



By Nicholas Pratt

As the use and adoption of algorithmic FX trading strategies continues to develop in the major financial markets of London, New York and Tokyo, focus is now turning to the next tier of FX marketplaces such as Western Europe, Latin America, Scandinavia, Australia and Asia. Nicholas Pratt sets out to discover what correlation exists between global growth patterns of Algorithmic FX trading and the characteristics of individual regional markets around the world.

Regional development of Algorithmic FX trading

The regional development of FX algorithms is potentially subject to a number of factors aside from the appetite and financial resources of market participants. Even accepting that the appetite and resources do exist and that a demand arises, how might the algorithms be designed to reflect the idiosyncrasies of specific international markets?

Will the regulatory regime of each region have a discernible influence over the design of algorithms, particularly in relation to best

execution? What impact will the uncertainty in the capital markets have on the continued interest in emerging market currencies and will there be a similar demand for matching FX algorithms for these currencies?

In the equities world, the development of algorithms has been partly driven by the need for speed and the desire for low latency, leading to a focus on the physical location of algorithms and execution venues. Is there likely to be such a focus for FX algorithms? Will the variable



James Hartley

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quality in infrastructure, connectivity and telecom services across different regions affect the use of FX algorithms?

Correlation with global growth patterns

In terms of the correlation that exists between global growth patterns of algorithmic FX trading and the characteristics of individual regional markets around the world, a notable observation is the changing environment in Europe, says James Hartley, vice-president, Research at UK-based consulting firm A-Team Group. "As more countries come into the European Union and wish to be included in the euro, the number of currencies, and the number of currencies that are interesting from an FX perspective, is declining."

In general, this decline has minimised differences within a region in Europe, excepting the Nordic regions and Eastern bloc where national currencies are still the order of the day. Similarly the US and Europe are coming closer together in a regulatory sense, albeit on a gradual basis, which should make the development of FX algorithms easier.

The big play, says Hartley, will be Asia, coupled with a healthy dose of Middle Eastern influence.

The increase in the trading of emerging market currencies will help to increase the uptake of FX algorithms around the world. "I think you'll find a dramatic increase in this area in Asia and the Middle East – or at least in those currencies."

In terms of the impact that geography and physical location has on the development and growth of FX algorithms, the guiding rule is the provision of electronic access to trading partners in an expedient fashion, says Hartley. Consequently, the positioning of algorithmic engines on major bandwidth outlets will be a concern.

Of less concern, potentially, is the whole issue of collocation in an international FX context. There is the idea that any algorithm dependant on a physical location and the electronic distance between a black box and an execution venue, will only have a short time of effectiveness before it is overcome by a competing algorithm with a better location or an algorithm that is able to arbitrage other algorithms in multi-currency swaps due its proximity to multiple locations.

There is also the potential for certain algorithmic strategies to thrive in certain time-zones or region more than others, says Hartley. "In Europe, where geographic diversity is more prevalent, they also have local markets to support them even though MiFID equalises the trading capability. The real concern is expedient access to the most liquid market for the basket of instruments you are trading."

As a consequence of this concern, a diverse infrastructure is needed and such strategies need to run closest to their target markets," says Hartley. "There is a similar issue in Asia – and with ASEAN forming a consortium of exchanges you should see this issue coming to the forefront. In the US, the real dichotomy is options vs. equities trading. Your decision to locate is based on your prevalent form of instrument – but what if you are hedging your equities position against options disparities? Then what do you do?"

Asia-Pacific region

High velocity and algorithmic trading may be maturing in the US and Europe but in the Asia-Pacific region it is still in its fledgling stages. The Singapore Exchange (SGX) was the first execution

venue to offer a facility for high speed trading after it teamed up with Singapore Telecommunications to introduce ultra low latency trading in August 2008.

According to Gan Seow Ann, SGX senior vice-president and head of markets, the new service was a response to the demands from a growing segment of proprietary trading firms and hedge funds specialising in algorithmic trading, that were establishing a strong presence in Asia and are dependant on speed of access for their trading strategies.

