Algos are a growing part of Goldman Sachs’ overall FX business with volumes having increased by some 30% year on year. The philosophy has always been to have a manageable group of FX algo strategies, which include a flagship dynamic hybrid algo, a pegged algo that does passive posting, a dynamic aggressive for a sweep-to-fill capability, as well as the standard TWAP and VWAP.

“The bank has recently launched an analytics tool offered on its platform Marquee Trader, which is designed as a real-time order monitor for FX orders. Clients using vendor platforms are often “flying blind” when using an algo, explained Ralf Donner, executive director and global head of FX Client Algo Execution at Goldman Sachs. “They typically do not have an instrument panel in front of them by which to figure out exact details of live performance of the order execution,” he said. “And while pre-and post-trade tools are ubiquitous in the market, the space in which our real-time order monitor launched in late April is wide open. It will allow clients to visualize execution intra-trade and make tweaks to it, and adjustments as they see the performance,” Donner said.

“Without an intuitive intra-trade tool, clients are likely to be in the dark during the actual execution, especially about live liquidity conditions and even performance relative to their benchmark. We intend to change all that,” says Donner.

A new report from Greenwich Associates has found that approximately 20% of institutional foreign exchange trading volume is now executed via algos, and FX is likely to move steadily in the direction of equity markets, in which “algos” account for more than half of trading volume.

“The report analysed how traders are employing algos, how fees impact their decision-making, and what steps institutions need to take to start using them. It also looked at the question of why algo use hasn’t grown even more rapidly in FX and identifies some of the key barriers to adoption. After assessing all these factors, Greenwich Associates projects that algorithmic trading will continue to proliferate in global FX markets.
Nordea is launching a suite of six FX algo strategies this summer. Scandinavian institutions, said Kasper Folke, Nordea’s head of e-FX, have increasingly moved away from principal risk transfer towards execution algos. “Some clients are using algos to find new ways of proving best execution, while other clients utilize algos as a means to improve execution quality and reduce the overall cost of trading FX,” he said. Nordea’s FX algo customers tend to be large institutions – pension and insurance funds as well as asset managers. But the largest corporates are also on the radar. What they have in common is that they prefer to use FX algos optimised for Scandinavian markets, leveraging on Nordea’s unique liquidity.

One of Nordea’s FX algos, named Make, for example, is a passive liquidity providing algorithm that will never cross the mid-point of the spread. “We have all the necessary algos from passive to aggressive,” Folke said. “Most Scandinavian clients have the highest interest in benchmark-oriented algos like TWAP or VWAP. The demand is for an easy access to a suite of algos, with the ability to customise a few of the parameters.”

Looking at medium and small corporates, Folke noted that there is preference to hedge as a principal risk transfer. One of the reasons for that is that such clients are focused more on non-FX related hedging strategies. “It depends on how advanced the corporate treasury function is, and if they have in-house knowledge, and significant flows,” explained Folke.

See more information about Nordea on page 28.

Six new FX algo strategies from Nordea

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Societe Generale goes independent for TCA

Societe Generale is a relative newcomer to the FX algo space, having been active for about two years. Since then the bank has seen a huge growth in demand across a client base that comes from the hedge fund, real-money, and corporate communities in the US and Europe. The bank has three main algos: TWAP, or an averaging algo; stealthy, named after the bird, Nightjar; and aggressive algo called Falcon. Keith Hill, global co-head of e-FX sales at Societe Generale describes it as a “streamlined” approach.

“There is a temptation out there to make a huge selection of algos with all the bells and whistles that sometimes have the tendency to confuse clients,” Hill said. “What we’ve done is added a certain amount of customization so that clients can fine tune them to get the best result.” The aim of the FX algo service, said Hill, is to continue developing flexibility to allow clients to be more hands on with execution, as well as to provide constantly refined analytics enabling them to make better decisions as to which algo to use under which market conditions.

One of the ways Societe Generale is doing this is by engaging an independent TCA provider, BestX. The bank already offers an in-house TCA suite, which it tries to make as neutral as possible when comparing market performance. But it’s still based on internal data only. In using an independent TCA provider, clients can compare algo performance in a specific currency pair from different banks. “It’s a good statement of confidence in your algos to say we stand by what we do. We are proud of the performance, and, not only are we happy to submit it to independent verification but we use the products of that independent TCA company to monitor and tweak all our algos,” said Hill. This also answers questions like: should certain liquidity pools be excluded from different strategies in different currency pairs as a result of information leakage into the market from one data pool versus another?

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NatWest Markets is keeping FX algos clean and simple

Keeping their bespoke liquidity pool clean while making FX algos more flexible is one of NatWest Markets’ goals for its corporate and financial institutional customers who require spot FX from the wholesale markets.

Historically, use of algos has been led by traditional fund managers, but hedge funds looking for passive execution and corporates have increasingly been using them, said John Quayle, head of FX algo execution at the UK-headquartered bank. Corporates have generally been more interested in RFQs or the risk transfer price, but seeing they will, on average, get a better fill with an algo is bringing them around, he noted. Similarly, hedge funds have moved from simply wanting to get a trade done, with little interest in taking market risk, to using passive algos.

Still, FX algo uptake remains dominated by the big buy-side like pensions, insurance and asset management funds, Quayle noted. The demand trend across clients is to minimize market impact, he said.

For this, NatWest Markets’ clients use the Client Order Matching System, or COMS, to execute in a liquidity pool comprising internal desks and client flow. “That’s leveraging our client base across corporates and financial institutions who are crossing the spread,” Quayle explained. When an algo is instigated it will place orders, mostly passively, in the COMS liquidity pool. “It then becomes part of our two-way price shown to our client base only. So, when one of our clients crosses the spread, the algo gets to fill the order,” he added. This also allows NatWest Markets to keep the algos simple: “We don’t have to place at external venues and that means we don’t have the complexities of doing so.”

The challenge, however, is keeping the liquidity pool clean, and one of the ways the bank does this is by not showing algo orders to any client where they detect undue market impact. For its more sophisticated applications of technology, NatWest Markets focuses on monitoring the market impact of activity rather than building “ultra-complex” algos, Quayle said. There’s also an initiative to make algos more flexible, so clients can switch between various modes. And though the most common mode is passive using the liquidity pool, sometimes clients want to be more aggressive and sweep the markets. “The changes we are making will allow users to switch more easily from one mode to another without having to stop one algo and start another,” said Quayle. “It’s really about ease of use, keeping the transparency from the client’s perspective whilst giving them the flexibility to decide how best to complete an FX trade.”

Deutsche Bank’s new global head of FX algos talks market trends

After some 14 years at Deutsche Bank, Vittorio Nuti recently took over as global head of algos in FX and LD based in London. It’s been a varied career since he’s joined. Nuti spent almost five years in Sydney and has now been in London for nearly five years. Over the last decade he has moved through options and spot with voice execution and developed the e-options business before moving into the electronic space. The industry trend, he said, is towards algorithmic execution, whether it be for large trades or systematic trading firms, like CTAs. And though CTAs tend to use algo execution, in general, the market is shifting to a “partnership” with their bank. What clients are looking for from their liquidity providers is to understand the costs of foreign exchange execution: what is the opportunity cost? Should I utilise an algo?

“That are the difficult questions that the industry as a whole is trying to answer, and I think those are the key trends for the coming 12 to 18 months,” he added. Deutsche is still finalising some of its development plans as it assesses the industry landscape, said Nuti, but one thing’s for sure: the bank is intent on maintaining its segregated structure between desks. “Clients want to have an algo desk that is functionally separate to the principal desk and that’s the structure that we’ve had in place for some years, and we don’t see that changing.” That’s because anonymity in execution is one of the key benefits to FX algos, and the structure keeps anyone outside of the algo team from knowing a parent order and which firm is behind it. In operation a few years now, Deutsche is targeting strong growth prospects for the FX Algo Product by making significant investments in that space, Nuti said.
Algorithms have enjoyed persistent growth in the FX markets in recent years. And all the signs are for continued expansion, with more buy-side firms appreciating their ability to reduce trading costs and improve execution quality across an increasingly fragmented FX universe.

In a recent Greenwich Associates survey, almost 60% of buy-side institutions reported that algos had lowered their FX trading costs. This suggests the widening of algo use from sophisticated active traders and hedgers to the passive mainstream is well underway. Greenwich asserts algo execution will rise from the current 10% of all client-to-dealer FX volumes over the next two to three years, driven by regulatory initiatives and the increasing best execution expectations. “We anticipate meaningfully more volume will be executed via algos in the near term,” the report concludes.

As in the equities markets, growing FX algo use has been accompanied by concerns over systemic risk, and efforts by regulators to ensure algos are being used safely and effectively. With human-controlled trading giving way to faster and more automated methods, the regulatory framework is adjusting to account for new risks, prompted partly by events. The FX market has not suffered a shock comparable to the US equities ‘flash crash’ of 2008. But sterling’s sudden 9% fall against the US dollar in October 2016 and the derailing of many algos by the unpegging of the Swiss Franc in January 2015 have stiffened the resolve of regulators to strengthen safeguards.

