires less information, i.e. is 'simpler'.

We also created a practical example using four asset classes for the UK investor-using monthly data for UK equities, gilts, commodities and property for the period 1978-2014. We compared equal weights portfolios with naïve and full risk parity portfolios: the results are shown below (in Figure 5):

FIGURE 5
Portfolio Comparisons January 1978 to March 2014

KEY
EW: Equal Weight
RP(B): Risk Parity (Balanced or Naïve)
RP(WC): Risk Parity with correlations

	EW	RP(B)	RP(WC)
Compound annual return (%)	10.41	10.62	10.20
Annualised volatility (%)	10.87	8.31	7.90
Sharpe	0.35	0.48	0.46
Best month (%)	10.73	7.82	8.12
Worst month (%)	-14.12	-10.20	-8.49
% Positive months	64.14	68.74	67.13
% Negative months	35.86	31.26	32.87
Max. drawdown (%)	36.38	18.58	16.49

In conclusion, we believe that a naïve risk parity approach to portfolio construction has as good a performance as can be expected without the benefit of perfect foresight in predicting asset prices: and even then, risk parity offers much lower transaction costs. Hence we use this method.

We appreciate that the portfolio created by the above risk-balanced process may not produce the sort of portfolio – in terms of risk – that all investors will be looking for. Some will want a less risky portfolio, others will be happier with a more risky portfolio. Below we demonstrate how the basic process outlined above can be extended to accommodate all investors, from the most risk averse to those that can bear a higher degree of risk.

In creating this range of strategic asset allocation solutions we have paid close attention to FinaMetrica's risk profiling process. We offer seven portfolio strategies that broadly align with FinaMetrica's seven risk groups (detailed in Figure 4 below).

First, for investors that wish to invest in a portfolio with lower risk than that represented by the core risk-balanced portfolio we created five alternative portfolios, see below. Each one combines a cash holding with the core risk-balanced portfolio, from 90% of the total holding down to 10%. We refer to these as portfolio strategies 1, 2, 3, 4 and 5 and we can think of these portfolios as representing combinations of the risk-free asset (cash) and the 'market' portfolio (here the 'core', risk balanced portfolio), exactly as advocated by Modern Portfolio Theory-with the added bonus that such portfolios tend to behave over long periods of time as Maximum Sharpe portfolios (with perfect foresight).

Next, for investors with a greater tolerance for risk than represented by the core risk-balanced

FIGURE 6
Performance statistics on the range of our investment strategies

Portfolio strategy	1	2	3	4	5	6	7
FinaMetrica risk tolerance score	0-15-85	0-30-70	10-40-50	30-40-30	50-40-10	70-30-0	100-0-0
FinaMetrica max. drawdown	0%	0%	10%	20%	20%	33%	50%
EC KIID risk rating	1	2	3	4	4	5	6
				% in cash			Min in equities
	90	70	50	30	10	50	100
Compound Annual Return (%)	3.40	4.29	5.15	5.96	6.72	7.56	8.57
Annualised Volatility (%)	1.17	3.28	5.47	7.66	9.87	12.52	17.31
Sharpe Ratio	0.39	0.41	0.40	0.39	0.38	0.37	0.33
Best Month (%)	0.83	2.31	3.81	5.31	6.81	8.49	13.04
Worst Month (%)	–1.14	–4.02	–6.90	–9.78	–12.65	–14.23	–14.59
% Positive Months (%)	81.40	72.87	66.67	64.34	63.57	64.34	60.47
% Negative Months (%)	18.60	27.13	33.33	35.66	36.43	35.66	39.53
Maximum loss (%)	2.23	8.68	15.51	22.16	28.44	33.25	43.30

portfolio we created two further strategies. Each strategy was created by imposing a constraint on the process designed to create the core risk-balanced portfolio. To create portfolio strategy 6 we imposed a constraint that meant that the minimum investment at any point in time in the combination of developed and emerging economy equities was 50% of the total portfolio.

We then constructed a second portfolio, portfolio 7, with the constraint that the minimum investment at any point in time in the combination of developed and emerging economy equities was 100% of the total portfolio. Of course this means that this portfolio comprised no bonds, commercial property or commodities. However, once again, within the developed economy equity broad asset class component the process described above was still applied to find the weights of the individual equity markets.

> **AT THE HEART OF THE CLEVER PROPOSITION IS A MONTHLY REVIEW AND SWITCH PROCESS.**

Clever review process. How should we populate each asset class?

Once the portfolio is constructed, we will demonstrate how it will be monitored going forward. At the heart of the *Clever* proposition is a monthly review and switch process. The *Clever* service scores each fund within each sector against a list of criteria which include Sharpe ratio; Alpha; Average six months performance; Average 36 months relative performance; Relative volatility; Research rating; Star rating; Relative maximum loss and Beta.

