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ALGORITHMIC INVESTMENT STRATEGIES

Perpetual evolution and innovation continues to keep structured equity at the forefront, as one of the most dynamic retail and wholesale market segments of the investment industry

Over the past two to three years we have seen investment processes going first from static to thematic and now to strategy and research based. This closely mirrors the approach of index providers and fund managers. The first evolution saw static stock and index baskets being optimised for price efficiency. Bespoke indexes were next introduced in which the stocks underlying the index would change over time, while maintaining the same sector or investment rationale. More recently, evolution in this area has come from dynamic strategies like the Barclays Kinetic™. For Barclays Capital, this type of strategy is proving to be an important source of development, helping us to maintain our leadership in this field.

Using our derivative technology and delivery platforms, we are able to bring to market the next step, in the form of our Barclays Q-Series™ product suite. It offers a wider audience of investors the potential to benefit from excess returns generated from style-pure strategies with transparency and liquidity. Of particular interest is the quantitative approach to strategy development and implementation, which allows investors to effectively define their investment ‘package’ in a bespoke manner.

There is no doubt about the direction in which the structured investment market is heading. Current press coverage popularises the quest for alternative beta and quantitative alpha strategies. Meanwhile, the market has become adept at delivering products quickly and efficiently, even for relatively small investment size. The Q-Series, with its emphasis on style control and accessibility through a range of delivery formats, brings the foundations necessary to help investors customise their own investment portfolios to suit their risk profile. Delta one, capital protection, leverage, or cash overlay, for example, are all features that can be offered.

Developed as a ‘concept approach’, investors and risk managers can readily benefit from this system, which allows us to customise to the relevant level and deliver in a suitable wrapper. Our palette currently counts a variety of wrappers including swaps, notes, certificates and funds.

AN EXCITING NEW DIRECTION IN THE CREATION OF INVESTMENT VALUE

No longer concerned with returns alone, more and more investors wish to control the amounts and types of risks to which they are exposed, by being able to identify the sources and characteristics of performance:

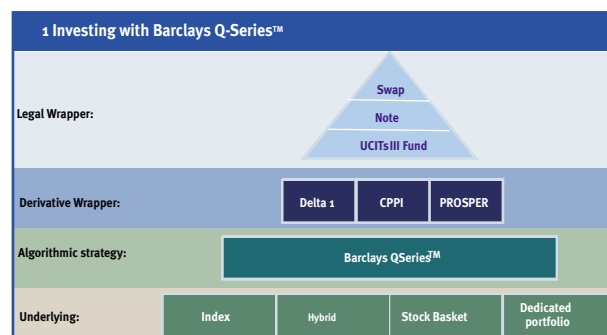
- Alpha
- Beta
- Style stability
- Liquidity
- Cost efficiency
- Transparency

By enabling investors to identify the sources of performance, algorithmic investment strategies allow investors to better manage the types of risk they are willing to take. For example, such strategies can offer exposure to an investment approach with characteristics similar to those of actively managed funds (long/short equity, relative value or global macro, for example) while integrating some of the features of structured investments – namely systematic process, full or partial principal protection at maturity, daily liquidity and flexible delivery. This level of control and transparency is of tangible value to investors in the risk management process

INVESTING: THE MIDDLE ROAD

While algorithmic strategies may deliver some of the same characteristics as actively managed funds, there are some distinct differences. It is precisely these that place algorithmic strategies between actively managed vehicles such as hedge funds and passively managed vehicles such as ETFs. From an investor standpoint, the absence of discretionary aspects of the investment process, for example, allows algorithmic and quantitative investment strategies like those of the Q-Series to maintain style consistency, while avoiding performance-related fees and mitigating some important elements of operational risk. One could argue that due diligence is integrated within each strategy, with the investment process remaining constant and true to the investment objective.

By isolating the traditional elements of structured investments, investors may achieve more effective asset allocation through specific alpha generation, management of beta exposure and diversification, while addressing specific risk management needs. In the following paragraphs, we will turn our attention to a specific algorithmic strategy and its possible applications by examining Metric-adjusted Alpha Return Strategy (MARS), one of the most recent additions to the Barclays Q-Series™.