Numerous initiatives – some voluntary, others mandatory – are shaping algo development and deployment, but perhaps the most significant is the UK Financial Conduct Authority’s (FCA) recent guidance statement, which both clarifies and builds on MiFID II. FCA GOOD PRACTICE GUIDELINES

In February, UK regulators outlined their expectations for supervised firms in terms of algorithmic trading. The FCA’s ‘Algorithmic Trading Compliance in Wholesale Markets’ report identified areas where current practice is insufficient to meet their obligations, specifically under MiFID II. In parallel, the Prudential Regulatory Authority (PRA), responsible for prudential supervision of the UK financial sector, published for consultation proposals for governance and risk management of algorithmic trading.

Taken together, the papers underline UK regulators’ intense supervisory focus on the potential systemic risks of increased algorithmic trading.

By Chris Hall

Will good practice make for better FX algos?

FCA GOOD PRACTICE GUIDELINES

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Based on reviews of firms’ current
arrangements, the FCA’s review says firms must address failures in five areas: definition of algorithmic trading; development and testing processes; risk control; governance and oversight; and market conduct (these priorities are largely reflected in the PRA’s governance framework). Notably, the PRA’s draft supervisory statement will apply to all algorithmic trading activities “including in respect of unregulated financial instruments such as spot FX”. Whereas MiFID II does not apply explicitly to FX spot, many firms have decided to include all algorithms with projects to overhaul their algorithmic trading operations, in part because FX spot forms a reference input to instruments covered by MiFID II. Algo users must address the gaps between reality and required practice quickly. PRA-regulated firms in scope of the Capital Requirements Regulation and UK branches of third-party firms will need to comply with proposed PRA standards from 30 June 2018. Firms regulated by the FCA (including some not defined as investment firms under MiFID II) should not expect an extended period of grace, based on the regulator’s practice of enforcing rules rigorously after specifying best practice.

Underlining the need to minimise risks and avoid threats to market integrity, the FCA explicitly notes that the report’s examples of good practice are not the only ways to comply but warns that poor practices outlined show where firms “now need to do further work”. “The FCA document moves on from MiFID II by emphasising the importance of trading in a fashion that does not threaten market integrity. This is in line with IOSCO’s direction of travel and has started to be reflected in other major jurisdictions. In the long run, firms won’t be able to avoid their responsibility to preserve market integrity by leaving Europe,” says Nick Ireland, tech director and co-founder of specialist vendor and consultancy TraderServe.

Defining and documenting algorithmic trading processes within a coherent governance framework is a considerable challenge. MiFID II’s beyond best execution rules (RTS 27 and 28) are already having a significant impact on buy-side trading practices, especially in markets such as FX where execution performance was traditionally subject to less intense scrutiny. Increasingly, all the executions conducted by institutional trading desks are being recorded similarly high levels of attention. As such, common equities market tools and techniques such as algos and transaction cost analysis (TCA) are becoming more commonplace in FX and fixed income, to prove compliance with best execution principles.

“As well as regulatory factors, pressure from stakeholders is also driving greater buy-side adoption of algorithms and analytics in pursuit of best execution in the FX markets. Activist shareholders and senior managers expect trading desks to minimise performance drag through data-driven decision-making. Together with increasing liquidity fragmentation, these factors will only increase use of FX algos,” says Ollie Jerome, co-founder of BestX, an analytics and technology provider. But MiFID II’s RTS 6 and 7 are the key sections when it comes to how firms should ensure their algorithms are sufficiently well designed, tested and documented for use in live market conditions. These build on ESMA’s 2012 guidelines for conduct of electronic trading as well as the Market Abuse Regulation of 2016. To ensure algos do not cause disorderly markets (and can be stopped quickly if they do), RTS 6 and 7 stipulates appropriate systems and controls to support safe interaction with trading venues, as part of a formalised governance framework within which compliance managers and senior staff must have the understanding and operational ability to supervise algorithmic trading operations effectively, including use of automated surveillance systems, pre- and post-trade controls, and real-time monitoring. If all these checks and monitoring activity fails, firms must have the ability to deploy ‘kill functionality’ and cancel unexecuted orders in the event of market disorder. All these arrangements are subject to annual self-assessment and publication of a validation report. In addition, change management procedures must be in place to fully document any material changes to how algorithms work, with separate testing and production environments, as well as the ability of the compliance team to monitor algo performance in real-time, separate from the algorithmic trading department. Much of this is current practice, in theory, but the combined effort of raising the bar and adding new requirements pose some stiff challenges, including the following:

Defining / documenting – According to Charles Mo, Greypark’s head of trading solutions and infrastructure, defining and documenting algorithmic trading processes within a coherent governance framework is a considerable challenge, despite overlaps between equities and FX algos. At base level, firms have been gradually filled in gaps between policies drafted centrally to meet regulatory requirements and the procedures and controls created and implemented locally.

“Particularly where equities was an established business, from an algo perspective, many banks already had deep if incomplete levels of documentation, but the approach was not necessarily scalable across other asset classes. In many cases, the existing documentation has not provided the head of risk with sufficient transparency and confidence that controls implemented on the ground are fully aligned the firms’ policies. Those gaps have to be filled,” says Mo.

MiFID II requires firms to certify and categorise different types of algorithms, due to the broad range of applications and programmes in the trading process.
that fall under MiFID II’s broad definition, with each category requiring different levels of documentation. “Defining and classifying algos is a big piece of work,” says Dan Simpson, head of research at regulatory consultants JWG. “Even though MiFID II’s initial definition of an algo was refined, it still encompasses a wide range of automated tools. Firms have to document every algorithm within scope and even explain why they believe other tools are outside of scope.”

Governance framework – As the text of MiFID II and the FCA report attempt to emphasise, compliance is not a one-time push. Regulated firms must ensure algorithms are developed and deployed in a safe and compliant manner on an ongoing basis. One approach, advocated by GreySpark’s Mo, is to institute an “electronic trading oversight council” with a charter signed off by board members. This not only enables a standardisation of approach to documentation, testing and deployment across asset classes and geographies, but also supports ongoing governance, visibility and oversight.

“Firms should focus less on point-in-time MiFID II compliance than on ensuring that behavioural change is supported through implementation of appropriate principles, procedures and policies, including on remuneration. Accountability and disclosure must become intrinsic to the BAU activities of the firm. Only then can the risks be truly mitigated and the very real threat of jail avoided,” says Mo.

JWG’s Simpson says MiFID II’s ongoing monitoring requirements – effectively necessitating the establishment of a separate team to track live algo performance within the compliance team – could be particularly onerous. “It’s not just a matter of cost. Firms are finding it difficult to recruit staff with the necessary skills; you need intimate knowledge of firm’s algorithms and experience of market conditions,” he says.

There is potential for the structured governance framework around algo trading demanded by MiFID II to constrain innovation and customisation. A precedent was set in Hong Kong when the Securities and Futures Commission obliged users and providers to attest to their competence in automated trading. This quickly led to a more structured approach to customisation, with client-side tweaks reduced to levels of urgency. Simpson suggests MiFID II may further cramp customisation. “MiFID II requires that every algo has its own individual ID, with a record of all material changes, including testing and deployments. As such, firms may limit the frequency of tweaks as the process will be burdensome,” he says.

Testing – Whilst MiFID II demands thorough and separate algo testing, the requirement to conduct and self-certify market disorder testing is more challenging still. Testing functionality and conformance with venues has typically been done via replay facilities. But this does not create the dynamic trading environment, nor the stressed market conditions (including latency fluctuations), necessary to test how an algorithm responds to extreme volatile trading conditions. The FCA cites as good practice the use of dynamic testing environments that examine not only how an algo behaves in existing market disorder circumstances but also whether it further contributes to market disorder, including in combination with other market participants. Further, it specifies that “market conduct concerns need to be a vital part of the algorithm development process”, specifically noting that “development procedures which predominantly focus on operational effectiveness” are insufficient. The FCA states that it is poor practice for firms to be unable to demonstrate the potential impact of their algorithmic trading strategies on market integrity. “It’s no defence to say that you didn’t think your algo could cause or contribute to market disorder. Making sure it won’t is a considerable undertaking,” says TraderServe’s Idelson.

The supply of such facilities is extremely limited, meaning the market as a whole has not got to grips with this requirement. Many banks are backtesting algorithms and setting up controls to keep them stable but reserving the ability to deploy kill functionality if necessary. Because an algo is often a key role in providing challenge across the business.

Regulated firms must ensure algorithms are developed and deployed in a safe and compliant manner on an ongoing basis.
Ronald, please tell us a little about your day to day responsibilities and tasks within APG?

At APG we have a global trading desk with traders in Amsterdam, New York and Hong Kong. The guiding principle of the trading desk is to implement exposure of clients through the execution of orders at the lowest cost and with the least possible market impact. We trade equity, fixed income, money markets, commodities, FX and derivatives on many assets. For the past 7 years I have been responsible for the FX trading and execution for our pension fund clients and our mutual funds. These responsibilities range from hands-on trading to advising clients on their currency hedging mandates. It is my job to develop, analyze and choose trading methods, liquidity providers and trading technology that help APG and its clients to achieve its goals. It is part of our desk’s DNA to continually search for better ways to trade our clients order flow. For a trader, that is what best execution is about. With MiFID II coming into effect the focus on transparency around best execution has increased and many of the activities that we do in measuring, evaluating and changing our trading strategies become more important in 2018. Some of the activities will get an official status and we need to explain to our clients where and how we trade. For FX forwards, swaps and NDF this has become mandatory and although FX spot doesn’t fall under MiFID II regulation, we apply the same standards on our own FX spot trading.

