1 Target contribution calculation

This is a framework to help guide manager positioning in a direction that makes return objectives achievable. The relevant parameters are:

Parameter		Units	Driven by
T	Target return per manager	bps AUM	Policy
N	Maximum number of live pairs	15 per PM	Policy
F	Position turnover per year	factor	PM
HR	Hit ratio	% of pairs with positive outcome	PM
WLR	Win loss ratio	ratio of upside to downside	PM
U	Expected upside per position	bps AUM	Position
D	Expected downside per position	bps AUM	Position
R	Average return per pair	bps AUM	Position
G	Average gain per pair	bps AUM	Position
L	Average loss per pair	bps AUM	Position

Average pair gains (G) and losses (L) are linked to expected pair upside (U) and downside (D) via the hit ratio (HR). The average pair return (R) is the difference between avarage pair gains and losses:

$$G = U \times HR \qquad \text{Average gain vs Expected upside, hit ratio} \qquad (1)$$

$$L = D \times (1 - HR) \qquad \text{Average loss vs Expected downside, hit ratio} \qquad (2)$$

$$R = G - L \qquad \text{Average pair return vs Average gain, loss} \qquad (3)$$

The manager return (T) is then simply the average pair return (R) times the actual pair number ($F \times N$):

$$T = F \times N \times R \qquad \text{Manager return vs pair number, pair return} \qquad (4)$$

Fund management sets T to a specific level for a particular PM, which in turn determines viable combinations of F and R.

Example: T is set to 133 bps for a manager who implements 15 ideas per year ($F = 1$). This implies a requirement for an average return of 9 bps per pair if the target return is to be achieved.

A pair's average (or the average across pairs) return (R) is the difference between average gains (G) and average losses (L). Therefore, to control the average pair return, we need to control the average gain and the average loss. Combining equations 1, 2 and 3 with the definition of WLR we get an expression linking average returns per pair with HR, WLR and U.

$$R = U \times HR - D \times (1 - HR) \qquad \text{Average pair return} \qquad (5)$$

$$WLR = \frac{U}{D} \qquad \text{Win loss ratio} \qquad (6)$$

$$R = U \times (HR - \frac{1 - HR}{WLR}) \qquad \text{Average pair return} \qquad (7)$$

Equations 7 and 4 are equivalent to:

$$WLR = \frac{1 - HR}{HR - \frac{T}{F \times N \times U}} \qquad \text{Win loss ratio vs PM characteristics} \qquad (8)$$

This is important because the win loss ratio is mainly determined by portfolio construction and stop-loss policy, which *is* under the manager's control. The hit ratio is a function of skill and therefore *is not* under the manager's control.

In fact, every term on the right-hand-side of equation 8 *is not* under the manager's control, while the win loss ratio (WLR) is *partially* determined by portfolio construction and stop-loss policy.

We can therefore use this derived win loss ratio (WLR) value to ascertain whether a manager's portfolio construction and stop-loss approach is compatible with the fund's overall objectives.

In other words, this range of realistic win loss ratio (WLR) values can be used by the manager to drive portfolio construction and to some extent positioning frequency and idea selection.

2 Specific cases

3 Conclusion

The inherent uncertainty of investment outcomes cannot, of course, be eliminated. This framework is designed to help managers make decisions which have at least some chance of achieving the funds investment objectives.