A forerunner to the SGX initiative was the Australian Stock Exchange (ASX) which changed its business model as well as updated its infrastructure to cater for the growing algorithmic activity of its members. By introducing a tariff that was based on the value of trades rather than the number of trades, the ASX saw the peak number of trades increase from 200,000 per day in October 2006 to 575,000 by August 2007 thus underlining the number of proprietary traders executing their trades using automated algorithmic technology that divides large block trades into 'sliced and diced' segments.

As was the case in the US and Europe, the initial demand for algorithmic trading in Asia-Pacific markets has been in equities and derivatives where low latency and speed of access is more integral to trading strategies. But the expectation is that this interest will subsequently spread to the FX market, particularly as investors are looking at the cash-based currencies markets as an alternative to the ailing equities and derivatives markets where liquidity and returns have been markedly reduced due to the current economic crisis. Additionally, those firms engaged in multi-asset trading are now devoting an increased percentage of their investments to the FX markets.

Another recent developments has been in the Middle East where India-based Financial Technologies announced the formation of the Bahrain Financial Exchange (BFX), a new international execution venue that aims to provide "the widest possible access to its brokers from any part of the world to trade in multi-asset products through a single venue".

Regulated by the Central Bank of Bahrain, the exchange will commence trading in the first quarter of 2010 and will list cash and derivative instruments on multiple asset classes including currencies.



Axel Pierron

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Despite the somewhat gloomy outlook for international markets, those involved are talking confidently about the prospects for the new exchange with BFX director Arshad Khan saying: "The multi-asset profile of BFX will give it a unique standing to become a leading market place in the region."

But is it simply a case of 'build it and they will come' or is there a genuine groundswell of demand for algorithmic trading that will be resistant to the cost-cutting, risk-saving sentiments gripping traders and investors at the moment? And what additional factors will influence how the Asian market is able to facilitate the algorithmic trading trend?

Issues impacting on Algorithmic FX uptake

The most noticeable feature of the Asian market is its breadth and the number of clearly distinct national markets that are contained within the continent, such as Korea, Japan and China as well as the likes of Australia and Bahrain when the 'Asia' tag is expanded to cover the Pacific regions and the Middle East. Yet there are three issues which are likely to affect the take up and provision for electronic and algorithmic FX trading which are shared by all regions.

The first of these and the chief concern in the immediate future for the development of electronic and algorithmic FX trading services is the issue of regulation and the onset of more potentially protectionist policies, says Axel Pierron, senior analyst with France-based consultant Celent. There are already currencies that cannot be traded outside of their domestic markets and there are restrictions on overseas players trading in domestic markets and domestic players trading in overseas markets. The Chinese yuan, for example, cannot be traded and this has created a major demand for non-deliverable forwards (NDFs). The inability to deal with the yuan means that people trading with China cannot hedge their FX risk without access to these NDFs. "If electronic and algorithmic trading is going to thrive in Asia, these restrictions need to be addressed."

More worryingly for Pierron is the prospect that many Asian regions will react to the current uncertainty in global financial markets and the prospect of inflation by implementing more protectionist policies. "For example, it seems the Korean won may have a similar ban on overseas currency trading which will make it a very complicated currency for FX traders to deal with."

There is also the issue of poor connectivity, both within and between regions, says Pierron. "Many of the more emerging markets in Asia are very hard to access. This lack of connectivity makes electronic trading and particularly low latency trading a challenge. And for algorithmic trading to work, you really need to be located close to the market."

Distribution of algorithms

As well as the speed of execution and performance of the algorithms, there is also the distribution of these algorithms and the importance of preventing any bottlenecks, particularly when the distribution is applied on a global basis. According to Greg Malatestinic of securities industry consultant Jordan & Jordan and a member of the FIX Protocol Algorithmic Trading Working group, bottlenecks arise after an algo has been developed and tested.

"Traders who wish to use these algos must wait for their OMS/EMS vendor to build an appropriate order entry screen for each of them. This usually means adding GUI controls or widgets where the user can enter values for the algorithm's custom parameters. Since each algorithm has different parameters there needs to be a screen for each. If these screens are built by custom coding then they are reliant on standard software development life-cycle procedures which can be costly in terms of time and resources."