Were APG quite early adopters of FX algorithmic trading and how important is making use of the latest platforms and technology for your trading and dealing activities?

At APG we have been using algorithms when executing cash equity and listed derivatives for over 15 years. We are very hands on when executing our order flow. We want to have control of the order and execute it ourselves electronically over our trading platforms. Here algorithms are an important part in the toolkit of our traders. APG was a relatively early adopter of FX algos. In 2013 we did a research study into the use of FX algorithms and after a few sample trades we decided to enable them for FX trading. We access the algos through our multi bank trading platform and trade-fills flow real time into our trading management systems. While we continuously work on improving our technology and platforms, for APG it is important to use a matured platform and stable technology, not necessarily the latest.

Intelligent execution at APG

Speaking with an expert trader

Ronald Lagarde

APG is the largest pension delivery organization in the Netherlands. Its approximately 3,000 employees provide executive consultancy, asset management, pension administration, pension communication and employer services. APG performs these services on behalf of (pension) funds and employers in the sectors of education, government, construction, cleaning and window cleaning, housing associations, energy and utility companies, sheltered employment organizations, and medical specialists. APG manages approximately €468 billion (February 2018) in pension assets for the pension funds in these sectors. APG works for approximately 40,000 employers, providing the pension for one in five families in the Netherlands (about 4.5 million participants).

Ronald Lagarde has managed FX trading for APG Asset Management since 2011. He has extensive experience in FX markets and is an expert in using and evaluating single & multi bank trading platforms, ECN’s and algorithmic trading. We asked for his views and opinion on algorithmic FX trading.

APG has a global multi-asset trading desk
What types of FX algorithms are your trading team currently employing and what factors generally influence this?

We distinguish 3 types of algorithms with different urgency levels. Aggressive (high urgency), neutral and passive (low urgency) algorithms. Which type of algo you use depends on the trade-off you make between impact and opportunity cost. Most of the time, when we execute trades at APG, we aim for the lowest impact possible. During a trade we will manage our opportunity cost in a controlled way. This decision is taken because of our trading size which is generally larger than average. Our experience is that on large trades, if you trade over a longer period and trade smaller clips, on average the total trading cost will be lower. Therefore at APG we often use passive and neutral algorithms. It is the skill of the trader to analyse the markets, price action or other factors and to decide when to deviate from this default execution strategy. When there is a real high urgency of a trade we have the option to use more aggressive algorithms or trade on our multi bank trading platforms/ECNs.

Many large asset managers choose to utilise bank-generated algos as they believe it gives them the best access to the different trading venues that exist. What about APG. How do you source yours?

At APG we have strong relationships with many top tier banks that give us access to their liquidity and balance sheets. For FX trades we access this liquidity through two multi-bank dealing platforms, where we can do RFQ, RFS and use algorithms. Next to this we connect ourselves to two ECNs directly and trade via a prime broker. We are not planning to expand to more ECNs. This can be done better, more cost effectively and with lower latencies by technology providers and our banks. We utilise bank-generated algos mainly for the technology they offer for structuring order flow and for connectivity to ECNs with smart order routing capabilities. We see the correct connectivity, quality of the smart order routing and policing of the liquidity providers as the main differentiators in choosing one algo over another. Next to this access the ability from a provider to tap into internal liquidity can be a differentiator. In that sense, we investigate how a bank’s desk E-deal is set up, technically and legally, what controls there are over order flow, how the Chinese walls work. This due diligence is important for our control over the order execution.

How involved do you get in the testing and fine-tuning of the FX algos you are using?

APG likes to be involved early when new algorithms are being developed and we also continuously give our feedback towards the algo providers on what we find important in algorithms. With the initial testing we do not want to be involved as this is more for the developers, however when an algorithm is ready for live usage we do not hesitate to use new algos. Initial feedback is given directly to the provider and longer term TCA results are shared upon request if the sample size is adequate. In the end we would like to work together with our algo providers to develop algos most suited for our FX flow.

Are you using FX algos for every trade or only for specific situations, for example executing a larger block trade or handling more illiquid currencies?

APG mainly uses algorithmic execution when executing large orders. For smaller orders the added value is small and its often quicker and/or cheaper to use a multi-bank trading tool. For large orders we find it important to use passive algorithms that give us access to liquidity in the market. Our main goal is to minimize the impact of our trading activity. Algorithmic trading fulfils a role in achieving this.

What are the key benefits that you getting from algorithmic trading?

Important benefits we get from algorithmic trading are getting access to a large diversity of ECN’s and liquidity providers, accessing the internal liquidity of our brokers and their franchises and using the smart order routing and placement technologies that they develop. Next to this algorithmic trading also allows a trader to focus on more trades at the same time while still being able to execute large trades or small executions with smaller bidoffers and lower overall impact. This is important to APG as we have a global multi asset trading desk where all traders trade multiple asset classes, often at the same time. In order to do this in an effective and cost efficient way, trading technology is vital.

Rigorous TCA is important to ensure that algorithmic execution strategies genuinely achieve a better result than more traditional trading methods. How do you tackle this and what sort of benchmarks are useful?

At APG we believe doing TCA is very important to analyse the different ways of trading and accessing market liquidity. Furthermore we think that systematic and independent TCA is needed for it to be useful. We have been using an external independent TCA provider since 2014. Our TCA partner provides the market data, data management together with APG develops benchmarks that we find useful in analysing our trades. For evaluating algorithmic trading we focus more on real time and information shortfall. We bucket comparable algorithmic executions across different variables and check if an algo is doing what it is supposed to doing, compare the algos versus each other and versus different trading methods. This exercise if very difficult due to for the following reasons, for example market data is still not freely available, volume data is not available and for TCA to be useful a large sample size is needed. After doing TCA on our trade activity for the past 4 years we are at the point where we can genuinely use TCA to make decisions in the trade process.

Post-trade TCA has great value of course but how important is the ability for you to see how an algorithm is performing in real-time and to be able to intervene if the deviation to a benchmark in terms of slippage has crossed a threshold that is too great?

For a trader it is very important to see how his or her trades are performing in real time. The degree of real time analytics and performance indicators that are available to FX is an integrated and centralized way is very limited. This is mainly due to the fact that the use of execution management systems (EMS) is not that common in FX. At APG we do not have an EMS for FX yet, unlike our equity trading where the use of a EMS has been integrated in the trading process already for a decade. We envisage that in the future we will integrate an EMS in the centre of our FX trading process and from this central point we will access the whole FX market, be it through ECNs, crossing networks, RFQ, RFS or through broker algorithms. Some algo providers do offer real time analytics for their algos. Although we find this a nice initiative, the added value for us is limited as we need it centralized over all our trading activity.

There seem to be two schools of thought as to whether to let algos do their job or to go for a more hybrid, human-algo approach. What’s your opinion on that?

In the beginning we had a very trader dependant micro-management approach when using FX algorithms. Very tight limits were used and settings were changed frequently during the execution time of an algo. The hybrid human approach best characterized our usage of FX algos at first. Advantages were that trader skills were used and we could micro and risk manage the algorithms. Disadvantages are that you overrule the algorithms frequently and therefore influence the measurability and performance of the algorithms. In our case it made some of the TCA results on algorithmic trading less useful, while TCA is very important to show that algos add value and to decide which algos have the best performance and are suited with your trading goals. Therefore in 2017 we made some changes in the way we use algos, mainly that we use fewer and less tight limits and we always let an algo finish. This had a positive effect on the quality and fairness of our TCA results.

The correlation between the cost of one particular algo and the direct benefits it delivers is not always consistent. How big a challenge is that in determining which ones to use?
FX Algo trading - implementing solutions right through the workflow

By Alfred Schorno, Global Head of Sales and Managing Director, 360T Group

Regulatory change has further accelerated the need for institutions to take control of their FX execution process and show transparency throughout the lifecycle of an order. The trend we are observing requires the building of a process-driven execution policy, automation of low-value orders and the ability for a user to have full platform oversight, from inception to delivery.

An important element of this is the focus on electronic execution and the increased use of Algos as part of an execution strategy. Institutions are recognizing the limitations of leaving large orders with the voice desks of their liquidity providers and the importance of measuring performance at all stages of the trade cycle. Changes to the structure of the market have meant reduced market maker inventories and an increased presence of short-term players forcing larger consumers of FX liquidity to re-think their approach; Algos will be an increasingly used weapon in this battle.

In simple terms, Algos offer slow/fast and passive/aggressive execution methodology. The most used are time-weighted average price (TWAP) or volume-weighted average price (VWAP) strategies. Leading providers tune their offerings according to the requester profile and market conditions. Active monitoring, access to liquidity across multiple venues and the addition of unique franchise access help reduce market impact and increases probability of fill. All of this is for nothing without accurate TCA and the depth of sophistication here continues to develop from specialist firms focused on only this to more low-cost platform and provider solutions.