FIGURE 3
The fund scoring system

Sharpe Ratio	Alpha	Average 6 month performance	Relative volatility	Average 36 month relative performance	Research rating	Star rating	Relative maximum loss	Beta
8	9	8	9	9	10	10	10	5

Therefore total fund score = **78**
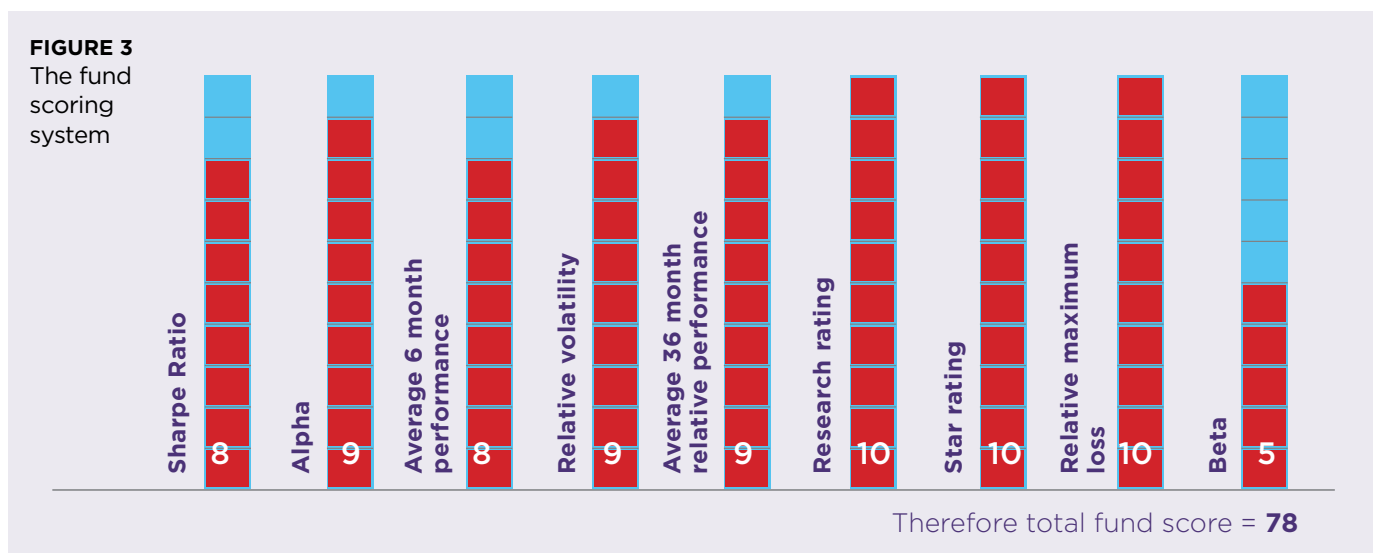
For each criterion, the fund data is normalised, with the funds achieving the best results scoring 10, and the worse scoring 0.

As a result of the monthly review, each fund in a sector is allocated a total score (see Figure 3). If the fund falls below the minimum threshold score (see Figure 4), the sell recommendation is triggered.

FIGURE 4
The sell process

The minimum threshold score

Hold
Threshold
Sell

90
80
70
60
50
40
30
20
10
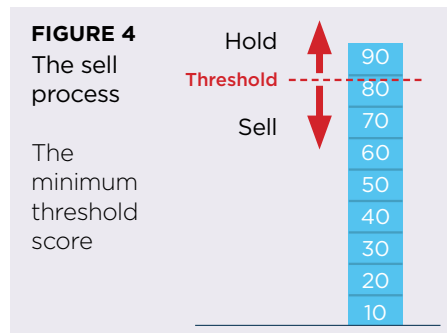
Replacement funds are then recommended using a 'weighted' scoring process to reflect the adviser's choice on behalf of their clients e.g. so if the criterion calculated to produce an efficient risk/return result was, in the case opposite, Sharpe Ratio, then the process attaches a weighting of 9 to its fund score of 10. This process is repeated until the lowest priority criterion, (in this case, Beta) is given a weighting of just 1.

FIGURE 5
The buy process

	Criteria fund score	Our weighting	The Buy score
Sharpe Ratio	10	10 x 9	= 90
Alpha	10	10 x 8	= 80
Ave. 6 month performance	10	10 x 7	= 70
Ave. 36 month relative performance	10	10 x 6	= 60
Relative volatility	8	8 x 5	= 40
Research rating	7	7 x 4	= 28
Star rating	10	10 x 3	= 30
Relative maximum loss	10	10 x 2	= 20
Beta	5	5 x 1	= 5

