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Erik Lehtis **REFLECTIONS OF CHICAGO**

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REFLECTIONS OF CHICAGO

As one of the pioneers in the algorithmic trading space, a sector credited for much of the FX industry's growth in recent years, Wolverine Trading's Erik Lehtis talks to Julie Ros about his move to the high frequency space, the current credit crisis and prospects for the future.

Julie Ros: Your career started in 1984, what attracted you to the algorithmic space after nearly 20 years in banking?

Erik Lehtis: Early on, I worked for a Japanese bank doing a lot of dollar/yen and yen crosses. Then I went to a French bank and traded EMS, especially the French crosses. After that I joined the EMS desk in Chicago at Harris Bank (soon to become Bank of Montreal), and traded all the crosses, but particularly lira crosses. So doing arbitrage was a way of being successful in the foreign exchange market going way back to before there was any kind of electronic trading.

As I became a specialist in trading the crosses, I went from using a calculator to using spreadsheets, then, as PCs became capable of accepting live data feeds, I was able to incorporate that into my pricing models. I reached a point where I felt it would be beneficial to understand all the electronic developments going on, so I went to school at night for a couple of years and got a Masters degree in computer science. I didn't know where it would take me, or where the market was going, but it felt like things would get a lot different as time went by. So algorithmic trading kind of flowed naturally and I was lucky to be waiting there when it got to that point.

JR: You made your first move to the proprietary trading side in 2002. What was the learning curve like?

EL: The firm I joined first did a lot of options trading and interest rate products, which gave me great exposure to new markets that were a bit more electronic than FX was at the time. Then I found an opportunity at a prop trading company

that was trying to expand into FX and fixed income. Within a couple of years, we were one of the biggest players in FX and fixed income.

The thing I learned quickly was that this is a collaborative game. You can walk into a shop with great ideas and some component of the picture, but it's a small piece of the puzzle and it's the efforts of so many individuals that makes the whole thing successful. I'd encourage anyone who thinks they have some golden formula for algorithmic success to keep in mind all the different aspects that go into making that a success: you need capital, network engineering, software technology, the latest and greatest hardware, and the many people excellent in those sectors all participating in the realisation of that dream – it takes a lot more than a good idea. It's like making movies, you can be a good screen writer but it doesn't make you the star of the movie.

JR: What has your day-to-day trading life been like throughout the economic crisis?

EL: The landscape is shifting so rapidly, there's nothing you can take for granted any more. A lot of the assumptions about relationships in the financial space have been challenged and, quite frankly, blown away. These are things you lean on when you're doing arbitrage. When you are doing any kind of trading, you look for signals and those signals usually have to do with a relationship and those relationships are now gone. Every day is a process of reassessing the current state of the market. The first step is filtering out the things that aren't



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worthless, and the second and much harder step is finding out what the new relationship is. Your P&L will tell you the answer to the first one, but you have to do a lot more research to find out the answer to the second.

JR: Has the task facing an algo trader changed dramatically in recent months?

EL: Yes. As algo traders we've been able to get lucky with our habits in terms of the way we parameterise our models and have to make a lot of changes to our parameters, if not our models themselves, just in order to adapt to the liquidity we've been able to find.

JR: So the market is still liquid?

EL: There's liquidity, just a lot less of it. Obviously the biggest example is the 2-year TED spread (the credit spread between government debt and Triple-A bank rated debt), that was something you could trade around until recently – but that relationship has gone off the charts. There's been so many of these kinds of things that have changed...there's always a basis relationship in some asset class – whether it's FX, equities, interest rates, commodities. But nobody knows what they are now, because we don't know what they're going to be.

JR: Has the shelf life of a strategy shrunk dramatically?

EL: The simple answer is yes, absolutely. I think the more complicated answer is – you have to take all these strategies and really look at them and find ways to breathe new life into them and make them valid again. That might mean changing the way you define the relationship between the things you're comparing and trading against each other, or the signals you use to monitor that relationship.

JR: How has the experience of current market conditions helped to make your models and strategies more robust?

EL: By challenging all our assumptions and quickly finding out which ones were valuable and which were temporal. There also comes a time to discard that which used to work and search for something new. The algo trader should always be discovering what other people are doing and managing those relationships and positions within those relationships that facilitate liquidity at as low a risk as possible.

The high speed arbitrage professional usually has one profile: they thrive by making markets and adding liquidity. In order to do that they have to have some understanding of the correlations that exist in the market and when those correlations change, they have to change their behaviour – but they don't just say there are no correlations left, they just have to discover where the new correlations now live. And that should be a relentless, daily quest.

JR: Is there any discretion in your trading process beyond the creation of the original model?

