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The Evolution of FX Algos:

From "Nice to Have" to "Need to Have"

GREENWICH
ASSOCIATES

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THE ALGO LANDSCAPE IN FX WILL INCREASINGLY LOOK LIKE EQUITIES, WHERE TRADERS SEE ALGOS AS A CRITICAL PART OF THEIR DAY-TO-DAY EXECUTION

NEARLY 60% OF RESPONDENTS NOTE THAT ALGOS HAVE MATERIALLY REDUCED THE OVERALL COST OF TRADING FX

Executive Summary

For the better part of a decade, electronic trading has been ubiquitous in the institutional foreign-exchange market. As early as 2007, over half of buy-side institutions trading FX were executing trades either via third-party platforms or banks' proprietary systems. As institutions get more sophisticated, however, they are demanding more advanced ways of executing their FX transactions.

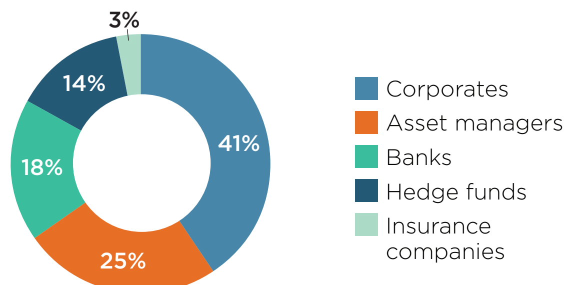
In recent years, FX investors have been turning to algorithms to access multiple liquidity pools, reduce their trading costs and improve execution quality. Once a tool primarily used to execute equities trades, algos are becoming increasingly popular with FX traders from institutions and corporates alike. However, many buy-side traders are still hesitant to opt for an execution method that requires them to pay a "fee." What we have found in our research, though, is that as traders more actively use algos, their overall execution costs have dropped meaningfully.

Given the myriad benefits that algos offer, FX traders currently not using algos (and not considering them) may soon have to determine whether they're putting themselves at a disadvantage by not leveraging all the available tools to achieve the best outcomes for their institution and clients.

METHODOLOGY

Between August and September 2017, Greenwich Associates interviewed 79 FX traders at hedge funds, asset managers, corporates, and other types of financial institutions in the United States and Europe to gather their perspectives on the perceived benefits of using algos to execute FX trades, insights into their decision-making process on selecting an algo provider, if they do not use algos, why, and how they use TCA as part of their investment process for FX.

RESPONDENTS



Introduction

For many years, investors have had the ability to access the FX market directly, either through a third-party platform such as FXall or FX Connect, or via a bank's proprietary trading system. Executing transactions in this manner has reduced operational burdens for FX traders and has given them the ability to spend more time interacting with dealers directly on the most complex transactions.

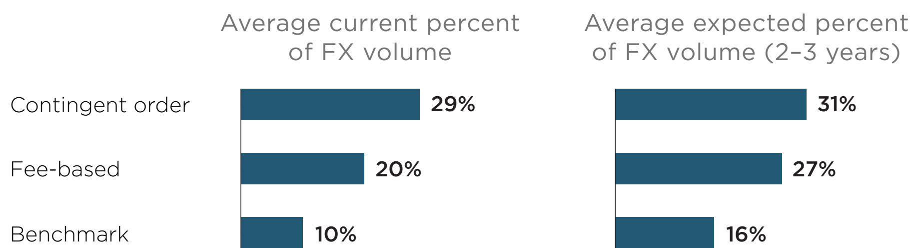
FX traders are now adding a new tool to their arsenal which, until recently, was found only in the equity markets—execution algorithms. Initially, these algos were used only by the most sophisticated investors, but as Greenwich Associates research shows, FX traders are directing more flow through algos and are now treating them like more traditional execution methods.

FX traders are now adding a new tool to their arsenal previously found only in the equity markets—execution algos.

Our research indicates that approximately 10% of all dealer-to-client FX volume is executed via algos. This pales in comparison to the equities market, where over half of all volume is traded via an algorithm. Despite this seemingly large gap, we anticipate that over the next few years, the market for FX algos will look more and more like equities. With the push from regulators, as well as best-execution committees and policies, traders are going to need to reduce costs while maintaining (or improving) the quality of the execution—two benefits that algo users realize.