WHY PICK-UP HAS BEEN SLOW

Relative to Equities, why are Algos so slow in becoming part of the FX traders execution arsenal? Some of the challenges that the buy-side faces in FX include actively booked allocations for underlying accounts, broker list limitations, credit risk concentration and the ability to trade orders to a specific tenor rather than just spot. In a non-cleared world all of these need to be taken into account, a core difference from other asset classes. Considerable thought needs to go into implementing an effective solution right through the workflow, not just the execution. We spend a lot of time helping our clients make sure the lifecycle of an order is not broken to achieve this desired outcome.

A longer-term solution to the difficulties caused by bilateral credit may be on the horizon. In Europe the clearing of FX products by central counterparties is slowly becoming a realistic option to help address some of these workflow problems that the buy-side faces, not just when executing Algos.

CONCLUSION

As the buy-side faces a heavier burden to ensure execution is at a high quality, driven by client demand, regulatory and FX Global Code of Conduct requirements there is no question that algorithmic execution in FX is going to play a part. The goal for 360T as a platform provider and the sell-side as algo builders is to continually enhance functionality and services to help meet these demands from both a workflow and structural standpoint – a goal we are actively working to meet.
A peek at algorithmic trading on the FXall platform

Jill Sigelbaum, Head of FXall, Thomson Reuters, shares some insights with FXAlgoNews.

Jill, please can you please remind us of the type and range of clients that now utilize the award winning FXall multi-dealer trading platform?

FXall is the leading independent platform for institutional foreign exchange trading and workflow solutions. Used by over 2,300 institutions worldwide, including asset managers, banks, broker-dealers, corporations and hedge funds, FXall offers deep liquidity from over 180 leading liquidity providers.

What choice of trade execution capabilities does FXall provide to help meet the wide range of client needs?

One of the core differentiators of the FXall platform is its unique combination of order management, trade execution, and post-trade capabilities. Participants on FXall benefit from an advanced execution blotter with powerful order management features such as trade netting and allocations, and complementary price discovery and trading protocols to trade FX spot, forwards, swaps, NDFs and options. They can access deep liquidity and secure the best price across multiple providers by using a range of execution methods, including request-for-quote (RFQ), streaming prices, an anonymous order book, as well as resting, fixing, and algo orders.

Has algorithmic FX trading been increasing on your platform recently and if so, amongst which clients in particular and what factors are likely to be driving that?

Algorithmic trading on FXall continues to grow at a significant pace, more than doubling over 2017, as the early adopters incorporate algos into their daily trading. Participants increasingly experiment with these advanced execution strategies in order to enhance their trade execution and minimize spread costs. We are witnessing strong growth across all client segments on the buy-side, especially by asset managers and hedge funds, as well as by the larger corporate traders. We expect continued adoption of algos by buy-side traders as they seek to ensure the efficient execution of orders at the best price - partly in response to new best execution requirements - and as they leverage automation to increase operational efficiency of the trading desk.

What functionality do you offer to traders using bank-provided algorithmic execution strategies on the FXall platform?

Thomson Reuters has done significant connectivity work to consolidate access to sophisticated algos provided by the leading liquidity providers, thereby offering FXall participants a common user interface and experience across all providers and algos. Depending on their specific trading requirements, algo users on FXall can choose from a wide range of strategies, from passive algos that maintain a desired execution rate over time while seeking to capture spreads, to more aggressive strategies that seek to capture as much liquidity as possible. In addition, clients benefit from a growing suite of analytical and reporting tools that help measure the quality of their execution, as they have access to Settlement Center, our automated post-trade processing platform, and they also enjoy the automatic straight through processing of their algo trades from and into their order or treasury management systems.

What solutions does FXall offer to help clients achieve and demonstrate best execution for their FX transactions?

Our proprietary suite of analytical and reporting tools allows users to assess the effectiveness of their trade execution, take steps towards reducing transaction costs, and meet best execution reporting requirements. For many years now FXall has helped clients understand whether they are getting a fair price, quantify the spreads they pay over time, assess provider performance, as well as gauge market conditions. We are now in the process of rolling out our improved platform for trade analytics and reporting, which will feature a real-time and interactive user interface, and will tie into the FXall trading workflow to empower traders to make better informed decisions on a pre-trade basis.

Transaction Cost Analysis has been described as more art than science. Would you agree with that and what do you see as the next step in its evolution with respect to FX trading?

Given the over-the-counter nature of the FX market and the difficulty of forming a representative view of the overall market for comparison purposes, I appreciate how TCA can be seen as more art than science. There are indeed certain challenges to assessing the performance of your FX trade execution and the costs associated with it, both implicit and explicit costs.

As an example, the industry is experiencing certain growing pains with time stamps. Accurate time stamps are necessary to assess potential execution slippage across the life-cycle of the trade, from the time of origination by the portfolio manager, to the time the trading desk submits the order into the market and it gets filled, potentially over a period of time if it’s an algo trade. This is causing participants to reevaluate their voice and electronic trading workflows, as well as their end-to-end order management and execution systems, in order to ensure these time stamps are accurately captured and stored. Looking ahead, as regulation and technology drive increased transparency into the FX market, and as familiarity with TCA continues to grow, I expect we will see more consistent approaches and standardization in terms of how institutions demonstrate best execution for their FX transactions.

In your opinion are the traditional reasons for using FX algos (reduced market impact, access to deeper liquidity, increased trader productivity etc.) likely to be overtaken by other drivers and considerations in the future?

These traditional reasons certainly continue to be key motivators driving the use of algos, especially given the current fragmentation of FX liquidity across counterparties and trading venues. Another key driver of algo adoption has been the growing pressure from regulators and asset owners, pressuring the buy-side to achieve and demonstrate best execution. Algos are one tool that traders can use to achieve best execution. In addition, algos also offer the unique benefit of automating certain trading activities, freeing up the trading desk to focus on their more challenging trades. As market participants continue to face cost pressures, I believe the potential to increase operational efficiency through automation will also be a key driver of algo adoption.

A key mission for FXall has always been to be the provider-neutral platform of choice. What role can leading platform providers and trading venues like yourselves play in helping to shape industry best practice when it comes to algorithmic FX?

As a provider-neutral platform, we strive to provide the optimal suite of solutions that allow our clients to meet all of their FX execution requirements and to transact with the liquidity providers of their choice. The ability to select the most appropriate execution method for a given trade while maintaining a comprehensive end-to-end workflow is a key benefit of the FXall platform. For certain trades, that could be an RFQ. For others, that could be an algo. Independent platform and technology providers like FXall are key to providing a level-playing field through which to assess FX trading performance, applying a consistent methodology to all technology providers, and enabling the consumers of this liquidity to compare the quality of their trade execution across counterparties on a comparable basis. As mentioned, our proprietary trade analytics empower our clients to make better informed decisions, enhancing their execution planning and counterparty selection, across all execution methods, including algo trading.
Essentially, the reason why FX algo trading has grown in popularity is because they deliver an execution strategy akin to a slight improvement on the average price over the time of the order. That’s according to one UK-based corporate treasurer, who relayed their views to Michelle Price, associate policy and technical director at the Association of Corporate Treasurers. “In this way, they are similar to how VWAP algos are deployed in the equity market,” the treasurer added. “Intuitively beating an average price has appeal for treasurers who should not be trading FX, but rather seeking to hedge effectively - and with minimum execution costs.”

But according to Price, in her experience it is still only a small number of sophisticated corporates who actually use algorithms at present. “It’s just not a relevant tool for the vast majority,” she says. Survey data collated by NeuGroup in 2017 also found that 62% of members across its two FX managers’ peer groups (FXMPG) said they were not regular algo users. Of the 34 members - consisting of very large multi-nationals with sophisticated FX hedging requirements - who responded to the question on FX algo use, some 29% said they were ad hoc users, while 9% said they were regular users.

Anecdotally, usage among members was roughly the same a year later, except one of the ad hoc users from the previous year has since increased their use to become a regular user - and a regular user has increased their volume through algo trading, says Anne Friberg, senior director, peer knowledge exchange, NeuGroup. “Directionally, that will tell you something,” she adds. “And whether they are regular users or ad hoc users, they tend to use those for the larger currency trades, or sometimes in situations when they are not targeting a fixing rate in combination with significant volume, large capex or M&A transactions.”

**KNOWING THE BENEFITS**

One large manufacturer who responded to the NeuGroup survey explained that over the last three years, the bulk of their corporation’s FX trade flow has moved to algo execution from multi-bank RFQ. This was driven by a need to reduce market impact on large orders, transaction costs and the fact that their counterparties are increasingly offering algos where they didn’t before. In addition, FX algos were said to offer greater trading possibilities and, as more algos become available, there is greater potential to negotiate the fees down, according to the respondents who used them. Another responder said that from doing no algo trading at all in 2016, it has now become a major part of routine trading.

A different set of survey data published by Greenwich Associates last year indicated a slight decline in the percentage of the largest corporates trading in excess of $50 billion annually who used FX algos, while their use rose more significantly among smaller corporates. Yet this year there has been a one-third increase in algo usage among the largest corporates, with no further increase reported among small buy-side firms. Alfred Schorno, global head of sales and Managing Director, at 360T says the platform has also observed a significant increase in bank algo usage among its largest corporate clients - but no significant increase to date from smaller firms. “However, their interest in ‘fact finding’ and questions around usage, details of workflow, benefits etc. has risen notably,” Schorno adds.