EL: Arbitrary discretion is bad in any model because it's an unknown. If you want to programmatically introduce a

decision process into an algorithm, it becomes a more complex algorithm and can be good if it's done right. Embellishing what used to be a successful, simple algorithm is really what ends up being the end stage lifecycle of most algorithms, and that means adding an element of extended logic or decision making. But if that's not done in an automated fashion, then it's really a contaminant.

JR: What attracts you to FX as opposed to other asset classes?

EL: I've always been an FX trader. I was interviewed a long time ago about what role FX plays in the economy. I think my response then is still a valid observation today: that FX rates act as a series of valves to release pressure in a marketplace that might be experiencing some displacement due to surges in supply and demand that are just temporal. If you take away currency fluctuations, then you redirect those pressures onto what's available – government debt, commodities, stocks, or other areas, such as political ones. So by allowing currency prices to fluctuate, we actually create a release for these excessive, built up imbalances. I think FX rates serve a valuable role as an important component in a complex system of free market dynamics.

JR: What are the key components to creating a successful algorithmic trading business?

EL: We're living in a different world now than we were five years ago when we first began talking about the algorithmic space, particularly in FX. The barriers to entry are now pretty severe. In terms of capital, especially in light of the credit crisis, I can't imagine someone trying to get into this business without being at a very well-established firm, with lots of capital and absolutely gold plated, triple-A credit. Also, at least in terms of FX, the market's a lot more efficient than even a couple of years ago and opportunities are more difficult to identify because they really do live at the margins. In general, I would say the key is in putting all the pieces together. As I mentioned earlier, the algorithm is just one small component of a successful algorithmic enterprise; it takes so much more than just having an idea. You really need a team of network engineers, a team of software developers, a team of people that cannot only come up with an idea for an algorithm, refine it in market conditions, and put it into production – you need tons of capital, and a commitment from the firm to back and support it and give it the resources it needs to be successful. It's a pretty tall order, especially in these uncertain times.

JR: How has the business of trading via algorithms changed over the past three years?

EL: The main way it has changed is that markets have become more efficient. Algo traders entered into a space that forced everyone else to get better at what they did – leading everyone to pay closer attention to network efficiencies, the execution

of their software and the logic of the algorithms.

JR: What do you see as the key driver behind continued FX industry growth?

EL: There are a lot of different aspects. The big marketplaces for trading haven't changed much; it's still EBS and Reuters, followed by Hotspot, Currenex, Lava and some smaller firms.

Because I work in these prop firms, I interact with people coming from the equities space. As they become familiar with the ECNs in FX, the more appalled they are at how antiquated the technology is, how poor the market data is and how limited the bandwidth is. If you're a market maker there are orders and orders of magnitude difference between what they're accustomed to and what they discover in FX.

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JR: What's the problem with FX?

EL: There is a level of complexity that stems from the bilateral credit relationships that exist between two counterparties in the FX market. There's no central clearing mechanism – which creates a lot of extra hops in the transaction that don't have to take place if you have central matching with a central clearer. The two main interbank FX systems haven't caught up to the exchange traded level of business processing that exists elsewhere. A lot of that is the credit model, but that's not all of it, a lot is the business infrastructure, the way it's wired. The EBS and Reuters model originates from the voice brokers and the inefficiencies of that model, which was efficient compared to the original way of transacting FX, when you rang someone up on the phone or got in touch via telex machine – I guess we've come a long way baby, but we've still got a long way to go.

JR: What improvements to your banking relationships have been most beneficial?

EL: That's a difficult question in light of existing conditions, but one of the big changes has been in the prime brokerage space, which has really improved a lot in terms of the efficiency with which they process transactions. In the beginning of the FX market, banks had two roles: to provide liquidity and to provide credit. As long as they did those two things competently, they had a chance to make a tremendous amount of money in FX and they did for a couple of decades. The interbank FX market has always been the focal point for liquidity. With the advent of the electronic space and access via prime brokers into the market of people outside the banks, the banks' role has been challenged. So I guess the big question is: what role do the banks want to take in the future with regards to the

FX market? I am not sure if they're going to return to the levels of risk that they used to tolerate.

JR: Could this be an opportunity for all those buy side types that say they want to make markets, to step up and create a self-sustaining secondary prime market?

EL: The buy side by definition has interest in the market. They're not equally a buyer and seller at any price at any given time in the market. That role used to belong to the banks and to some extent still does, but this is now conducted more by the proprietary trading companies mostly out here in Chicago. This really stems from the natural role of the Chicago exchanges and how they've come to be involved in the FX market. I've seen this both when I worked at banks and did arbitrage on the floor, but especially since I left the banking side, I've learned more about how the prop firms operate, how they lay off risk and manage it. Chicago is built on regular guys – locals – walking into a pit and when paper came in asking, "What's there?" the locals put their hands up and took down the trade. And they obviously had a plan; they didn't just take the trade and put it in their pocket. They figured it out; they learned how to trade relationships and they built a city on their ability to manage that risk. Right now, that is, for better or worse, what has been driving liquidity in the FX market for the last five or six years. I think the banks that are really successful now in FX are the ones that successfully researched that model and, where appropriate, adapted it to their model.