Total 'buy fund' score = **423**
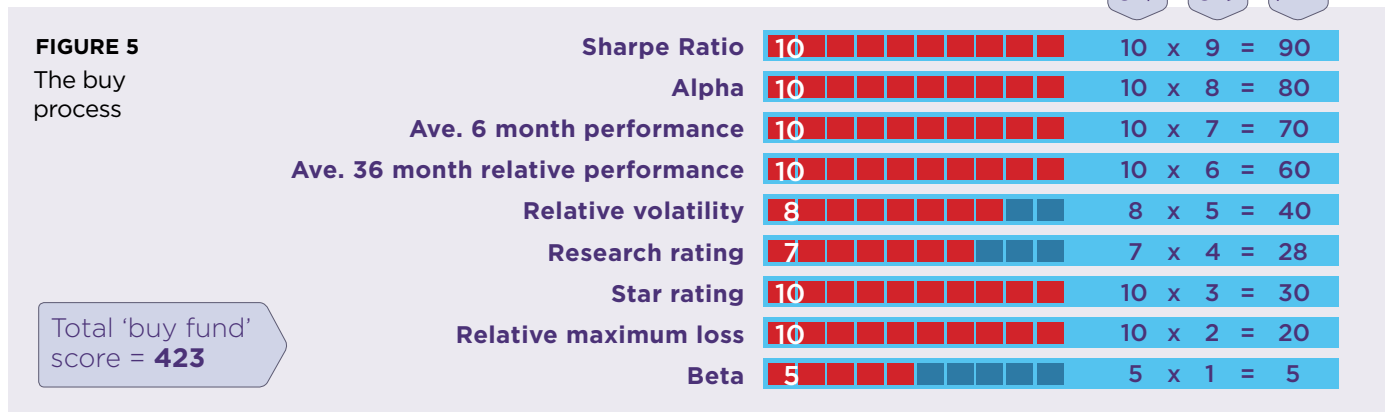
Clever process performance

So how did this *Clever* process perform in the past?

FIGURE 6

Clever performance vs. sector average and benchmark
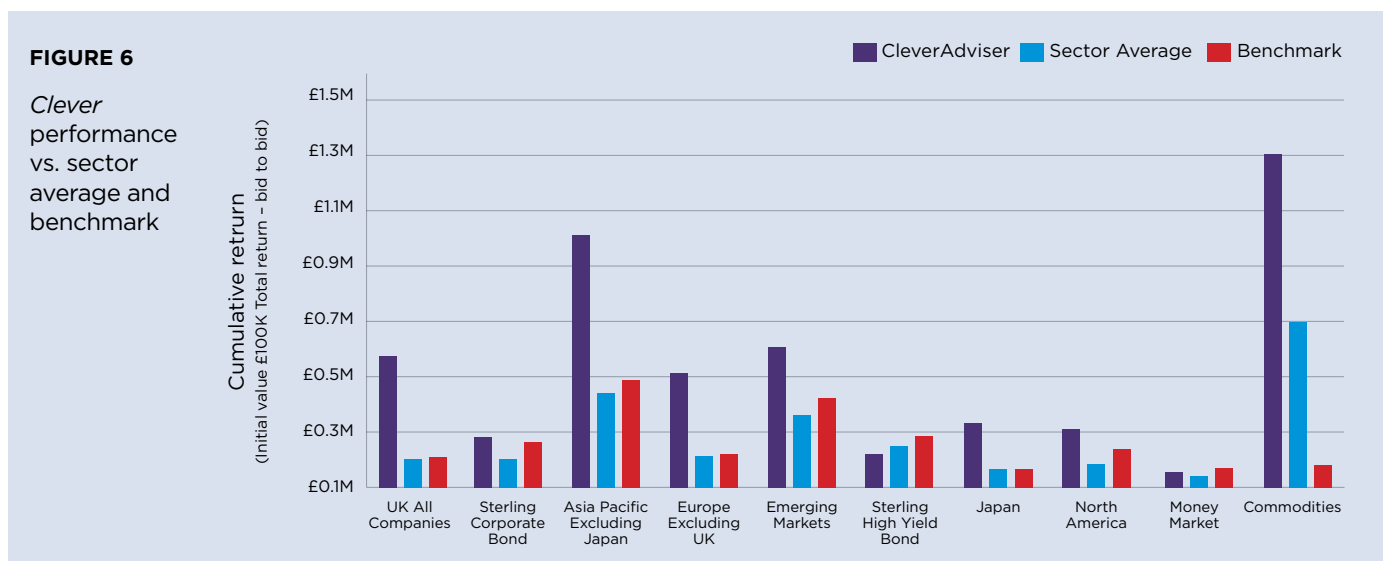
Between 01/06/1998 – 01/07/2014 on a bid-bid basis assuming monies held on the Skandia platform.

Summary

The research paper and this summary demonstrate the advantages of an end-to-end investment process for both clients and advisers alike. For clients, using *Clever* means they experience a process that they can understand. For advisers, using *Clever* provides a compliant, commercial and professional process. It also addresses many of the regulator's concerns following their review of the market place. All this should empower the financial planner and enhance their confidence in the investment process.

So 'balancing risk through strategic asset allocation and populating portfolios with winning funds' is possible and can be delivered in one seamless process. This has to be the holy grail of investment advice.

Contributor backgrounds

Legal disclaimer