



Designing automated FX trading strategies for Managed Accounts



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Automated processes in the financial field have for a while been the subject of deep interest and evolution, especially since the breakthrough in several areas of computer science in the 90s. Applied to the investment management process, such interest has been leading to a quest of even more integration of the financial decision-making events chain, and such integration finds its ultimate expression and purpose with the so-called automated strategy.

Logically, and not without irony, the same advances in information technology are to the benefit of both automated processes and market efficiency. As it is easier to exploit identified market inefficiencies with an automated strategy, those inefficiencies become scarce and much harder to detect for the same reasons.

Automated strategies can be roughly categorized by the environment in which they operate, whether they are deployed by a sell, or buy-side firm. The way they are trying to generate alpha or absolute returns gives interesting information and clue on their core process. Sell-side firms can be using automated schemes, algorithms and automated strategies to exploit the advantage they have from their privileged access to the transaction flow, clients' trading patterns and market activity. Here, the strategy does not seek to exploit directly exogenous inefficiencies, but are trying instead to optimize and speed up their procedures, especially over the execution process.

Automated strategies characterized by high volatility

Automated strategies can have a decisive edge in volatile markets because they

ignore, if properly designed, cognitive and behavioral biases that are very likely to occur in such environment. In other words, the automated strategy may create value from its ability to deal with unusual market situations, high volatility, where the chance is higher to have other market participants reacting and handling their investments irrationally, thus increasing the room for inefficiencies. Automated strategies can be able to check these inefficiencies quickly enough to exploit them. Even in the case of a strategy adjusting itself dynamically has those variables defined in quantitative terms, therefore being no subject to behavioral biases.

However, the market efficiency is significantly high, even during times of market turmoil, hence generating alpha in an efficient market remains a challenging task. As the market efficiency is higher in foreign exchange and benchmarking more difficult, currency managers often use an absolute return as a benchmark, relaxing some constraints of the performance appraisal process as a result. In studying the mechanisms of an automated strategy, it is wise to judge the appropriateness of the methods used for reporting performance and characterizing the strategy.

Choices facing FX Investors

As market efficiency increases and the opportunities for automated strategies broaden, investors are faced with choices that are not straightforward to deal with. The most crucial criteria in assessing an automated strategy is the information available about the core process of the strategy, how and where it aims to generate its return. Transparency in this informative process is of paramount importance. Providers may be tempted to use the technical aspects of the strategy specification, or algorithmic complexity as a reason to explain and justify the lack in the information they provide to their potential customers, arguing that telling more would jeopardize the unique characteristics of the strategy, classifying some necessary information as proprietary. Such arguments are fallacious, smart investors avoid any automated scheme that prevents them to properly account for suitability concerns and judge the strategy within their own risk and return objectives framework. So, the right to be informed about how the strategy operates should come before any assessment about the performance presented. Once opaque schemes are eliminated and enough information is gathered, investors should analyze the ability of the provider to

use consistent and robust input data. A firm that is reputed for its technological edge may be a good choice for automated strategies, but such a firm is also well placed to use its edge against the best interest of all its customers, especially on the sell-side. Technical reliability, mastering the purpose of the automated strategy, reporting ability and cost considerations will help the investor in finding the appropriate automated scheme, assuming he/she has a need for it.

Advantages of automated strategies for Managed Account operations

The main advantage of automating an investment strategy is to avoid the psychological oriented handling and behavioral traps often present at numerous stages of a classical investment management process. Provided the decision-making procedure is fully automated, there is no possibility for human intervention as the process is running and accomplishing its program cycle. It is assumed here that behavioral and psychological biases are an additional risk placed on the investment process, rather than being beneficial to the decision-making.

By designing the decision-making scheme through mathematical engineering, the automated strategy cannot have its outputs biased by exogenous causes outside those that are used by the strategy to perform market analysis. In other words, the outputs cannot be influenced and biased by causes external to the strategy itself, nor can they be identified as such by the strategy. In addition, and that reflects another advantage, the process leading to every output of the strategy can be easily tracked, stored and reported ex-post, is fully available in quantitative terms, which gives potential useful information for the fine-tuning of the model or strategy used, and for the acceptance or rejection of hypothesis drawn by the strategy. Another decisive advantage lies in the capacity of processing a mass of information in a fast and continuous way. As market data inputs are received and accumulated, the strategy can cope with huge and increasing amount of data, perform several calculations with it, then produce outputs to the investment management process that gives





signals to act on the market, or not. This high frequency cycle is a unique characteristic of an automated strategy.