Source: Barclays Capital

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MARS historical simulations		
Date	Summary of index	
	S&P 500	MARS
Index level April 1997	100	100
Index level April 2007	184	904
Equivalent to (per annum)	6.1%	23.7%

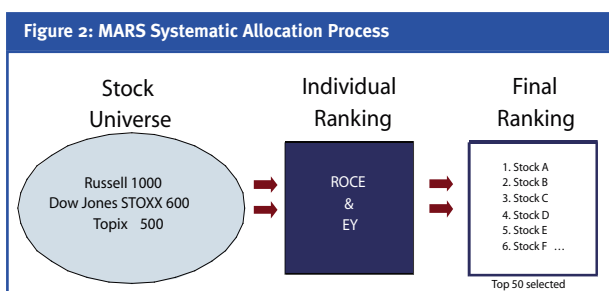
Source: Barclays Capital
Any data on past performance, modelling or back-testing is no indication as to future performance.

MARS: METRIC-ADJUSTED ALPHA RETURN STRATEGY

One of the most basic stock investment strategies consists of timely identification of undervalued stocks. However, the choice of measurement criteria is essential for the successful implementation of this strategy on an ongoing basis. As an algorithmic investment strategy, MARS aims to generate potentially high returns by establishing a dynamic and systematic investment process. This is achieved by quantifying the stock-selection process based on the use of a specified set of financial measures, or metrics. In doing so, MARS aims to mirror risk exposures similar to those of traditional stock-picking strategies, with the style purity of a quantitative investment algorithm.

In determining the optimum investment characteristics for the strategy, various metrics such as earnings yield, return on capital, free cash flow and others were computed over different time horizons in order to measure the correlation between those metrics and subsequently realised returns. Back-testing results indicate that, on average, there has been a strong bias for positive returns based on metric-ranked investing. The analysis also shows that this effect is more prominent for shorter investment periods and that there is time enough to receive market information, analyse it and implement the strategy. Taking this into account, the MARS model ranks stocks on a quarterly basis using earnings yield and return on capital employed and invests accordingly. At the end of the quarter, the portfolio is reweighted and the strategy continues (see figure 2).

From an investor perspective, MARS constitutes a dynamic long-only underlying, which can be integrated into any number of derivative overlays to match the risk profile of the client. Bonus income, cash plus and 130/30 structures, for example, can all be accommodated. In turn, these investments may be delivered in various forms such as regulated fund, note, swap and certificate depending on regulatory requirements or other investor preferences.



Source: Barclays Capital

Seen in this light, algorithmic investments such as MARS and other members of the Barclays Q-Series™ allow investors to take a much more active approach to structured equity investing. In the above example, the investor may choose the structure that fits their investment needs in terms of return, protection and geographic exposure, by building a fundamental asset which integrates a risk overlay with derivatives. As mentioned previously, by separating the different elements of structured investments, investors not only achieve a new level of personalisation (stand-alone investment strategy, risk management, legal wrapper), but also tap into a new middle ground between actively managed funds, such as hedge funds, and passively managed funds, such as exchange-traded funds. Investors who can benefit include asset managers, insurance companies and pension schemes, private banks, corporates and others.

Algorithmic and quantitative investments form an integral part of our continuing equity derivatives development strategy. By combining extensive derivative technology and comprehensive delivery, we continue to provide tailor-made structured investment solutions to meet the changing needs of our clients in all aspects of the investment process.

The Barclays Q-Series™

In response to the changing landscape of the structured equity industry, Barclays Capital has taken a leading position, developing a growing range of quantitative and algorithmic investments: the Barclays Q-Series™. These products and strategies exploit systematic themes, investment opportunities in implicit assets such as correlation, dividends and volatility, as well as various systematic trading strategies.

One unique feature of the Q-Series approach stems from our ability to use the strategies within a bespoke framework to assemble structured assets by providing the following:

- Style control through Q-Series strategies that provide investors with the necessary tools to determine and build their own risk profile.
- A 'concept approach' rather than fixed structures to ensure a high level of flexibility and adaptation.
- Customisation of the structured asset through selection of underlying investment universe, risk profile overlay and delivery mechanism.

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