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Hiring the Next Generation of Quants

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As quantitative trading strategies continue to dominate the financial markets, in addition to hiring for trading positions, Wall Street firms find themselves in need of new skill sets. As a result, investment banks and hedge funds are experimenting with different tactics to secure the next generation of talent. Though all Wall Street firms recruit on the leading university campuses, the high demand for quantitative skill sets is pushing more and more firms to search for students in creative ways.

While some industry sources say quantitative skills always have been in short supply, others believe the market of available talent will rise to meet the demand. But everyone agrees that over the past five years, with the shift toward complex derivatives models, the criteria for hiring fresh talent have changed.

"There is definitely a demand for a new type of employee in commodities trading and futures trading - it's a numerical-based type of employee," says Thomas Plaut, managing director of FX Solutions, a Ridgefield, N.J.-based futures broker that offers a global retail foreign exchange (FX) trading platform. In Plaut's view, there's a structural shift occurring in financial markets toward quantitative trading, and current Wall Street employees may not be able to adapt.

"No matter how hard the people are trying to retrain themselves that work in capital markets, they just don't have the time and talents to go back to Harvard and get a Ph.D. in astrophysics," Plaut asserts. "Generally, the new people are coming from the hard sciences - physics and mathematics and computer science."

Engineering Success

While firms have leaned heavily on wooing talent from academic institutions over the past 10 years, many are shifting their strategies. "As a general rule, [Wall Street firms] go to academia, almost always an Ivy League school with a Ph.D. in finance" to find talent, says one industry veteran who has served as a senior technology executive at several leading hedge funds. But finance majors don't always provide the answers. For example, firms may want to hire a petroleum engineer - a true engineer - for energy trading, notes the source, who requested anonymity.

Christiane Mandell, global head of foreign exchange for Bank of America, says financial institutions are seeking graduates from the nation's 10 or 12 financial engineering programs, rather than tapping MBA/finance majors. She relates that over the last few years, BofA has been hiring more people with

math and physics backgrounds than it had in the past.

"An MBA does not cut it because operating in today's markets requires more quantitative skills than a typical MBA can offer," contends Linda Kreitzman, director of the Masters in Financial Engineering (MFE) program at the Haas School of Business at the University of California at Berkeley. "Trading is getting more complex, especially in structured products," she adds, citing as examples fixed income, mortgage-backed securities and asset-backed securities, as well as credit and equity derivatives and volatility trading.

Launched in 2001 with seed money raised from, among others, Goldman Sachs and Morgan Stanley, the one-year MFE program admits 60 students per year, according to Kreitzman, who notes that the university built a wireless lab with Bloomberg and Reuters machines, "where students can do their exercises and their homework." "The program's typical student has an advanced degree in a quantitative field and 5 years work experience," Kreitzman relates.

Last fall, half of the program's students completed three-month internships on Wall Street, while others were placed in London, Tokyo and the Netherlands. "MFEs are better prepared than MBAs for trading and desk quant positions because of the depth offered by our rigorous curriculum," Kreitzman continues. "The ideal financial engineer needs to have very good programming [such as C++, Matlab or VB], a strong knowledge of mathematics for pricing models, and also a strong knowledge of economic concepts and finance," she asserts.

This year, Lehman Brothers made offers to eight MFE graduates for full-time positions in whole loan trading, prime brokerage and the quantitative research department within global client services as well as in quantitative credit strategy. "Clearly, the MFE programs are a result of the demand for quants," says Kreitzman, who predicts there will be more demand for financial engineering in the future.

To keep up with the latest trends - such as banks hiring energy traders to trade commodities - the MFE program may offer a certificate (or concentration) in energy trading through its Center for Executive Education, notes Kreitzman. This could be offered to professionals who already are working but want to specialize, as well as to alumni and current students, she conveys.

May the Best Trader Win

To entice those students, on Jan. 23, Interactive Brokers (IB) Group launched the first IB Collegiate Trading Olympiad, a contest that will give away \$400,000 in prizes to college students who use a live simulator to develop trading models that generate the highest profits. "We're running this competition because we're having trouble getting better people - computer scientists that are interested in coming into the trading industry," says Steve Sanders, managing director for business development at Interactive Brokers Group in Stamford, Conn., which owns Timber Hill, the market maker; and Interactive Brokers, a provider of global electronic broker-dealer services.

The 10-week contest is open to any graduate student with an undergraduate degree in computer science or engineering, as well as undergraduate seniors and graduate students working toward degrees in those majors. "We're not looking for lucky students - we're looking for students who can put together a trading plan," says Sanders.

IB is offering the students access to the same IB Trader Workstation application program interface (API) that professional traders use to create automated trading programs. "We offer the same system to our customers," notes Sanders. "Students can come in and put together trading models and test them out

without eating into their money, and then actually put their algorithms into production," he adds.

In search of quantitative talent, firms are trying other tactics as well. Even secretive hedge funds have taken the conventional route of running ads in the newspaper. In 2004, Chicago-based Citadel Investments, a leading alternative investment firm, took out full-page ads in the Sunday Business Section of The New York Times, inviting the best and brightest to come work with the top minds in Chicago, recalls the senior technology executive who requested anonymity. Another popular tactic, according to the source, is to hire talent away from competitors. "Poaching does two things - it brings the top talent to you, and it also hurts another firm," he says.

If You Can't Hire 'Em, Buy 'Em

But perhaps the most aggressive answer to the hiring dilemma is to just acquire a trading firm. On Jan. 30, Bank of America announced it had acquired Financial Labs, a Cambridge, Mass.-based proprietary-trading firm, to build out BofA's FX platform. Financial Labs was formed in 2003 by a team of physicists and astrophysicists from Harvard University. They have experience in FX trading, systematic risk management and developing algorithms.

The Financial Labs' team "had developed a particular expertise in studying market behavior and modeling, and working hard on connectivity," says BofA's Mandell. "We see the applications for that are in frequency trading, automatic risk management and in studying how to create efficient pricing in a number of different products, like options and some of the exotic currencies."

"Right now, the easiest way to get talent is to buy it, and if you can buy it in a packaged instance like Financial Labs, you get instant success. You just plug them into your network," says Plaut, whose firm, FX Solutions, co-founded Financial Labs. "They can now overlay their strategies onto multiple asset classes, and they'll benefit from Bank of America in terms of scale, brokerage costs and flow," he adds. "I think they're going to propel Bank of America to the top of the market very quickly in forex."

Developments such as streaming executable prices and providing customers with direct access to these prices through portals in combination with prime brokers, have fundamentally changed the nature of trading in FX, BofA's Mandell stresses. "It's a market where the ability to automatically risk manage the flows from customers becomes increasingly important. Your ability to do that well is really driven by your modeling capability," she says. "And you need really smart people to compose and execute those models." Mandell notes that because electronic trading in foreign exchange is a phenomenon less than three years old, it's more typical to hire people with experience in modeling in another asset class or who have been trading in the FX markets. The combination of the two skills is relatively uncommon, she says.

Yet, Mandell points out that Bank of America still recruits from a lot of different schools. The bank has 350 people in the FX front office where there are sales, trading and research analysts, so it recruits for a variety of skill sets, she adds.

Meanwhile, IB is counting on its Trading Olympiad to discover some promising new talent. "We think this kind of proves that somebody is a self-starter and can get out there and do all the work," says Sanders. "It doesn't mean we hire them into trading positions - it could be clearing or any of our trading technology positions," he says.



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