A simple core – satellite investment framework

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Core-satellite investment strategies have been around for decades and come in various shapes and forms. Internationally, portfolios with passive or index core funds and actively managed satellites have been used extensively. For many investors, however, the core-satellite topic seems too complicated and better left for mathematicians, statisticians and actuaries with their references to tracking error, information ratios and kurtosis enough to send most investors heading for hills.

The reality is that no mathematical optimisation model can take into account the greatest factor influencing an investor's success, namely the investor himself. The impact of optimising a portfolio for information ratio or any other quantitative factor is negligible compared to the difference investor behaviour has on portfolio returns. In this article we will discard all the mathematical mumbo jumbo and look at how to utilise a core-satellite approach practically while keeping the investor in mind.

If we take a typical investor's portfolio, which for most local retail and institutional investors typically consists of around four funds. These portfolios are spread across more than one fund manager to reduce manager underperformance, institutional risk and have a bias towards the larger established investment brands. In the last Quarterly Review we examined the individual and collective impact of investors using such portfolios and found that investors in general follow past performers and as a collective this leads to a high concentration in specific funds which in time constrain these funds' performance[1].

A possible solution to this scenario is to implement a simple core-satellite framework which can assist investors in meeting their investment objectives by:

- Reducing the overall costs in the portfolio
- Decreasing the collective impact of investor behaviour on fund returns

[1] A practical perspective on the index versus active management debate – Quarterly Review Q3 2011

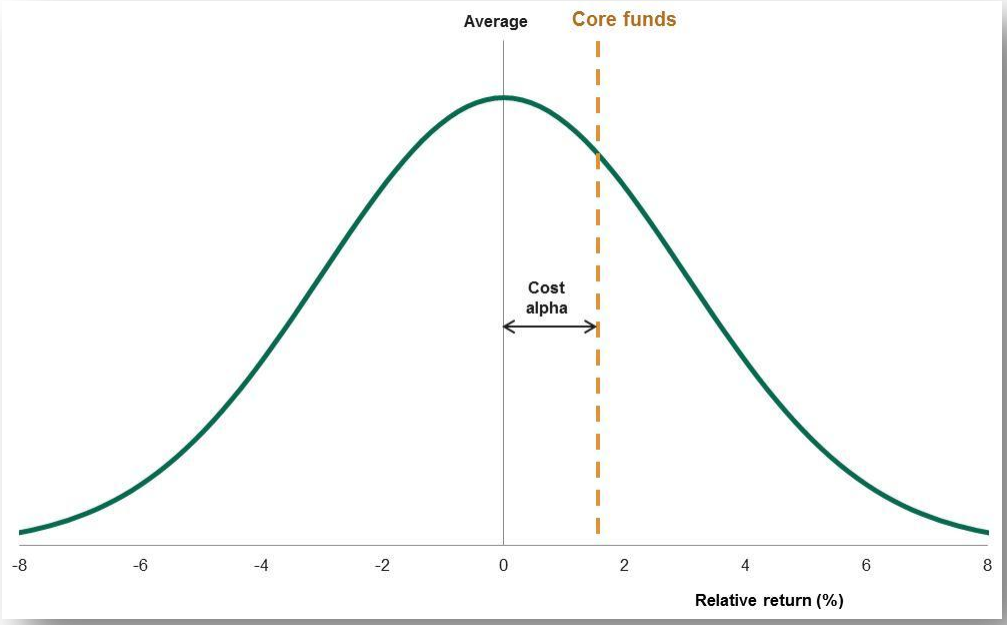
The certainty of saving costs

The cost associated with an investment portfolio is undoubtedly one of the key factors in determining its success over the long term. Costs can be determined before one invests, and any savings in costs will effectively become bankable alpha. In this sense, at the time of investing, savings in costs are certain as opposed to alpha, which is not.

In the table below we have illustrated the saving in cost, or 'cost alpha' of a core or index balanced solution versus the average balanced fund.

Actual total expense ratio calculations	Core	Average unit trust	Difference
Total expense ratio (0% trail)	0.93%	2.27%	1.34%
Made up of:			
Annual management fees	0.50%	1.25%	0.75%
Wrapper	0.25%	0.25%	0.00%
Annual turnover drag	0.07%	0.56%	0.49%
Turnover	15%	60%	
Brokerage	0.11%	0.34%	
VAT	0.11%	0.21%	0.11%

From the table, it is clear that the difference in costs between the average balanced fund and an index solution is not only due to management fees, but the transactions costs, which are normally excluded from published Total Expense Ratios (TER), also have a significant impact. The graph below shows that after costs most managers will underperform an index solution.