Deployment is also an issue, says Malatestinic. "To get these new screens in the traders' hands, an upgrade is needed. But because a vendor will only be willing to release new versions and perform upgrades a few times a year, the trader must wait." If you consider regional differences the problem of managing the release and deployment of an OMS/EMS gets even more difficult, says Malatestinic.

"This is because the parameters for a particular algorithm may be different from region to region – for example, algorithm X may have 8 custom parameters in Europe but only 6 in Asia. From the broker/dealers point of view it is the same algorithm, but the vendor may treat them as individual algorithms and build separate screens for each. Algorithms for a particular region may be packed into a separate version of the OMS/EMS. This too adds a wrinkle because multiple versions of software must now be maintained, user entitlements must be managed and extra care must be taken to ensure the right algorithms get into the right hands."



Greg Malatestinic

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The state of telecoms and data infrastructure throughout many Asian regions is also a major issue. There are a number of large and established participants, such as GL Trade, but the market is by no means saturated with providers. “Eventually we will see the increased involvement of firms like Fidessa and GL Trade in these regions but right now we are seeing a slowdown in activity,” says Pierron.

E-trading infrastructure

The extent of electronic FX trading in Asia is increasing but not to the level that is evident in other markets, principally the US and Europe. And in order for algorithmic FX trading to take-off, there needs to be that foundation of a solid and widespread electronic trading infrastructure, says Pierron. “Without that foundation, there is a significant barrier to the adoption of algorithmic trading. The implementation of direct market access (DMA) will be a major issue for the buy-side.”

A lot of the sell-side banks operating in Asia have been targeting low latency trading and have launched initiatives to try and address this issue by driving liquidity for online trading and implement algorithmic trading services. These initiatives would be helped by the provision of sophisticated order management systems and the requisite front-end software for developing algorithmic tools and strategies.

Current market conditions affecting all financial firms are not helping to spur on these initiatives and drive the necessary investment, says Pierron. While a number of local players are relatively unaffected by the current depression, the major, global sell-side banks that would ordinarily be spearheading such initiatives and taking a leading role in encouraging the adoption of electronic and algorithmic trading have other priorities right now, says Pierron. “Many of them are in survival mode so are not dedicating many resources to FX algo trading in Asian markets at the moment.”

The ‘follow-the-sun’ business model

The regional markets all have different needs so algorithms can be developed to meet all of these specific requirements. But for many of the more global firms, the focus is on developing algorithms and software for the ‘follow-the-sun’ business model, says Joey Horowitz, chief technology officer at Aegisoft, a US-based developer of algorithmic trading systems. “As the time of day changes, different currency pairs come into play



Joey Horowitz

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and firms want software that enables them to trade all of these currencies seamlessly.”

Essentially there are two sets of needs contained within these business models, says Horowitz. “The first relates to the ‘due’ currency crosses for those currencies that are not as liquid as the major currencies such as the euro and the dollar. Consequently users need software that can help search for liquidity. The second issue relates to speed and performance for the matching engines that are based around various global destinations. Clients want to use the most active matching engines. Some of these are centralised and some of them are decentralised and clients want a platform that gives them the best access to all engines at any given time.”

Co-location is becoming more of an issue in FX trading, albeit not as much as in the equities and futures world, but, says Horowitz, he is seeing more interest in locating their servers closer to the trading and execution venues. “Our model is designed to be scalable and deployed in many regions simultaneously so that clients can choose exactly where to deploy their algorithms for best execution at any given moment. Architecturally the technology can be split up so that

clients can connect to multiple gateways and multiple pricing/matching engines. It is about the principle of component-based architecture, something which has come from the experience in the equities market.”

Customising algorithms, however, is a second aspect. “A lot of what we are doing today is about making technology needs a greater part of our platform and creating specific product enhancements based on client trading patterns. For example, there are clients looking to use synthetic trading across currencies or across asset classes.”

In terms of regional developments in the adoption of FX algorithms, Horowitz says that it has been fairly stable area. “We have not seen a massive increase in demand for algos that can be used in specific regions. For example we will write 10 algorithms that clients can then use in different regions. We are seeing more interest from different parts of the world but they will be using the FX algorithms in the same way. This is one of the important aspects of the platform that we provide – that clients do not have to carry out much customisation in terms of developing their algorithms for different regions. Sometimes there are more proprietary elements involved but generally we try to develop tools and software that is functional for every type of trader.”

