WSJ.com THE WALL STREET JOURNAL. ONLINE

September 7, 2007

PAGE ONE


Peter Muller

AUGUST AMBUSH

How Market Turmoil Waylaid the 'Quants'

Morgan Stanley Star Is Among Those Battered; No Time for Music Now

By SCOTT PATTERSON and ANITA RAGHAVAN
September 7, 2007; Page A1

Peter Muller, a 43-year-old trader at **Morgan Stanley**, is used to markets behaving more or less as he expects. But in late July, some unusual patterns perplexed him. Certain investing strategies that historically had posted steady gains started faltering for no evident reason.

Soon, the unusual trading spread from U.S. to Japanese and European markets as well. Mr. Muller picked up rumors that one or more unknown investors were buying and selling giant positions similar to the ones he held, according to someone familiar with the matter. The next two weeks proved one of the biggest convulsions ever faced by a breed of market players that includes Mr. Muller: quantitative investors, known as "quants."

These traders use complex mathematical models to invest in markets around the globe. Their computers track a wide range of data and variables, such as how cyclical stocks do when a particular currency rises or falls. Formulas programmed into their computers spit out prices at which stocks or other instruments are to be bought and sold. In fact, the computers themselves often do the trading.

Quant strategies have been around for decades, but in recent years they have really come into their own, thanks in part to technology that has lowered the costs of their trading-intensive methods. Whereas investors like Warren Buffett and Peter Lynch defined an era of common-sense "value" investing in the 1980s -- and swashbuckling hedge funds betting on everything from metals to the British pound typified the 1990s -- quants have scaled the heights of the investing world in the past decade.

Quants' avoidance of the limelight has only amplified the aura of stars like James Simons of Renaissance Technologies Corp. and David Shaw of D.E. Shaw Group. Large investors such as pension funds seek the steady returns these funds have produced. Assets in just two common types of quant funds -- known as "statistical arbitrage" and "market neutral" funds -- have risen nearly 60% in two years, to $96 billion as of June 30, according to research group Hedgefund.net. The rise reflects both investment gains and new money.

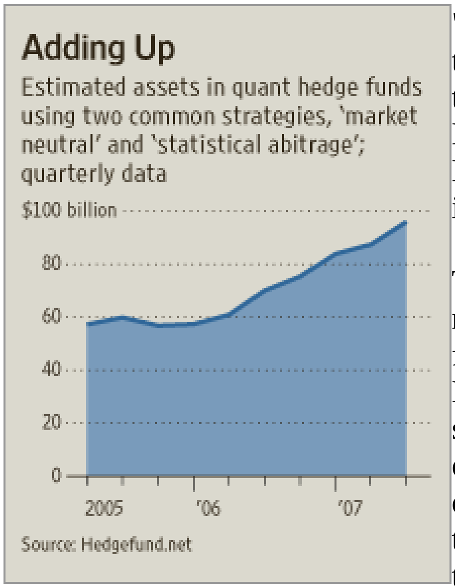
Against this backdrop, quant funds' turmoil in late July and early August was all the more disconcerting. The broader U.S. stock market fell about 4% in that stretch. But Renaissance Institutional Equities slid 8.7%. Another big quant fund, AQR Capital Management, lost 13%. A Goldman Sachs Group Inc. quant fund called Global Equity Opportunities fell about 30%. Tykhe Capital LLC saw losses of roughly 20%. And Mr. Muller suffered along with them.

KEEPING COUNT

- **The Landscape:** Quantitative trading driven by computers has become highly popular for its reliable returns.
- **Market Jolt:** In late July and early August, 'quant' portfolios, including one that manages some of Morgan Stanley's money, took heavy losses.
- **Situation Now:** The drop exposed problems quant traders are still reckoning with. They say the fall will be forgotten as their strategies continue to churn out steady profits.

Though few on Wall Street know about it, his group at Morgan Stanley has been among the investment bank's most profitable operations in recent years. Known as PDT, for Process Driven Trading, it produced profits of roughly $3.5 billion in the 10 years through 2006, people familiar with it say. They add that PDT, which now contains about $6 billion of Morgan Stanley's money, accounted for 7.2% of the bank's net income last year by producing $540 million in profits.

But between the last week of July and Aug. 9, PDT lost approximately $500 million, according to traders. Neither Morgan Stanley nor Mr. Muller would comment on the losses or on PDT's trading strategy. Morgan Stanley said it is fully committed to the quantitative trading business.