Differentiators

Trading technology is at the heart of the operating process of an automated strategy, therefore, it is a crucial issue when considering the implementation of the strategy. In addition, technological edge along the entire chain of the investment management process is a requirement for further integration. The technological edge can provide for a thorough optimization of the whole trade sequence. Therefore, the time necessary for processing the sequence of decision-making and investment action can be reduced by integration. In short, the trading technology deployed can be a decisive factor in optimizing:

- the calculation processed by the strategy
- the speed of execution of signals generated by the strategy,
- the booking of the transaction
- any straight-through settlement processing deemed necessary
- performance reporting and appraisal
- the entire control procedure at each step of the described sequence.

Catering for all types of risk appetite

A strategy design goes through several stages of development. At each stage, specific issues are encountered which tend to overlook the whole process while focusing on questions raised in that particular stage of development. At every stage of the development, the firm must be able to consider any specific issue in light of the whole process. At some point, the development may be problematic because some important issues have not received the attention they would have required earlier in the process. Especially, the core of an automated strategy lies in the analysis of the market input data in order to generate signals for taking exposure. However, the translation of signals into investment decisions are driven by almost endless criteria, depending on the degree of flexibility allowed to the strategy. While a strategy may be designed for a single purpose, client



or portfolio, the operating core of the strategy may be extended for use to more recipients that share common characteristics, but with unique circumstances each. In other terms, an automated strategy needs to be highly configurable in order to offer flexibility when recipients have different profiles for investment, regarding suitability concerns, risk objective and unique circumstances. In some instances and depending on outputs given by the operating core of the strategy, it would not be possible to use only parameters to adjust for different client's profile, and the core must be modified, or another strategy used.

Key functionality

The design of the automated strategy must be flexible enough to account for a large set of possible scenarios. These scenarios should be drawn on the various tasks the strategy has the control over. These tasks include the handling of raw data input, the generation of signals, the checks made on criteria, whether these checks are conducted on specific account information or on the core outputs and finally on the boundaries applied to the parameters of the strategy. This stress testing, and scenario analysis ability is of paramount importance with managed accounts. The manager bearing the final responsibility of actions performed by the automated strategy must know the behavior of the strategy in a large number of possible scenario paths in advance.

White-labelling

The design, development, testing, implementation and operating of automated strategies is, still today, a complex process, quite demanding in terms of competencies in different fields like finance, trading, economic theory, computer science, and other engineering areas. Dispersion of such resources is not desirable because the mastering of the entire process is necessary; the responsibility should not be fragmented.

All processes used in automated strategies remain subject to reliability issues.

As a result, we think that the whole process should remain in clearly defined and identified hands. The only appropriate reason for white-labeling automated strategies perhaps is with respect to legal issues where the law and regulation would require having the process of decision-making, trading actions, and reporting or appraisal being separated between different legal entities. From a risk management view, it is unlikely that an automated process will deliver its full operational capacity where the responsibility of different aspects of the strategy are not centralized. In our opinion, fragmentation in this specific case would likely mean dilution of responsibility.

Future innovation and strategy development

The future of automated strategies will probably depend on their ability to either generate solid and consistent alpha over time and to implement any investment scheme with competitive cost. It is probably also safe to say that the technological evolution itself, and the quest for even more efficient processes, will be enough for keeping this area of finance alive in almost every market underlying environment. Automation is not an evolution that is prone to reversion, and the design of automated strategies will gain in complexity, their use broadening to more investment schemes, asset classes, and category of investors. We think that one of the innovation derived from this vivid field could be in the tailoring of automated strategies. If such a view proved to be true, investors will have greater and greater insight over a wide range of base products which they should be able to self adjust to their own needs and objectives, this process itself being automated to an extent unknown, and perhaps unthinkable today.