Obstacles to development

For the providers of algorithmic trading software such as Aegisoft, the potential obstacles to development do not so much lie in the specific regions but more with the respective technology resources of the liquidity and pricing providers. “Some ECNs are using old technology and this makes it harder for us to aggregate prices because not all ECNs are operating at the same speed and we have to be careful that this variation in performance does not affect the integrity and accuracy of the pricing data that we use for our models. So it is not a regional issue as such but more of a technology issue for those banks and ECNs that are providing pricing.

“As more vendors adopt specific standards – FIX for trading and FIX FAST for providing market data, it is becoming easier to connect to execution venues and newer technology should result in better performance. Ultimately we want to use more advanced technology where connectivity is not an issue but there is still an attraction to old technology for many firms that trade in FX. The futures and equities markets are still very

performance-driven but FX has been slower to develop in this area,” says Horowitz.

Increased demand for FX algorithms

Another provider of FX algorithmic services is Credit Suisse, through its AES division. According to Jonathan Wykes, a director at Credit Suisse and head of sales for AES, there has been a general increase in demand for FX algorithms, albeit not in specific regions. “In those markets with more volatility and less liquidity, we are seeing an increasing number of people looking to use algorithmic trading and liquidity discovery tools. We are also seeing more business as a result of the credit crunch and the problems that a number of institutions are facing in terms of accessing liquidity in emerging market currencies and accessing lines of credit.”

“In the current climate where liquidity has decreased in the majors as well as emerging currencies, risk-priced spreads have widened dramatically. Consequently, traders are more sensitive to the fees they are paying brokers on a risk price and AES is looking more attractive to them because it offers better execution”, says Cameron Mouat, Head of AES FX Trading and



Jonathan Wykes

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Product Development at Credit Suisse. He goes on to say, “This difference between algorithmic spreads and risk priced spreads is magnified in emerging market currencies but it is a global phenomenon in our view and not specific to a particular region.”

Wykes also talks of the follow-the-sun method of algorithmic FX trading adopted by major firms and sees few impediments to its development in terms of both technology and regional issues over connectivity or infrastructure. “When firms are trading emerging market currencies, they tend to be doing this out of the major centres rather than the emerging country itself,” says Wykes. “I think in most instances the technology is pretty mature and resilient, certainly in the major centres like London, New York and Tokyo,” says Mouat, “There are not too many differences here to worry about in terms of the technology.”

Co-location services

And for those firms that are trading from the emerging market countries, they tend to have less sophisticated trading demands so are not engaged in high-frequency trading and, therefore, do not require co-location services, says Wykes. If there has been a demand for co-location services, it has been in the US and London where there is a greater proportion of high-frequency traders and a greater amount of liquidity.

One instance where co-location is helping to increase the international take-up of algorithmic services is when it is adopted by the ECNs who are putting their servers

in more regional sites in Asia, Eastern Europe and Latin America as opposed to having a single location in Chicago or New Jersey. This means that as the ECNs attract more international customers, these same customers do not have to co-locate in Chicago but can choose a venue closer to their base.

Conclusions

It is clear that the international expansion of algorithmic FX trading has some modest momentum at present but while regulatory, technology and structural obstacles are there, the biggest hindrances to further development in the short-term are the current market conditions. As Wykes says: “A number of banks that were considering developing their own algorithmic trading and liquidity aggregation tools are finding that their resources are diminishing, their budgets are frozen and these projects are being put on hold.”

Of course in many instances this may mean that they look to a third party provider like Credit Suisse and AES which offers the same tools but without the burden of an in-house development team to install and maintain the algorithms. But there will also be the possibility that those tier two firms that have not already invested in acquiring an algorithmic trading capability, such as the tier one banks that are able to apply their algorithmic tools and strategies on a global scale with relatively few obstructions, will avoid any new projects at all until the markets settle down. And as yet even the best technology developers have been unable to find a solution for apathy.