JR: What areas would you suggest that banks and trading platforms focus their R&D budgets on over the coming year?

EL: Banks would be well-advised to move away from the

“FX remains the most technologically challenged asset class in the market place and it should be the best.”

bilateral credit model in FX and lay that risk off onto some third party exchange traded platform – that is why I think the FXMarketSpace model was so good – but they just didn’t see it for what it was. Banks could improve the liquidity of their market so much if they just get out of this mode of checking the credit of everybody they trade with – it just kills response time and therefore liquidity. FX remains the most technologically challenged asset class in the market place and it should be the best.

JR: With all the talk of centralised clearing, do you see the future continuing to be dominated by fragmented liquidity pools or consolidating around a prime brokerage, or centrally cleared FX platform?

EL: So many of the participants on the sell side have a vested interest in making the market as opaque as possible – that’s always been the case in FX – “the market is where we tell you it is”. The dynamic is such that banks will always fight to preserve that. Nevertheless, the credit crisis that we’re experiencing now makes pretty clear that a centrally cleared exchange model is the sensible one for the FX market. I do think that ultimately that is where we’re going. But having said that, we now go back to the point I made earlier, that banks traditionally had a dual role in FX – one to provide liquidity and one to provide credit. If they are relieved of the credit role that means now all they have to do is provide liquidity. So banks would have to discover how they remain relevant in the FX market of the future if they are not the sole provider of liquidity and credit.

JR: Do you feel that if the problem of credit provision by central clearing is essentially solved, then banks become irrelevant?

EL: That’s what that leads to, that’s why banks have been fighting it. That’s why FXMarketSpace is not there. Banks were not supporting it, because the foundation of the FX market is the bilateral credit relationship that exists behind every transaction.

JR: But for the buy side firms, if the OTC exchange is what they were waiting for, why didn’t they make FXMarketSpace a success? Because they don’t think like the banks and all unilaterally jump in?

EL: I guess FXMarketSpace didn’t have enough functionality to create a parallel market for us, where we could get outright transactions for any value. Banks still facilitate customised transactions and after all, custom transactions are really the driving force behind having real liquidity in FX, because without natural interest there’s nothing, nobody knows where something should be priced, so in the ideal, centrally cleared,

electronic marketplace of the future that has yet to be created, I would see several components in addition to the ones FXMarketSpace had: one would be the ability to granularise the size of your transactions to more exactly meet your needs as a buy side participant (ie, someone with natural interest to buy or sell in the FX marketplace). Second would be the ability to put a value date and compete for the price of the trade on that value date more effectively and efficiently. Third would involve options.

JR: How do you see the role of the independent trading firms developing over the next three to five years? What innovations are we likely to see from this sector?

EL: It’s going to be a real challenge. We’re going to have to discover new relationships and relationships within relationships, not only ascertaining where the market is right now, but also where it’s going in the next few minutes.

JR: What is the biggest challenge you face over the next year?

EL: The same challenge I face every year, making budget.

JR: What keeps you up at night?

EL: Same answer, making budget.

JR: What is your view on what it will take to get the markets moving again?

EL: The performance of the economy, to me, is tangentially about things like fiscal and monetary policy, stock prices, forecasts, but primarily more than anything else, what drives the economy is confidence. We are a consumer driven economy. When people spend money the economy grows. When they stop, it contracts. So the thing that will turn around the economic contraction and the thing that always turns around economic contraction is the widely shared notion that things are going to get better. And I do believe that from that standpoint, this country elected the right guy to be president. I do think that Barack Obama will be able to instill people with a sense of hope, optimism and confidence that things will get better. The man’s sheer, steady sense of purpose and calmness is going to be the thing that pulls our bacon out of the fire.

Erik Lehtis began his career as a foreign exchange trader in 1984 at Crocker Bank in San Francisco, and has since worked at a variety of banks and proprietary trading firms on both coasts and in Chicago, making markets in FX and interest rate cash products, futures and options. His last stint in banking culminated with nine years spent at Harris Bank (now Bank of Montreal), which he left in 2001. Lehtis joined DRW as a fixed income futures and options trader in 2002, and then joined Allston Trading as a fixed income and FX algo trader in 2004. Lehtis moved to Wolverine Trading in January 2008 to launch its foreign exchange arbitrage program.