Artificially Intelligent Investors Rack Up Massive Returns in Stock Market Study

An international team of researchers showed that artificial intelligence can make a killing on the stock market — and some real-world hedge funds are already trying it.

BY **GREG WALTERS** PUBLISHED IN **WWW.SEEKER.COM** ON 03/17/2017 4:39 PM

Scoring above-average returns on the stock market is notoriously hard — so hard, in fact, studies show even the most talented investors on Wall Street can't do it reliably. But their problem might be that they're just human.

An international team of researchers just devised a group of AI algorithms that achieved eye-popping returns in tests using past market data to replicate real-time investing. The AI stock pickers didn't just beat the market. They annihilated it.

One model devised by the researchers returned 73 percent annually from 1992 to 2015 after accounting for transaction costs. That's compared to a real market return of 9 percent annually. Gains were particularly rich during times of high market turmoil — moments when human investors are often overcome by greed or fear and make emotional decisions.

For example, in 2008, when the global financial meltdown cost many investors their shirts, one of the researchers' AI systems notched a breathtaking 681 percent return in the study. In 2000, when the tech bubble burst, that AI method returned 545 percent.

"Our quantitative algorithms turned out to be particularly effective at such times of high volatility, when emotions dominate the markets," said the lead author of the study, Dr. Christopher Krauss, chair for Statistics and Econometrics at the School of Business and Economics at Germany's Friedrich-Alexander-Universität Erlangen-Nürnberg.

In recent years computers have bested humans in fields once held to be unimaginable — such as when chess-playing Deep Blue beat grandmaster Garry Kasparov in 1997, or when a computer womped legendary Go player Lee Sedol in 2016.

The results of Krauss' study suggest artificial intelligence might one day dominate the world of financial strategy-making, too — a state of affairs that would have hard-to-predict ramifications.

To be sure, much of the world's equity trading is already handled by computers executing decisions based on algorithms, even though other areas, like bond markets, have been slower to cede territory to automation. Many hedge funds rely on "quants," human mathematicians and

scientists, to run programs that churn through mountains of data to make complex market forecasts.

Proponents of unleashing advanced artificial intelligence onto financial markets argue that it represents a new level of sophistication and flexibility, along with unprecedented firepower.

State-of-the-art AI allows powerful computers to actively learn from the past and adjust their trading strategies instead of following rote, relatively simple trading algorithms.

Some investors are already turning AI loose on real-world markets.

Aidyia Limited, an asset manager based in Hong Kong, has rolled out an advanced artificial intelligence-based hedge fund that can read news in multiple languages, analyze reams of economic data, identify obscure patterns, make predictions about market trends, and then invest accordingly.
The system's designers claim it can operate with complete autonomy from human input.

"If we all die," Aidyia's chief scientist, Dr. Ben Goertzel, quipped to Wired magazine in 2016, "it would keep trading."

Other companies bringing artificial intelligence to bear on financial markets include Sentient Technologies in San Francisco, and Rebellion Research in New York.

Unlike Dr. Krauss' public study, however, much of what is being developed and tested by real-world markets remains wrapped under a veil of corporate secrecy for fear of letting competitors seek advantage.

In other words, investors who might now be making a killing in financial markets using artificial intelligence may not want the world to know too much about it, because the more widely a technology is dispersed, the less advantage it brings to those who have it.

That effect appeared to show up in Dr. Krauss' study. Returns of the researchers' AI investment methods declined after the year 2001 as computer-based trading became more widespread, suggesting less room to exploit market inefficiencies.

"'In the latter years of the study, profitability fell and even dipped into the negative at times," Krauss said. "We assume that this decline was driven by the rising influence of artificial intelligence in modern trading."