We are starting to see this evolution. Although only 1 in 10 FX traders currently executes with algos, Greenwich Associates research has found that 1 in 4 of the largest institutions use them. When they do, it can be for upward of 25% to 30% of their volume.

CURRENT AND FUTURE ALGOS USAGE



Source: Greenwich Associates 2017 Future of FX Algos Study

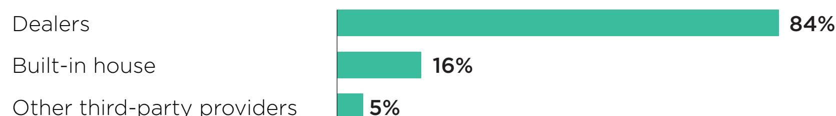
TYPES OF FX ALGOS

Algo Type	Style	Description
TWAP	*Passive*	**Time-Weighted Average Price** algos distribute orders evenly over a period of time. This algo is often used to trade during a fixing, as the fixing price is itself a time-weighted benchmark price.
Float	*Passive*	With this algo, orders are pegged passively to the near touch and are able to capture the spread by trading against incoming aggressive orders.
SOR	*Aggressive*	A **smart order-routing** algo is typically used to rapidly execute smaller orders by simultaneously routing to numerous liquidity venues.
VWAP	*Passive*	True **Volume-Weighted Average Pricing** is not possible in FX markets without a consolidated tape of all trades. Many vendors try to replicate a VWAP trading style by estimating market volume.
POV	*Passive*	True **Percent of Volume** algos would require a consolidated tape of all trades, but in FX markets, vendors replicate this product using estimates of market volume.
Fixing	*Passive*	This algo is designed specifically to try and achieve a fixing benchmark price.

Choosing an Algo Provider

Historically, the FX market has been dominated by bilateral dealer-to-client relationships. In addition to the liquidity that dealers provide, buy-side institutions rely on banks for their sales and research expertise. Given these relationships, it is not surprising that clients primarily turn to dealers to provide algos. On average, nearly 85% of buy-side traders in the study reported using algos provided by their FX dealers.

PROVIDER OF ALGOS

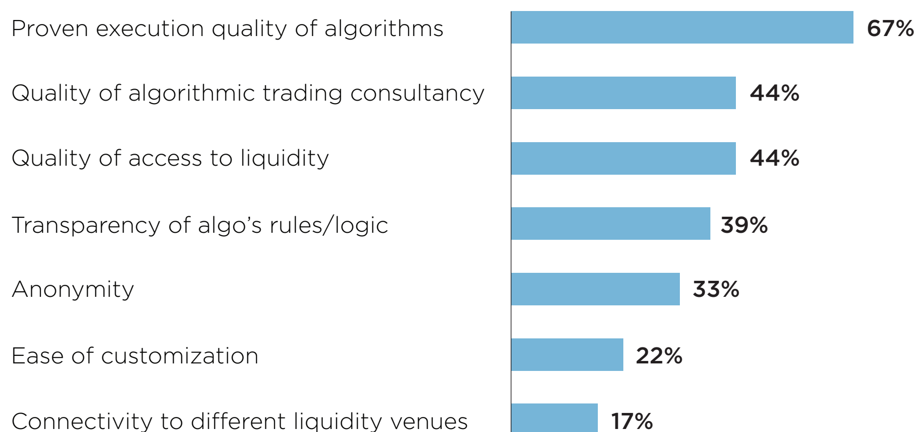


Source: Greenwich Associates 2017 Future of FX Algos Study

With more of their trading workflow conducted via algos, traders are doing their due diligence when selecting which algos to use. Historically, the strength of dealers' marketing efforts were one of the prime determinants of how widely used their algos would be. With the pressure by regulators and investors, combined with the growth in independent data providers such as BestX and ITG, clients are moving more toward a factually based decision-making process.

First and foremost is an analysis of the execution quality that an algo can provide. The ability to prove execution quality was named by two-thirds of respondents as a top selection criteria—well ahead of the quality of dealer-provided consultancy or the quality of access to liquidity the algo provides.