But in comparison benchmark orders, which still tend to be

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**Algorithmic FX - Giving corporate treasurers the necessary tools to master the trading process**

Use of FX algorithms among the general corporate treasury community may still be in its relative nascency, yet their use among very large corporates continues to grow. But with more firms seeking ways to optimise their FX trading performance, can execution algos really becoming an indispensable tool across the board for this important buyside sector? Nicola Tavendale investigates.

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Michelle Price

"The ability to specify if a corporate wants the order executed with the bank acting as a principal or an agent is high on their wishlists when it comes to improving the adoption of FX algos,"
prevailing among corporate users, are a much blunter tool for risk transfer and with more limited flexibility, warns Schorno. “Algos are empowering the user to take more granular decisions,” he explains. “The power to reduce cost of trading through ‘sell-side like’ participation, to use alternative liquidity pools and reduce market impact and carefully selecting liquidity pool providers allow clients to achieve goals previously not attainable.”

RECOGNISING LIMITATIONS
Algo adoption among corporate treasurers is still in its early stages, says Curtis Pfeiffer, Chief Business Officer, at Pragma Securities. However, bank clients are now reporting more demand from their corporate clients to provide them with algo trading tools, he adds. “There are some who are quite sophisticated users who have now been using algos for a number of years,” Pfeiffer observes. “But the overall trend for leveraging algo execution trading tools has started to pick up and will continue to be strong over the coming years.”

Liquidity fragmentation is also becoming more pronounced in the FX market, while the speed of quote, market and price updates are happening much faster than a human can trade, according to Pfeiffer. “You need some kind of automated tool to help respond to that frequency of quote updates,” he warns. “FX algos can consolidate multiple pools of liquidity, help reduce market impact, improve efficiency and free the trader to focus on some of their more difficult orders.” In comparison, corporates who are not currently using algos are potentially risking a poorer level of execution quality, Pfeiffer warns.

But Price reports that one of the main risks or worries about using FX algos, was highlighted by one corporate treasurer, in relation to how they may perform in a “flash-crash” event. This was seen in October 2016 when sterling fell sharply against the dollar, with algos cited as one of the potential causes by the Bank for International Settlements (BIS). “This could cause the algo to follow the market lower if it was executing a sell order,” the treasurer explained.

GETTING IT RIGHT
According to one of NeuGroup’s FXMPG members, benchmarking orders is also more appropriate than using algos in certain circumstances, such as when the fixing rate and the accounting rate are the same or for when dealing spot FX currencies from countries with capital controls. Many of the groups’ members are also passive users who employ algos to become a liquidity provider in the interbank market and collect spreads, which “to their mind helps offset some of the algo fees that they have to pay”, Friberg explains. As a result, TWAP tends to be the strategy mentioned by members more than others, with one treasurer stating that it also “easier to understand”. Others which have been mentioned include VWAP and an algo called Silent Partner, Friberg adds.

However, if they need quick execution they might choose a hybrid strategy instead, which runs passively but will aggress if the market needs to be completed by a certain time – or as one member said, if the market was starting to go against them. While entry level algos tend to be largely Time Sliced algos or TWAPs, Schorno explains that larger transactions might benefit from a strategy averages in over time, participating on the bid or offer and creating a small footprint during executions. “As people get more comfortable, more complex strategies are being engaged,” he adds. “Adaptive strategies are growing in sophistication, coupled with greater access to empirical data gives clients greater understanding of market micro-structure at the point of trade.”

Algo users should also be clear that market risk remains with them until completion, Schorno warns. “The longer you run an algo, the more event risk you introduce,” he says. “Of course over time, the power of averaging helps you introduce both upside and downside potential of such risk.” So selecting the right algo for the trading environment is a growing science – the balance is market impact versus time, according to Schorno. To get this right, clients should be clear about their goals and work closely with their providers to help understand which strategies are suited for their needs.

COMPARE AND CONTRAST
Banks should also be aware that if they are not transparent enough with corporates as to when they are acting on an agency or principal basis, then that is another serious limitation.
Buy-side watch FX algo trends as they weigh costs

QCAM Currency Asset Management is the largest independent currency manager in Switzerland and has been in the business for more than 13 years. It offers its own currency overlay services, FX best execution, FX single strategy v-Pro, and general FX advisory and liquidity management solutions. Clients include both public and private pension funds, asset managers, family offices and foundations. It is now in the very early stages of taking a closer look at starting to use FX algos says Andy Schümpelfi, from the Institutional Sales team at the firm.

The transparency provided by algos remains a matter of debate, in Schümpelfi’s view, but he does recognize the reasons behind the growth in FX algo use. One of them being that most banks risk appetite to carry large FX positions is diminishing and hence customers need to find alternative channels to unwind their large positions.

“FX algos are suitable for buy-side customers who want to hide, mostly to larger amounts, in the market by using an appropriate strategy from their preferred bank. The software then anonymously executes the order over a predefined time horizon. Avoiding market impact in order to achieve a better execution rate, i.e. saving cost, is clearly the goal,” he said.

A MATTER OF CURRENCY

Two of the most pressing execution concerns for buy-side tend to be market impact and cost. Clients that Schümpelfi has spoken with are split on the benefit of FX algos, however. “The feedback I got was mixed, some like them, and others don’t,” he said. “One probably has to consider the currency you want to trade, is it a liquid currency or is it an illiquid currency? If it’s a liquid currency, I am sure it can work really well, if the currency is not liquid then there are probably better ways than using an algo.”

QCAM also provides TCA services in cooperation with third-party providers for clients and prospects who would like to find out about cost saving possibilities within their current FX execution setup.

“People have become more alerted to hidden costs,” he said. For a
Best execution: what role do FX algos play?

Market participants are increasingly incorporating FX algos in their best execution process, but this doesn’t mean they are the right option every time says Pete Eggleston.

The use of execution algorithms in the FX market has increased significantly over recent years and it would appear that this trend is set to continue for the foreseeable future. This is partly due to the growing focus on best execution. Under the MiFID II European directive, best execution requirements mandate firms to take all sufficient steps to obtain the best possible result for their clients, taking into account a variety of factors. The use of electronic trading, including algos, provides the required audit trail around the transaction, including accurate time stamps. The changing regulatory environment, however, is not the only reason for the increased use of algos. Market participants are becoming increasingly comfortable with the use of the product and are seeing the benefits from the potential cost savings and reduced market footprint.

VALUE TO THE BEST EXECUTION PROCESS
Algos can offer tangible value to the best execution process, other than simply delivering the requisite time stamping and transparency required by regulations.

The benefits of including algorithms in your menu of execution options include:
- **Potential to reduce costs**
- **Potential to reduce market impact**, especially for larger tickets
- **Ability to access a wider range of liquidity sources**
- **Operational efficiency**
- **Transparency and audit trail**

However, there are also potential risks associated with algo use, which need to be considered as algos don’t necessarily deliver a ‘best execution magic bullet’.

**POSSIBLE RISKS**
Algos present clear benefits and can help contribute to achieving best execution in some circumstances, but they are no panacea. There are potential pitfalls to be aware of when using them:
- **Cost vs. performance trade-off**
  - The temptation is to use products that appear to cost the least. However, a product that might appear relatively expensive in terms of headline cost, might on average deliver far superior execution performance when taking into account market impact and other factors.
- **Market footprint and signaling risk**
  - Poorly designed algos or sub-optimal selection and management of liquidity sources may create significant market impact, compounded by allowing other participants to further identify the algo behavior through the signaling risk it has created.
- **Marketing spin and black boxes**
  - Understanding exactly what any given product does, and how it does it, can be challenging. The vast majority of market participants are also uncomfortable using any product that might be perceived as a ‘black box’.

**LIQUIDITY SOURCES**
For algos that access multiple liquidity sources, there can be overheads monitoring which providers are delivering high quality liquidity and superior execution, through, for example, low reject rates and rigorous enforcement of participant behavior.

**ALGO SELECTION**
Given the bewildering array of products now available, the process of how to select a specific algo, for the trade in question, becomes complex. With the increased focus on FX execution from asset owners, trustees, compliance and regulators, it is more important nowadays to be able to record and justify such selection decisions.

The systematic use of best execution analytics, on both a pre- and post-trade basis, can help mitigate the risks associated with algo use, and allow users to make more informed decisions.

**MEASURING THE PERFORMANCE OF ALGOS**
Using independent and rigorous post-trade transaction cost analysis (TCA) can help measure performance of algos across providers on a consistent basis, net of fees. For example, is it worth paying a potentially high fee to use a specific algo, or does the performance over time more than compensate for the fee? Rigorous analysis can help answer that question, and maybe reveal that “cheaper” algos are not worth the economy on the lower fee. Furthermore, it is important to not just focus on cost. There are many other factors to consider when taking steps to deliver best execution, including measuring market impact, assessing price benchmark performance and, for algos specifically, analyzing potential information leakage via measurement of signaling risk.

**WHICH ALGO TO USE AND WHEN**
Another common issue is deciding which algo to use and when, taking into account the trade size, currency pair, desired trading objective, time of day, etc. A number of factors need to be incorporated within the selection process, including whether there is an execution benchmark to consider, or other execution objectives. For example, it makes little sense selecting a Time-Weighted Average Price (TWAP) algo over several hours if a trade has a specific benchmark of mid-market Arrival Price. Even with certain standard types of algos, such as a TWAP, choosing between different providers can be tricky. A rigorous process, informed by independent pre-trade analytics, and based on objective performance measurement, provides the foundations for such a selection process.