"It's a very humbling event for [quants] to take these kinds of losses. These guys think of themselves as masters of the universe," said Lee Maclin, manager of Pragma Financial Systems, a New York "fund of funds," or hedge fund that invests in other hedge funds.

The quants' summer woes remind some of the near-meltdown almost a decade ago of high-flying hedge fund Long-Term Capital Management. Like quant funds, LTCM was steered by brainy academics who made money exploiting out-of-kilter relationships between different securities. Unlike LTCM, though, today's quant funds are far less leveraged and thus unlikely to sustain huge losses as LTCM did.

Quants say their bad patch will be forgotten as their strategies continue to churn out steady profits. Most of the funds, including Mr. Muller's, have recouped some of the losses. By the end of August, AQR had bounced back by roughly 10% from its lows, and the Goldman fund by 12%, according to people familiar with these funds.

Even so, the outsize drops could dim the luster of the quant approach -- especially since quants themselves still don't know for certain what triggered the carnage. A common theory is that one or more large funds was forced, possibly because of losses on subprime mortgages in other parts of its business, to rapidly dump stock to raise cash, and this set off a ripple effect among quant traders. Others say that stocks that were expected to fall began rising when traders who had borrowed shares and sold them were forced to start buying shares back. Meanwhile, the proliferation of quant funds holding a lot of the same positions may have been a recipe for magnifying the losses.

Mathematical, computer-driven trading was an arcane corner of the financial industry when Mr. Muller joined Morgan Stanley in 1992. He had been exposed to it, however, for several years at Barra Inc., a risk-analysis firm in Berkeley, Calif.

A 1985 math graduate of Princeton, Mr. Muller impressed some investment elders early on. Jeremy Grantham, chairman of the big money-management firm GMO LLC, recalls seeing a youthful Mr. Muller as a panelist at a conference 20 years ago. "I caught both super-quants [on the panel] in a logical fallacy," Mr. Grantham says. "The first one kind of choked on it, but Peter danced around the minefield like a tap dancer. I thought, 'That guy can really think on his feet.' "

Restless after Barra went public in the early 1990s, Mr. Muller interviewed for a job at Morgan Stanley. He told executives there that he didn't really think any amount of money could get him to leave his laid-back California life for Wall Street. But he accepted when the bank offered to let him set up a group that would invest some of its own money using a quantitative strategy.

Morgan Stanley -- which eventually bought Barra -- wasn't new to such techniques. Years earlier, it had employed Nunzio Tartaglia, a onetime astrophysicist and Jesuit seminarian who was an early practitioner of a particular quant strategy. And one of Mr. Tartaglia's underlings in the 1980s was Mr. Shaw, now the proprietor of one of the largest quant funds, D.E. Shaw.

The strategy Mr. Tartaglia used gives an idea of how quants operate. Called "pairs trading," it involves betting on two stocks that have a strong historical relationship.

Suppose that General Motors and Ford Motor stocks usually move more or less together. If they aren't doing so at a particular time, and there is no clear reason why, there's a good chance the past relationship will reassert itself. So if Ford has risen while GM languished, a quant might buy GM shares and sell Ford short, betting on it to decline. The "pairs trade" will pay off if the historic correlation returns.

Quants play the game on a massive scale -- betting on many different securities and using borrowed money to magnify the effect of any market anomalies detected by their computers. So although they expect to lose on many trades, the gains tend to outweigh the losses, thanks to their formulas and computing power. Ideas like pairs trading have blossomed into others such as "statistical arbitrage," a more complex version that is one of Mr. Muller's specialties at PDT.

By the late 1990s, PDT group had become so successful it commanded the biggest chunk of Morgan Stanley's stock trading for its own account. Mr. Muller let members of the group dress down when their returns were up -- and forced them to dress up when their returns were down -- so everyone else at the firm knew how they were doing.

But according to a short biography on Mr. Muller's Web site, he "woke up 6 years ago and realized that he can no longer find happiness in the corporate world." He had already taken a one-year 1999 sabbatical. In 2001, he left full-time work again, though he remained an adviser. Friends say Mr. Muller felt he had already accomplished more than he expected, and the intense money focus and social-climbing side of New York left him wishing for a more balanced life. He also had broken up with a longtime girlfriend.