TOP CRITERIA IN ALGO PROVIDER SELECTION



Source: Greenwich Associates 2017 Future of FX Algos Study

Some of the largest and most active asset managers and hedge funds may use upward of 10 or 15 algos on a regular basis to execute their FX trades.

Because of the premium that traders place on execution quality, they are also getting smarter about tailoring their algo usage to particular situations. Rather than opting for a "one size fits all" model, using one customizable algo for all types of trades, FX traders are instead using multiple algos for different scenarios. Among these multiple algos users, 57% report using different algos for different execution requirements. In fact, some of the largest and most active asset managers and hedge funds may use upward of 10 or 15 algos on a regular basis to execute their FX trades.

Liquidity Analysis

A key part of any discussion about execution quality is the quality of liquidity to which the algo provides access. An algo could be based on the most sophisticated set of code imaginable, but if it does not provide access to sufficient liquidity, the benefits quickly vanish.

Over 70% of FX traders analyze liquidity prior to adopting a particular algo. For some, it is informal: "We want to determine if the liquidity is strictly in-house or if they have access to outside liquidity as well. This is all done through informal dialogue—no formal analysis." For others, it is

more sophisticated: "If you really want to evaluate the performance of an algo, you probably need to run it a dozen times. I probably need to run all the algos at my disposal, and that will mean thousands of tests."

Even recently, algo providers were hesitant to provide many analytics on this front, as details around venue selection or how the smart order router works could be considered a dealer's intellectual property. However, as traders are less likely to accept the response of "trust us," dealers are becoming more transparent in the amount of information that they provide to a client selecting an algo.

When it comes to analyzing routing decisions or which venues an algorithm can access, the FX market is not yet as advanced as equities. As algos become more ubiquitous, more scrutiny will likely be placed on rules and behavior. However, there are some considerations when thinking about the various types of liquidity to which an algo can provide access:

1. **All algos that provide access to similar external liquidity pools (e.g., Hotspot, GAIN, etc.) may not tailor what is included in those pools the same way.** Banks can customize many parameters of the liquidity in a particular pool (e.g., last look and latency of round trips), and understanding these nuances is critical when analyzing an algo. Algo providers invest a significant amount of resources to review the liquidity that their algos interact with, as well as the standards to which they hold each venue.

2. **Buy-side institutions that place a premium on getting access to a bank's internal liquidity pool should understand that the depth/breadth of each dealer's internal liquidity pool varies.** The larger a dealer's pool, the more that can generally be internalized. Furthermore, the attributes of the flow that are included in each dealer's pool can vary widely. These differences can also vary instrument by instrument and can have a meaningful impact on the cost of execution for the buy side. Key considerations for traders include:

    a. **How robust is the dealer's internal liquidity pool?** One of the key benefits of using an algo is the ability to clear risk at or inside the primary market spread, while minimizing market impact. By using an algo of a leading FX dealer, a trader can ensure that they are able save on execution costs and also that their trades do not have a negative impact on the level of that currency pair post-trade.

    b. **How diverse is a dealer's client base?** By choosing a dealer that has a diverse client base (e.g., corporates, real money accounts, hedge funds, etc.), traders can ensure that they are consistently getting access to high quality (and diverse) internal liquidity when they are using a dealer's algo.

c. **How good is a dealer's client service?** Although a high level of service cannot trump execution quality, many traders note that the dealers whose algos they use most frequently have a team to support them to answer questions around internalization rules, fees, etc.

3. **The use of algos raises the need for independent data/tools to ensure that the execution costs are as good (if not better) than the potential costs for executing in another venue.** Traders need to regularly monitor the performance of each of their algos to ensure they continue to provide effective execution.

Algo Fees

Historically, the majority of FX trading was conducted over-the-counter between a dealer and a client. Unlike in the equities market, where traders are used to paying a commission to execute a trade, clients in other markets are used to "paying" via a spread baked into a dealer's quote. Shifting trading to an algo means that traders now have to factor in the "toll charge" in their calculations of the costs of trading FX.

