

**Newsweek**

## Fast, Loose, and Out of Control

*Trading billions of shares in the blink of an eye has made stock markets more responsive—and volatile—than ever.*

by [Matthew Philips \(/authors/matthew-philips.html\)](#) June 01, 2010



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On April 26, the Dow Jones industrial average stood at 11,205, up nearly 70 percent since its low in March 2009. While there were bumps along the way, the ride from 6,500 to 11,205 was generally smooth and steady. But the placid markets were about to get hit by a tsunami. When it became evident that Greece's financial woes might spark a Europe-wide sovereign-debt crisis, the waters began to churn. The Dow lost 214 points on April 27 and posted triple-digit moves on 13 of the next 17 trading days. Worst was the "Flash Crash" of May 6, when the Dow lost 998 points in a matter of minutes, only to rally more than 600 before closing down nearly 350 points.

Suppressed for much of the recovery that began in the spring of 2009, market volatility has come roaring back. On May 21 the VIX, which measures the volatility of the S&P 500, and is also known as the "fear index," spiked 25 percent. Who is to blame? Many analysts have fingered high-frequency traders, computer jockeys who plug complex trading algorithms into superfast computers and scour the markets for tiny price differentials. By trading vast amounts of stock at warp speed, as many as a billion shares a day, high-frequency traders gobble up fractions of cents at a time. The more volatile the market, the easier it is for them to make money jumping in and out of stocks across exchanges.

Markets become volatile when liquidity dries up—in other words, when people can't trade stocks when they want, at a fair price. "High-frequency traders thrive off volatility, because when liquidity is in short supply, it becomes very profitable to provide it," says Manoj Narang, founder and CEO of Tradeworx, a hedge fund and high-frequency trading firm in Red Bank, N.J., that trades an average of about 80 million shares a day. "On days with big movements, in the realm of triple digits, we make a lot of money."

High-frequency traders, who on the whole have maintained a low profile, say that because their frenzied trading provides liquidity, they help markets run smoother, improving the environment for

all investors. But combine the speed at which they operate, the outsourcing of decision making to computer codes, and an almost complete lack of regulation, and this shadow market can fuel and exaggerate volatility. Speed traders argue they actually tamp it down. Nonetheless, politicians and regulators are starting to get nervous. "I'm afraid that we're sowing the seeds of the next financial crash," says Sen. Ted Kaufman (D-Dela.), arguably D.C.'s most vociferous critic of high-frequency trading, or HFT.

Within weeks of taking over Joe Biden's seat in early 2009, Kaufman, a Wharton M.B.A. and longtime aide to Biden, was pushing for stringent financial reforms. Last August he focused on HFT, urging the Securities and Exchange Commission to take a "ground up" review of the entire electronic-market structure. "We're dealing with something highly complex and completely unregulated," he told NEWSWEEK in March. "The last time we had that mix, with the practitioners telling us, 'Don't worry about it,' things didn't end well. The time for 'trust us' went out the window a long time ago."

High-frequency traders may have become the new villains of finance. But their computer-driven methods, which now account for upwards of 70 percent of all U.S. equity volume, aren't going away. To a large degree, fundamental investment strategies—i.e., buying and selling stocks based on a company's performance—have taken a back seat to algorithms hunting for inefficiencies. And the practice is beginning to spread from the U.S. stock market into new areas (Europe, Canada, Brazil, India) and asset classes (bonds, futures, currencies). Assuming the financial-regulatory-reform bill forces derivatives onto exchanges, high-frequency traders will no doubt trade them too. And every day, things are getting faster. Four years ago, executing a trade in a millisecond (one thousandth of a second) was considered fast; now the top firms are trading in microseconds. That's one millionth of a second.

The last few weeks have been the biggest bonanza for HFT firms since the crash of late 2008 and early 2009, when the Dow bucked and thrashed its way down to its 6,500 low on March 9, 2009. While most long-term investors lost their shirts during the Great Panic of 2008, high-frequency traders posted huge profits. "That was the Golden Goose era," says Narang, whose HFT shop launched in March 2009 and just finished its most profitable month.



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HFT firms haven't exactly helped their public image. Paranoid and reclusive, they've cloaked themselves in secrecy in the name of protecting their black boxes—those trading codes they spend so much time perfecting. They almost never talk to the press and disclose as little as possible about how they operate. No wonder they've joined short sellers and vulture investors in the

pantheon of perceived market malefactors. “As a group, we’ve fallen into a trap by erring on the side of secrecy,” Narang says. Concerned by all the bad press surrounding his speed-trading brethren, Narang has become the public face of the industry—appearing on CNBC and PBS, and letting reporters tour his offices (nothing but 20-something physics Ph.D.s in jeans staring at computer screens). “The public is skeptical as it is,” Narang says. “Secrecy is equated with doing something bad.”