So over the next several years, Mr. Muller traveled to Bhutan, New Zealand and Hawaii, and kayaked in the Grand Canyon. He spent time in California and took up yoga. He began writing crossword puzzles, several of which appeared in the New York Times.

He also became more serious about his music. He had taken up the piano as a child and joined a jazz band in California. In 2002 and 2004 he recorded albums on his own label, Dog and Hammock Productions. During his time away from Morgan Stanley early this decade, he could be seen playing on the streets of Barcelona, Spain, and in New York City subways.

Mr. Maclin of Pragma Financial recalls seeing Mr. Muller playing on a subway platform: "People were dropping change in his [keyboard case] not realizing the guy is worth millions."

Late last year, Mr. Muller returned to Morgan Stanley full time, encouraged by Chief Executive John Mack's push toward more aggressive risk-taking at the investment bank. The trader also felt that in what was becoming an increasingly competitive quant field, PDT could benefit from more hands-on guidance.

Though secretive about their formulas, quants like him are often seen together at social gatherings. Poker is a favorite pastime. Mr. Muller is the ace of the group. While away from Morgan Stanley, he briefly joined the World Poker Tour and pocketed nearly $100,000 in a tournament in 2004.

In March 2006, at a charity event called Math for America held at New York's St. Regis Hotel, several quants squared off in "Wall Street Poker" night. Looking on, according to people who were there, was a murderers' row of hedge-fund managers: Citadel Investment Group's Kenneth Griffin, Renaissance Capital's Mr. Simons and David Einhorn of Greenlight Capital Inc. In the final round, Clifford Asness, who runs AQR Capital, faced off against Mr. Muller, who took the title with a pair of kings to his foe's ace and 10.

This summer was less fun. Mr. Muller had retaken the helm of PDT just in time for the biggest test of his career, as the subprime-mortgage meltdown broadened into a more-general credit squeeze. Among the unusual results was that stocks many investors considered low-quality -- and had bet against -- began to outperform the market, says Diane Garnick, investment strategist at Invesco PLC. She attributes much of this to "short covering": Investors who had borrowed shares and sold them had to buy them back when their brokers reined in their credit lines. In contrast to the "flight to quality" often seen during a crunch, she says, the anomalous result was a "flight to non-quality."

The phenomenon may have been magnified by the similarity of quants' portfolios. Their world is one of shared theories. "Everybody has read the same academic literature and knows what's in the air," says Richard Bookstaber, a portfolio manager at FrontPoint Partners. Mr. Asness, in a letter to his investors at AQR, wrote that the early-August jolt "is about a strategy getting too crowded."

Mr. Muller has been playing detective to avoid repeating past mistakes, peppering friends with questions about the performance of his peers, asking pointedly which funds got in trouble and which did better, says a person familiar with the situation. He has talked several times with Mr. Asness.

Though computers execute quant trades, real people are constantly at the switch during the trading day, monitoring portfolios to make sure the programs are operating according to plan. If a computer accumulates too much of a single stock, a trader may intervene. And quants are always tweaking their models. Mr. Muller has told friends that the August swoon presents opportunities for experienced managers like him.

Then there's his music. Songs on his first two albums reflected what was going on his life, including one song with the lyrics "I almost made my escape, I almost got away.... So hard to quit when you're good at the game."

But Mr. Muller's Wall Street career is getting in the way again. Since returning to PDT, he hasn't written a new song all year. As he recently wrote on his Web site, "one of my other passions, mathematical finance, has taken a lot of my time this year."

Write to Scott Patterson at scott.patterson@wsj.com[1] and Anita Raghavan at anita.raghavan@wsj.com[2]

URL for this article:
http://online.wsj.com/article/SB118912592144720147.html

Hyperlinks in this Article:
(1) mailto:scott.patterson@wsj.com
(2) mailto:anita.raghavan@wsj.com

RELATED ARTICLES AND BLOGS

Related Articles from the Online Journal

- How the 'Quant' Playbook Failed
- When I Said, 'Eat My Shorts,' It Wasn't Meant Literally
- Reading: Tightening the Screws on Mortgages
- Hedge Summer: Who Built Their Dollars

Blog Posts About This Topic

- Investing: When Risk Is Home-Grown, Is It Time to Look Abroad? powernewsonline.com
- Fidelity in flux - Pensions & Investments pionline.com

More related content *Powered by Sphere*