Despite this, for most traders, the direct costs of using an algo are generally not a key part of the equation. Algo users typically see their overall executions decrease meaningfully when using an algo and, therefore, the benefits (in terms of execution cost savings) far outweigh any fees for algo usage.

As one trader mentioned, "Algos give us price efficiency. Because they are very intelligent, they have an access to liquidity which we normally would never get. The result is that we can save money even though we're paying a fee on top. And this makes them efficient with respect to the cost."

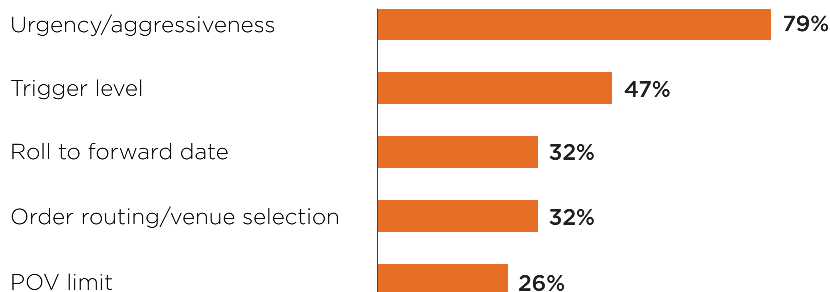
For the majority of algo users, usage fees are less important than the execution quality or the algo's ability to access a broad range of liquidity pools.

To Customize or Not to Customize?

When traders who did not use algos were asked for the key factors holding them back, one of the top five reasons was feeling that they could not sufficiently customize the algo to meet their needs. As previously mentioned, sophisticated users typically opt to have a suite of algos at their disposal to meet various execution requirements. When forced to choose between having access to a suite versus one single customizable algo, 2 in 3 algo users say they are better off with a suite of algos.

Even when they do customize the parameters of an algo, the most frequently customized parameter is the algo's urgency/aggressiveness, followed at some distance by the trigger level. Few traders are customizing more advanced features of an algo, such as order routing/venue selection.

CUSTOMIZED ALGO PARAMETERS



Source: Greenwich Associates 2017 Future of FX Algos Study

Executing a Trade via an Algo

Once a trader has an algo or suite of algos at his or her disposal, the next decision is whether to use an algo for a particular trade. Greenwich Associates probed algo users on this specific topic and heard a consistent refrain: There are no hard and fast rules for when to use an algo versus other execution methods. Each trader has their own informal rules as to when using an algo makes sense, but none has a true formal process mapped out. Until algos are more widely adopted—and there are more data points available—we expect this trend to continue.

Typically, a trader will first address whether the trade needs to be done immediately. If the answer is no, then whether to use an algo must be determined. Traders will often consider market volatility conditions, as some algos perform better or worse depending on how volatile a particular market happens to be. The size of the trade relative to the currency pair is another consideration.

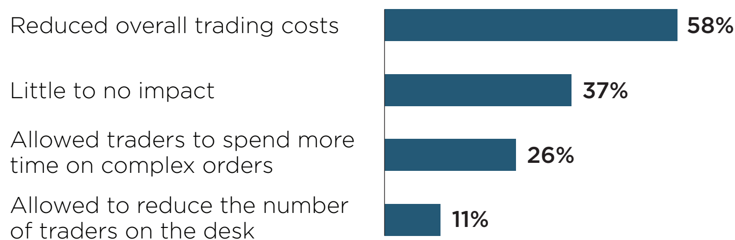
If the trade is a relatively modest size in a highly liquid currency pair, opting for an algo will not necessarily yield material benefits over other execution methods (voice, traditional RFQ on platforms, etc.). However, when a trade could potentially move the market, having an algo at your disposal can reap tangible benefits.

DRIVERS OF DECISION TO EXECUTE TRADE VIA ALGO

Source: Greenwich Associates 2017 Future of FX Algos Study

In terms of the impact that algos have on their trading desk, nearly 60% of respondents note that they have materially reduced the overall cost of trading FX. Additionally, over a quarter mentioned that using an algo means that their traders can spend more time on complex orders.