Most people had never heard of high-frequency trading until last summer, when the FBI arrested Sergey Aleynikov, a Russian-born Goldman Sachs computer programmer. Agents nabbed him as he got off a plane at Newark airport and charged him with attempting to steal the bank’s algorithmic trading code. A flurry of press coverage followed—profiles of Aleynikov, front-page stories about how some of the new electronic exchanges that have sprung up in recent years were allowing speed traders to peek at other people’s orders before executing their own. The finance blogosphere turned Aleynikov into a sort of cult hero, a cyber-era Robin Hood stealing from the most notorious bank in the world.

The incident sparked an immediate backlash against HFT. The SEC launched an investigation. So did its British equivalent, the Financial Services Authority. New York Sen. Chuck Schumer threatened legislation in the absence of regulation. Two Democratic members of the House, Ed Perlmutter of Colorado and Peter DeFazio of Oregon, proposed a quarter of a percent transaction tax on all stock trades. The bill went nowhere. *New York Times* columnist Paul Krugman likened the practice to a form of tax on second-class investors who lack rocket-ship computers.

In their defense, speed traders say their actions make the markets more functional and fair to typical investors. To fully understand this, you have to go back a decade, to the birth of HFT in September 2000. That month, then-SEC chairman Arthur Levitt, eager to push the market into the digital age, ordered exchanges to implement “decimalization”—i.e., allowing stocks and options to be listed in one-cent increments rather than 12.5-cent ones. Before decimalization, if you wanted to buy a share of IBM between \$117 and \$118, you had only eight options: \$117?, \$117¼, \$117½, etc. It’s the job of an exchange to match a buy order with a sell order. The price difference between the two is called the spread. Before decimalization, the tightest spread was often still 12.5 cents. Today, it’s rarely more than a penny.

Tighter spreads were good news for your average man-on-the-street investor, but spelled serious trouble for market makers, the individuals and firms that facilitate trading by quoting both a bid and a sell price, and who pocket the spread as their profit. Prior to decimalization, this was relatively easy. Twelve and a half cents is a veritable football field in which to find a profit. But the combination of decimalization and the advent of new electronic exchanges where buyers and sellers could meet one another directly made life difficult for market makers. Some traditional Wall Street firms folded their market-making desks, while the survivors doubled down on technology and speed.

As a result, trade volume exploded. The average daily volume of equity shares traded in the U.S. zoomed from about 970 million shares in 1999 to 4.1 billion in 2005 to 9.8 billion last year. Simply put, these volumes make U.S. equity markets the most liquid in the world. Investors can buy or sell stocks instantly, and at a fair price, thanks largely to HFT. This was never more evident, and crucial, than during the market plunge of 2008 and 2009. As long-term investors rushed to sell millions of shares, high-frequency firms were there to buy them, risking their own capital and earning a tiny profit along the way, literally fractions of a cent per share.

The problem is that, unlike the market makers at the New York Stock Exchange, most high-frequency traders have no obligation to help maintain an orderly market. And during the Flash Crash, many speed traders simply turned off their machines, including Narang. Rather than wading into the frenzy, and possibly propagating the crazy price declines to other stocks, he turned off his codes and traded out of his positions. “We realized that the prices we were seeing were erroneous, and we did not want to have our trades broken,” he says. (Exchanges ended up breaking some 19,000 trades.)

With fewer people willing to buy all those sell orders, prices crashed. When the NYSE shut down its computer-trading operation for about a minute, handing things over to human traders on its floor—a vestige of the old system—order flow was forced onto less-populated electronic exchanges.

The sell-off gained speed as stop-loss orders were triggered once prices fell a certain amount, and many large institutional investors dumped stocks by the truckload. As liquidity dried up, volatility went through the roof. Speed traders that stayed in the game had record paydays. "We would've made a killing if we'd kept trading," Narang says.

It is precisely this ability to profit amid widespread carnage that has aroused the attention of regulators. Many have come to see high-frequency traders as nothing but digital piranhas, creating feeding frenzies that send the market into violent swings for their own profit. Still, the first wave of regulation to come after the Flash Crash hasn't been aimed at speed traders but at the exchanges, which 10 years after going electronic are still largely a patchwork of cobbled-together systems. So far, high-frequency traders have emerged unscathed. Experts like Ben Van Vliet, a professor at Illinois Institute of Technology, believe big computer traders like GETCO and TradeBot will one day become something akin to electric utilities: entrenched, highly technological industry players with virtual monopolies on the market.

Like utilities, though, HFT may soon be regulated. As this prospect increases, speed traders are taking a page from the more established players on Wall Street. In March, Narang began meeting with SEC commissioners to try to "enlighten" them about HFT. "I am more optimistic that regulators will not do irrational things than I was a couple months ago," he says. The real worry is whether markets, and the machines that increasingly drive them, will do irrational things.