A simple core-satellite approach

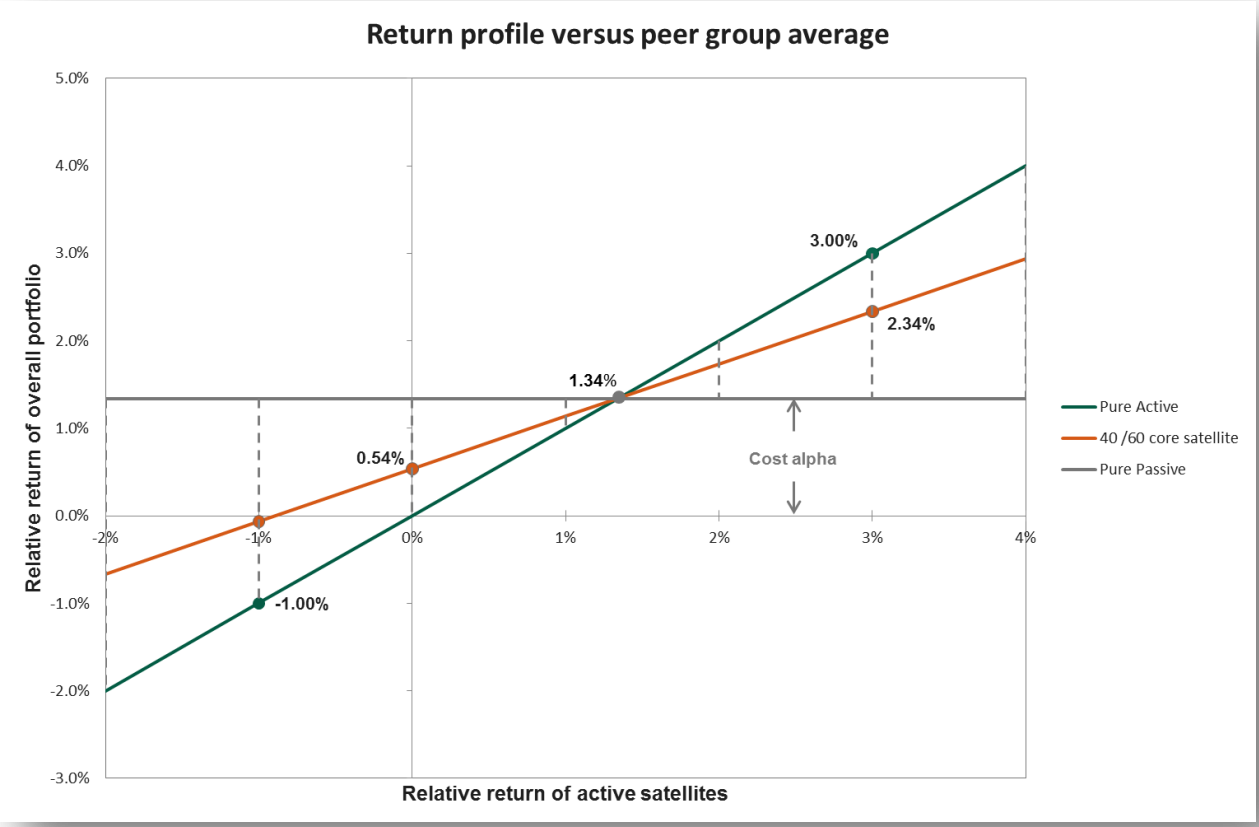
Our starting point for building a simple core-satellite portfolio is the typical investor's portfolio. The table below depicts how different core- satellite models can be built from this portfolio as well as the associated savings in cost or cost alpha.

Core (Passive)	Satellite (Active)	Number of Satellites	Estimated "cost–alpha"
0%	100%	4	0%
25%	75%	3	0.34%
40%	**60%**	**3**	**0.54%**
50%	50%	2	0.67%
60%	40%	2	0.80%
75%	25%	1	1.01%
100%	0%	0	1.34%

We can start by replacing one of the four active funds with a passive core fund which will lock in an estimated cost alpha of 0.34% and still have a potential for traditional alpha over the remaining portion (75%). The active risk in the portfolio can then be systematically reduced by increasing the core portion of the portfolio.

To illustrate the power of cost-alpha in a portfolio, consider a 40% core and 60% satellite portfolio. The estimated cost alpha is 0.54% across the whole portfolio, in other words you have locked in 0.54% relative to the average fund by virtue of cost alone. The overall portfolio's performance then depends on how the satellites do as illustrated in following three scenarios and depicted in the graph below:

1. The average return of the satellites is 3% above the sector average so the overall portfolio will outperform the sector average by 2.34% (0.54% + 1.8%).
2. The average return of the satellites is equal to the sector average so the overall portfolio will outperform the sector average by 0.54%.
3. The average return of the satellites is 1% below the sector average so the overall portfolio will be in line with the sector average.



The core satellite portfolio clearly decreases the overall portfolios risk of underperformance, by reducing the range of possible relative returns in our example from between -1% and 3% to between 0% and 2.34%. Thus only 0.66% is given up in the best case scenario (3% out performance across three satellites would be considered the best case scenario!). It is important to note that these figures are for illustrative purposes only and will change from time to time.