IMPACT OF ALGOS ON TRADING DESK



Source: Greenwich Associates 2017 Future of FX Algos Study

Set It and Forget It...or Not

Given that some trading desks have more than 15 algos that they use on a regular basis, reviewing how those algos are performing is necessary. Just over half of the FX traders interviewed are reviewing algo performance on an ad hoc basis, with most of the remainder doing so on a monthly or quarterly basis. Typically, traders look at the overall cost of execution, the market impact of their trading, the speed of execution, and the fill rate.

Regulations such as MiFID II and pressure from investors will push traders to move past using TCA as a simple "box checking" exercise and, instead, view it as a value-adding part of their trading process. Even though nearly two-thirds of traders use data provided by their dealers to evaluate algo performance, traders are also turning to third parties like BestX for information to assist in this process. They are also becoming more demanding in the information they request. As one trader mentioned:

> **[I'm looking for] detailed reports where I can see each and every chunk of the trade that has been broken up, and I can see the spreads for every part of the execution. There may be hundreds of pieces, 1 million, 2 million etc., and I want to see when the spread was executed... This is a very important cost analysis.**

The results of this analysis are not being collected or used in a vacuum. Despite increasing pressures on firms to prove that they have achieved best execution (and algos are quickly becoming a tool to aid in this), nearly half of FX traders in the study say that using TCA has changed the way they are trading. Increasingly, traders are taking the results from their TCA process not only to prove that they have achieved the best outcome, but also to help inform their decision-making process in the future.

The Hurdles to Adoption

Even though demonstrable benefits to using algos exist, adoption rates have been slow to rise. If most algo users are seeing a reduction in their overall trading costs and are now able to spend more times on complex orders, why would any trader not want to use an algo?

One common refrain from non-users was they do not trade frequently enough to justify the investment needed to alter their operational processes in order to support an algo. However, as with any new technology or tool, more widespread adoption will likely lead to diminished costs.

Another concern for traders was uncertainty that using an algo would, in fact, improve their performance. While this may have been harder to demonstrate a few years ago, Greenwich Associates expects that as more traders use algos and the metrics to measure performance become more sophisticated, it will be harder to make the case that algos do not perform as advertised. In fact, one might have a proof case available already: If algorithms don't improve execution performance, why do many traders use more than a dozen algos?

The most successful partnerships are between buy-side clients and dealers that can provide guidance on how/why to use algos.

The First Steps to Using an Algo

Even though there are meaningful benefits of using algos to execute FX trades, as with any new technology, there are nuances that need to be understood and operational workflow challenges to be addressed. What we have seen, though, are dealers increasingly willing to partner with clients to address these challenges. As a result, many buy-side institutions begin using the algos of one liquidity provider with the infrastructure and resources to partner with clients throughout the initial stages of the transition to algo trading.

The most successful partnerships are between buy-side clients and dealers that can provide guidance on how/why to use algos, and also with data to help them understand the costs of various execution methods. The days of using an algo and crossing your fingers about the outcome are over. Dealers as well as third-party firms are providing increasingly sophisticated tools to assess the outcome of a trade post-execution, as well as guidance on how particular algos will perform in advance of the execution.

Conclusion

Over the next two to three years, there is no doubt that algos will only continue to grow in importance. With the buy side becoming increasingly comfortable using algos to trade FX and dealers continuing to make investments in technology, we anticipate meaningfully more volume will be executed via algos in the near term.

Traders that currently do not use algos should be asking themselves whether they are able to consistently get the best outcome (i.e., lowest execution costs) without having that tool in their arsenal. Although it may take some effort to begin using an algo, with all of the data available demonstrating the benefits/cost savings, the ability to execute a trade with an algo will soon become a "need" as opposed to a "nice to have."

With all of the data available demonstrating the benefits/cost savings, the ability to execute a trade with an algo will soon become a "need" as opposed to a "nice to have."

We anticipate that traders currently using algos will leverage the wealth of information to make more sophisticated decisions around how/when to use them. For example, how does the algo split up an order? What are the rules for its smart order router as far as what gets executed in lit markets versus internalized?

Even though change does not come overnight, Greenwich Associates believes the current period in the FX markets will been seen as the beginning stages of an evolution. The algo landscape in FX will increasingly look like equities, where traders see algos as a critical part of their day-to-day execution.

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