It is imperative that the first stage in the process is having a clear view on the specific execution objective for the trade in question. For example, is the objective to purely minimise slippage at an Arrival Price benchmark, or is it to minimise spread costs?

Once the objective is determined then this helps to whittle down the product array to those algos that are best suited to the goal. One of the challenges within the FX algo market at the moment is the lack of a clear taxonomy of algo styles, to help with the refinement of selection. Figure 1 below proposes such a taxonomy, which if adopted across the market, would help end users to categorize the array of products and help in the selection process.

Other factors to consider when selecting algo, depending on the objective, may include:

- **Market impact/footprint of the algo**
- **liquidity sources to be utilized**
- **Execution style (agency, principal, hybrid)**
- **Potential signalling risk**
- **Benchmark performance**

**CONCLUSION**
Ensuring a clear understanding of what you are looking to achieve is essential. Once this is clear, then it is also important to become educated on the specific products that are to be considered, and ask questions to gain a thorough understanding, for example:

1. **What is the algo trying to achieve?**
2. **What liquidity sources does it interact with?**
3. **Does it place passive orders or just aggress the market?**
4. **Does it interact with the liquidity provider’s principal liquidity, and if it does, how?**
5. **What are the key parameters that influence how the algo operates?**
6. **Is it possible to see empirical performance data, including fees?**

Algos have a potential role to play in any modern FX execution process, helping provide efficient, transparent execution in a cost effective manner. However, they are no ‘magic bullet’ and won’t necessarily always deliver ‘best’ execution. It is imperative that upon embarking with the use of algos that the potential pitfalls are understood and they are used judiciously and when appropriate to the trading objectives, benchmarks and liquidity conditions. It makes sense to include algos on any menu of execution options and products, but it doesn’t make sense to always choose them for every meal.
Despite its liquid currencies, well-resourced banks and proven commitment to electronic trading and innovation, the Nordic region has historically lagged behind other jurisdictions in the adoption of algorithmic execution tools for FX. A clutch of buy-side firms and corporates have experimented with algos, but their use has not yet become mainstream.

That may well be about to change, however, as Nordic banks have made greater investment to compete with large international firms in the development and provision of FX algo strategies. With the second Markets in Financial Instruments Directive (MiFID II) raising the bar on best execution and demanding higher standards, firms in Stockholm and other Nordic centres may be on the cusp of a new wave of algo trading.

“Adoption of algos in our markets has been slower than expected, but with the scrutiny of new regulation and liquidity now being much more scarce and fragmented, execution algos are becoming more relevant as a means of achieving optimal execution at minimum cost,” says Kasper Folke, head of e-FX and the algo quant team at Nordea.

Sluggish adoption of algos in the region has not been due to lack of awareness, however. As far back as 2013, a paper published in the Sveriges Riksbank Economic Review noted:

Adoption of FX algos in the Nordic region has been slower than anticipated, but that could change as regional banks develop algo offerings and the buy side seeks new technology in pursuit of best execution. Joel Clark reports.

The Nordics:
A fertile algo FX trading ground

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delved into algorithmic trading practices in the FX industry. In the Swedish krone market, the paper found, algo trading leads to greater competition and efficiency, though it can also introduce increased operational and liquidity risk.

**MODEST ALGO UPTAKE**

In isolation, the Riksbank paper shows only that the Swedish central bank has been attuned to the benefits and risks associated with algo execution for more than five years, but it also set an expectation among some market participants that algos might come to be more rapidly adopted in the future. Some large corporates in the region have significantly enhanced their FX execution through algo trading, but this is not yet widespread.

“...are building transaction cost analysis (TCA) on the back of that so that algo execution can be properly evaluated and optimised. TCA is no longer a nice-to-have but is a statutory requirement for any bank or buy-side firm needing to achieve best execution.”

Nordea is one major Nordic bank that has up until now had held off from offering algo execution in FX, but that will change in the coming months as it prepares to launch a suite of six algos, which will range from passive to aggressive and will allow clients to take advantage of its own internal liquidity as well as broader market liquidity.

For firms such as Telia and Ericsson, which have up until now relied largely on the global banks to deliver their algos, this could be a major market development as they will be able to source algos locally. Nordea believes it can add value over some of its larger global competitors by being more transparent with clients about how different strategies operate.

**NORDIC BANKS HONE IN ON FX ALGOS**

Given the still lukewarm appetite for algos across the Nordic buy side, banks and technology providers clearly have their work cut out to further develop their algo offerings and educate firms about the specific benefits they might glean through the use of such execution strategies.

To some extent, Nordic market participants should be in a good position to do this, given the region’s long history of innovation and early adoption of electronic trading. Technologists believe that while algo adoption might have been slower than expected in the years that have passed since the Riksbank report, the time is now right to try again.

“Banks and buy-side firms are becoming much more multi-asset class oriented, so instead of having a single system per asset class, they want a platform that can leverage new technology across asset classes. MiFID II also increases the need for execution quality and transparency, regardless of asset class, and the best way to achieve this is through automation and algos,” says Jens Persson, senior product manager, multi-asset class solutions at Swedish technology company Tikhvit.

**CUSTOMISATION REQUIRED**

The key question for Nordea, as much as any algo execution provider, has been how to tailor its nascent offering to meet the diverse needs of institutional buy-side firms and corporates in the region. While out-of-the-box algos that can be immediately deployed to perform a marketed function add clear value, there is growing recognition that some degree of customisation is also important for users.

**WE REALISED EARLY ON THAT ALGOS WERE GOING TO BE AN IMPORTANT PART OF THE MARKET, SO WE TOOK THE TIME TO UNDERSTAND HOW THEY WORK AND WHAT VALUE THEY ADD TO THE TRADING TOOLKIT.**

Marcus Samuelsson, FX portfolio manager at Ericsson.
REGIONAL SPOTLIGHT

functions to meet the specific hybrid approach that delivers much value a bank algo can add,” says Folke. “I increasingly find there is not a multibank portal like FXall, in what we can programme on a multibank platform. With advances in the algos, but we are not so sophisticated that we would need customisation,” says Lavefjord.

ACCESSIBILITY AND EDUCATION

Beyond customisation, the accessibility of algos has proven to be a particularly important point for Nordic market participants. While some banks make their algo tools available only through their own platforms and distribution channels, those that are also accessible through third party platforms stand to be more widely adopted.

“There is clear value in making algos easily accessible through third party platforms – from a Scandi perspective that means they have to be available to institutions and corporates via Bloomberg and we will make sure this is the case and be live over the summer,” says Folke.

That will be welcome news for corporates that use Bloomberg and will therefore be able to experiment with Nordea’s new toolset without having to connect directly to the bank. Both Samuelsson and Lavefjord express a preference for these algos that they can access more easily.

“We don’t necessarily use algos every day, but when we have larger orders, they are the weapon of choice to avoid market impact,” says Persson. “Many firms want to extend and improve the off-the-shelf functionality themselves by incorporating their own proprietary logic into the algos, but they need a strong basic toolset to start from.”

NORDEA’S HYBRID MODEL

Nordea’s FX algo offering is built on a hybrid model, meaning that clients can use the bank’s internal liquidity or go into the market through Nordea’s liquidity network. The bank has total operating income of €6.5 billion and total assets of €581.6 billion, and is present in 17 countries, including our four Nordic home markets – Denmark, Finland, Norway and Sweden. “We are the largest Nordic bank with a very diverse client base, so our ability to internalise flow and thereby reduce market impact gives us a unique position in our algo offering,” Folke said. “The future of FX algo development at Nordea is in advising clients on getting the most out of our execution algos, rather than in introducing new algos. The big questions to answer will be on how clients can utilise Nordea’s internal liquidity to their advantage, when clients should and shouldn’t use an algo, and what the pros and cons are.”

“We believe in transparency of the algos’ logic and the advisory of how our clients can use them,” Folke said.

As with any advanced technology, much of the success of algo execution in the future will depend on education. If banks and technology providers fail to adequately articulate the specific benefits of algos, and the way in which they should be deployed and monitored, their use will remain confined to those firms with the necessary in-house knowledge and expertise.

“Algo execution is a journey and we need to educate the buy side on its advantages as an alternative to principal risk transfer. We are establishing an execution advisory desk that will advise customers, based on their individual size and the nature of their flow, on the best possible execution solutions,” says Nordea’s Folke.

But the education process depends as much on the buy side being willing to learn as it does on the sell side being ready to teach. Samuelsson recognises that while Ericsson’s use of bank algos has declined more recently, the firm was an early adopter because it actively sought out information on how algos might add value to its FX operations.

“We realised early on that algos were going to be an important part of the market, so we sought to understand how they work and what value they add to the trading toolkit. As a profit centre for Ericsson, we use our own judgement to determine when is the best time to trade by voice, electronic platforms and algos, and which approach will produce the best result,” says Samuelsson.

BRIGHT FUTURE

Looking forward, the Nordic region clearly remains a fertile breeding ground for the further development and adoption of FX algos. While many institutional asset managers in the UK and continental Europe have been ahead of the curve in dealing with the best execution requirements associated with MiFID II, Nordic firms still have some catching up to do. As trading desks seek to improve execution practices, save costs and address inefficiencies in the months and years ahead, they will inevitably be drawn to the advantages that can be gleaned from algos. And with new tools appearing from Nordea and other providers, it seems a good time to begin this journey.

“I do believe we are at a turning point in algo execution as the largest Scandi banks are starting to offer algos, liquidity is more fragmented and regulation is driving the buy side to become much more educated on how best execution can be achieved. Firms with modest FX flows are still more likely to place principal risk with a bank, but we expect larger institutions to become more active algo users,” says Folke.
BidFX – offering algo access and class leading toolsets to help clients manage their trading flows

TradingScreen company BidFX is a leading provider of electronic trading solutions for the global financial marketplace. The firm is addressing many of the challenges of the FX market head on with a complete suite of negotiation protocols which include Autorouting, Streaming, RFS, Voice and Algos. John McGrath, Chief Revenue Officer of BidFX talks to FXAlgoNews to tell us more about its platform and electronic trading solutions and how they are meeting increasing demand from clients in a post MiFID II world.

John, what prompted TradingScreen to establish BidFX as a dedicated and focused business line for eFX?

Offering a truly multi-asset class EMS from a single screen and a single connection whilst leveraging the same SaaS infrastructure, has always been a key selling point for TS, but the establishment of BidFX as a dedicated and focused business line for eFX has enabled it to build out the product more quickly and more efficiently. This in turn has enabled us to compete more effectively against the longer established and more entrenched FX specific multi-bank platforms. We moved into our own office space in London in March 2017 and now have dedicated development and business personnel in other offices all around the globe.

The growth of BidFX’s business in terms of both new client acquisition and average daily volume, already demonstrates the decision. This is obviously great news for BidFX but also for TS as a whole as it strengthens the overall EMS value proposition. More and more of our multi-asset class pitches demand a best-of-breed FX solution which is competitive compared to the historically dominant incumbents. As a result, we are increasingly winning new mandates and are able to capitalise on cross-selling and up-selling opportunities where a buy side has initially started on the FX only or the Listed only side.

FX remains a relationship driven business for most market participants. How has that influenced the way BidFX has been designed?

BidFX has evolved with clients, and their relationship driven business is at the forefront of design. We are aware that for most clients their choice of FX EMS is there to enhance the workflow and provide an evolution of this model which has, for the most part compared to other asset classes, led to a well-functioning and efficient market. It’s this functional and efficient market we look to enhance with BidFX’s capabilities.

Please tell us a little more about BidFX’s client driven model and how it helps to create an environment that can facilitate best execution?

BidFX is all about our clients. Our clients are all market participants – liquidity consumers and providers. In the past year best execution has been one of the driving factors behind the adoption of BidFX as many clients choose of EMS or platform.

In what ways do you think the overall EMS value proposition has strengthened recently?

There is no doubt that regulatory changes and increased awareness of FX workflow and its place within a multi - asset firm strategy has led to a lot of clients either reviewing current FX and EMS propositions or embarking on an RFP in order to move from traditional older style FX only platforms to multi- asset EMS or dedicated FX EMS. BidFX’s recent growth has been exponential in terms of volumes and clients and is driven by innovative solutions delivered to an increasingly complex eFX market. No two clients are the same anymore and the BidFX technology framework and infrastructure must have the flexibility and the enhancements that help clients innovate as well as being technically robust enough to disseminate billions of price ticks per day.

BidFX offers a truly multi-asset class EMS. In what ways can you assist clients to access a wider range of industry leading FX algorithms than many of your competitors?

The evolution within the eFX market in conjunction with the increased regulatory framework has led to many of our clients looking for more sophisticated execution mechanisms. As part of this we have been working with our Liquidity Providers to provide an Algo Hub service to clients which encapsulates a complete range of LPS and strategies with no development and infrastructure costs. As well as a Best of Breed Algo Hub we work closely with our Algo providers to ensure any new Algos can be onboarded as quickly as possible in line with client demand.

What in-depth analysis of trading performance can you provide and what are buyside firms especially looking for in terms of analytics to inform the FX execution process and post trade TCA?

Clients can use our pre-canned TCA or unique tick by tick database in order to build an extremely powerful decision-making product, pre-intra-post trade, which can be combined with cutting edge execution capabilities to offer a powerful analytical and trade execution solution. We have seen a lot of investment into this area at BidFX and will continue to invest and innovate to meet client demand.

Broker randomisation tools, better known as algo wheels have now arrived to give traders the ability to assess, monitor and justify algo and broker choices to regulators. Do you expect to see more use made of algo wheels and other multi-broker allocation processes in FX?

A lot of our clients are tier 1 multi-asset institutional accounts who are either already familiar with the algo wheel concept or are market leading in their approach to regulatory and market oversight requirements. Many of them have already implemented stricter governance and testing around the policies of algo selection and it’s important the client selects the right algo provider and algorithm based on these. To do this you need a tech provider who can react to developments such as these and deliver solutions back to the client for them to implement. Our multi-asset EMS approach allows us an advantage to roll this feature out across several asset classes.

What impact are regulatory developments and MiFID II in particular likely to have on shaping future demand for solutions from BidFX including increased algorithmic trading access?

MiFID II was a catalyst for many firms in Europe through 2017 to take a fresh look at their FX workflow and how they react to the upcoming regulatory landscape with their current FX provider. We saw a substantial increase in large buy side approaching BidFX to discuss transparency and best execution, and many saw MiFID II as a catalyst for implementing a more future proof eFX policy in order to protect their clients from more traditional platforms concentrating on revenue protection. One of the added benefits of BidFX is that it has been developed, and continues to develop, with the best market leading technology possible for the current environment. Clients can use our TCA product or/and our tick by tick database in order to build an extremely powerful decision-making product which can be combined with cutting edge execution capabilities of which our Algo hub is part of the solution.
It’s time to commit to data

By Abraham Thomas

Capital markets are like Lake Wobegon: everybody is above average. Every active investor thinks their forecast is better than the market consensus. Every algo trader thinks their orders are not being picked off. Every risk manager thinks their model is more robust than anyone else’s.

To some extent this is understandable. It’s irrational to participate in a zero-sum competition if you don’t have some sort of advantage. And it’s hard to attract investors or clients if you don’t at least claim to have an edge.

But that edge, even if it exists, is always tenuous. An execution algo from 10 years ago would be woefully inadequate today.

It’s an evolutionary arms race; stay still and you’ll perish. And practitioners understand this, which is why models, algorithms and infrastructure are constantly being reinvented. Firms invest heavily to stay on the cutting edge of trading technology; “constant vigilance!” is the battle cry.

TAKING DATA FOR GRANTED

Amazingly, this degree of diligence does not extend to one of the key inputs to every single capital markets decision: data. Firms tend to take data for granted. Whether in portfolio design, or trade execution, or risk management: after an initial exploration and implementation, the data element is largely ignored. There’s rarely an ongoing investment in data; it’s assumed to “just work”.

This is misguided. Even the best systems fail if they’re given incorrect information. And in a zero-sum game, information doesn’t even have to be ‘incorrect’ for the system to fail; merely ‘less good’ than the competition. A simple model built on good data will beat a sophisticated model built on bad data every single time. And yet, firms invest far more time, effort and resources on building and improving and iterating their quantitative superstructure than they do on reinforcing their data foundations.

FX market participants are especially guilty of this error, because FX data has historically been hard to find and hard to use. FX markets are notoriously fragmented and opaque; as a result, there are few providers of truly comprehensive, accurate and reliable FX data.

Faced with these constraints, most participants decide to double down on the part that is in their control, namely the algorithms and models and technology. Ironically, this means that the potential advantages of a data-first policy are even greater in the FX market than in other asset classes. And FX firms are finally waking up to this fact, and committing themselves to data.

WHAT DOES IT MEAN TO BE COMMITTED TO DATA?

Most analysts, when asked what “good data” means to them, will invoke some combination of accuracy, consistency, completeness, documentation, timeliness and provenance. This answer is fine as far as it goes, but it doesn’t go nearly far enough. It’s artificially constrained: it assumes that the data is endogenously given, and that the analyst’s job is to accept or reject it. That’s simply not true anymore.

A truly data-first policy does not ask, “How good is the data I have?”. It asks, “What data can I get that addresses my specific needs?” And it constantly re-asks that question. This requires some thoughtfulness. For example: analysts accustomed to no-arbitrage models assume that “the price is the price”. But it’s not. As Stuart Farr from Deltix writes, “Forex quotes from a given bank differ between buy-side firms according to individual customer characteristics such as credit quality, assets, trading volume and trading style … There is little point in [analyzing] market data with quotes unattainable to the firm in question!”.

A deeper analysis would recognize this, and adjust accordingly.

Execution algos depend critically on volume. But “true” volume is one of the hardest things to determine in the FX market. It’s easy to see quotes on a screen; it’s harder to know the depth of liquidity that underlies these quotes, or the volume of transactions that are happening in real-time across all venues, or the types of participants behind those transactions. A new generation of data sources such as CLS actually have this information, comprehensive and in real-time, but only the most data-progressive firms are using it.

Another volume-based example comes from TCA. It’s common to use VWAP to estimate execution costs post-trade; but most commercially-available VWAP datasets are based on less than 1% of the volume in the market; furthermore, they multiply prices and volumes in aggregate, not on a per-trade basis. Performing TCA on flawed data will inevitably yield flawed results; yet many vendors continue to do so.

PRECISION WITHOUT ACCURACY

These examples serve to illustrate an important point when it comes to data: the danger of precision without accuracy. It’s all too easy to assume that your data is best-in-class, but doing so creates a confidence that is illusory. Just like the best quants constantly second-guess and double-check and stress-test their models, and the best algo traders constantly try to game their own execution systems, the best data practitioners constantly question the relevance and applicability of their own data, and ask if there are other, better sources out there for the insights they seek.

And this brings us to another key attribute of modern data practice: flexibility. Data sets evolve, newer ones outpace older ones; yet most practitioners are not set up to upgrade. It’s easier for most firms to swap in a new model or a new algorithm than it is to swap in a new data source. Fortunately, modern data providers like Quandl are solving this problem for them by providing single-API access to source-agnostic feeds and light web-based delivery tools.

CONCLUSION

All in all, we’re seeing a sea change in the way FX participants of every stripe are treating data. Good firms are committing to data like never before: they’ve realized that resources spent on data underpin all their investments in other areas. And the very best firms have moved beyond this: they’ve begun to treat data, not as a cost to be minimized, but as a genuine profit center. Data advantages are real: by investing consistently and substantially in data, the best firms ensure that they are always above average – whether in trade selection, execution, or risk management. Now that’s something that would not be out of place in Lake Wobegon!
QuantInsti® - Laying the foundation for aspiring Quants across the globe

QuantInsti (QI) is one of Asia’s pioneering Algorithmic Trading Research and Training Institutes, focused on preparing financial market professionals for the contemporary field of Algorithmic and High Frequency Trading. Headquartered in Mumbai with a subsidiary in Singapore, QI was founded by iRageCapital and a team of Quantitative and High Frequency Traders and domain experts dedicated to providing practical knowledge to professionals interested in Algorithmic Trading.

QuantInsti’s mission is to help traders across the globe to get introduced into the world of automated trading and benefit from technological innovations. It had launched the first certification programme in Algorithmic Trading in 2010. Since then, the Executive Programme in Algorithmic Trading (EPAT) has seen its participants from 60 countries benefiting from the six month long live-online programme.

EPAT is tailor-made for individuals working in, or intending to move into the buy or sell-side of business focusing on derivatives, quantitative trading, electronic market-making or trading related technology and risk management. The program is built around a fully examined core of three modules:

- Statistics & Econometrics
- Algorithmic & Quantitative Trading
- Financial Computing & Technology

The programme is also an opportunity for the participants to get an exposure to some of the leading global market practitioners who act as a guide throughout their tenure. “EPAT helped me to interact with a growing community of alumni from more diverse backgrounds. If you are looking for a professional overview of the space, or already an expert looking at some new topics EPAT can help you learn something new,” says Derek Wong, Director of Systematic and Options Trading at Foretrade Investment Management Co., Ltd., China.

As a part of the programme participants are assigned a project that helps them get a hands-on experience and test their ability based on the knowledge acquired from the course.

Further information is available at: www.quantinsti.com

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When would it be used?
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What does it do?
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User Considerations
- Different order types give you control of visibility.
- The default of IOC is the most urgent.
- A limit price must always be added.

Key parameters available
- Immediate Or Cancel (IOC) – Sweep then cancel balance.
- Hidden – Stays invisible, hitting price when available.
- Iceberg – Posts passively at your price.
- Immediate Or Cancel (IOC) – Sweep then cancel balance.

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Trading Foreign Exchange Triplets

A framework that can be extended to FX trading algorithms

By Alvaro Cartea, Sebastian Jaimungal, Tianyi Jia

The authors develop the optimal trading strategy for a Foreign Exchange (FX) broker who must liquidate a large position in an illiquid currency pair. To maximize revenues, the broker considers trading in a currency triplet which consists of the illiquid pair and two other liquid currency pairs. The liquid pairs in the triplet are chosen so that one of the pairs is redundant.

The broker is risk-neutral and accounts for model ambiguity in the FX rates to make her strategy robust to model misspecification. When the broker is ambiguity neutral (aversion) the trading strategy in each pair is independent (dependent) of the inventory in the other two pairs in the triplet.

The authors employ simulations to illustrate how the robust strategies perform. For a range of ambiguity aversion parameters, they find the mean Profit and Loss (P&L) of the strategy increases and the standard deviation of the P&L decreases as ambiguity aversion increases. This is the first paper that shows how FX brokers manage large positions in currency pairs. The framework can be extended to FX trading algorithms to make markets and those designed to take speculative positions in currency pairs with strong co-dependence.

Download is available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3054896
A revisit of TWAP

By Cameron Mouat, CEO of Aoraki Advisors

Algos which trade according to a linear schedule or aim to get an average price over a time interval have been available in FX spot for at least 10 years. Every major FX broker has a version in what could be considered a commoditised product. However, these algos can be traded in a number of different ways, and so it is worth revisiting why they are so popular and features that can differentiate them.

Collectively, this class of algos are usually referred to as TWAP (Time Weighted Average Price) although other name variants exist. They are designed to target the average price over some time interval, and are still one of the most popular algos used by execution traders. There are three main reasons for their popularity:

1. The algo trading style is conceptually straightforward and easy to understand. This is beneficial for traders who are not active algo users, those who are new to algo trading, and traders who are required to explain execution methodology within their firm.

2. The algo is useful in working orders over a time interval. Not every trade needs to be executed at a point in time, so achieving an interval average price and working an order to reduce market impact and spread costs, is achievable and desirable.

3. From a cost analysis perspective, it is reasonably easy to measure how the algo has performed against its average price benchmark, and make comparisons across different executing brokers.

SO HOW TO DETERMINE ONE TWAP FROM ANOTHER?

Firstly, look at standard performance measures provided by a broker or a third party. This should be based on a sample of similar tradess in similar sizes and currency pairs. The TWAP benchmark is the average mid-price over the interval of the trade. Secondly, when choosing from the menu of TWAPs available, functional considerations include:

- Will the algo execute solely at predetermined intervals, by crossing a spread, or does it work passive orders to capture spread?
- Randomisation of frequency between orders sent to ECNs. Regular events have more obvious signals to microstructure sniffing algorithms to take advantage.
- If executing a less liquid currency pair, does the algo look at the market spread and is it opportunistic in capturing spread when it is narrow?
- Is the algo flexible in its scheduling based on market conditions? For example, in higher volatility markets capturing spread might become less important.
- Will the algo execute against internal liquidity and ECNs? Many brokers have different styles of passive execution into their liquidity pool including matching at mid.
- Does the algo employ any alpha in the strategy and what are the predictive statistic associated with the alpha?

A simple regular TWAP, which crosses the spread on every slice, can expect to have slippage of around half the spread to the benchmark with only a small variation from this. More advanced TWAP algos work orders both passively and aggressively against internal and ECN liquidity. They should perform better on average, although could have more variance in performance (due to having more flexibility in execution) especially in less liquid currency pairs.

If the goal is to reduce the risk of a sub-standard execution against the benchmark, a TWAP which closely follows the linear schedule against internal liquidity might be sufficient. Alternatively, if the average performance is more important than the variability of performance, then an algo that has a bit more flexibility and advanced order working features is likely to be a better alternative.

TRADE INTERVAL

The main parameter in defining a TWAP algo is the trading interval. Trading too quickly will have more impact and trading too slowly will incur more market risk. Pre-trade analytic tools provided by banks or independent vendors are useful tools to calculate a trade-off between market impact and market risk, and to choose the trading interval.

One technique used to reduce the likelihood of impact is to add a participation parameter to the algo instruction. Participation is the rate of trading relative to an estimate of volume from ECNs. Restricting a TWAP algo to a participation rate of say 15-20% would ensure market impact is kept under control. Although this might result in the algo taking longer to execute and potentially not complete by the desired end time. In less liquid currency pairs, where liquidity can be thin and variable, this parameter becomes more important.

Although the TWAP has been around for a long time, we have seen some of the features that can differentiate between implementations of this algo. Depending on the use-case, the style of TWAP chosen could be different. These decisions are where a trader can add additional value to the execution process.
Workshops, Conferences and Events

TRADETECH FX 2018
Barcelona, Spain: 10th - 12th Sept 2018
tradetechfx.asia/research

THE 14TH QUANTITATIVE FINANCE CONFERENCE
Nice, France: 26th - 28th Sept 2018
wsquantfinance.com/the-14th-quint-finance-conference_-_nice_september_2018.pdf

STAC SUMMIT
New York, USA: June 13th 2018
https://stacresearch.com/stac2018

FX WEEK
FX Week Asia 2018
Singapore: 29th August 2018
www.fxweekasia.com

AIR Summit 4.0
New York, USA: Sept 5th - 6th 2018
airsummitconferences.com/2018

TYPES OF ALGORITHMIC TRADING STRATEGIES
youtube.com/watch?v=4Ae2_i5nMxs

EFFECTIVE CALCULATION OF YOUR COST OF TRADING IS NOW POSSIBLE.
youtube.com/watch?v=QGw7k3GShNk

ALGO TRADING | INTRODUCTION TO MACHINE LEARNING
youtube.com/watch?v=G00rzWalkBF

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