Maria Pischenko
Science tutor L.N. Kleiner
BSEU (Minsk)

IMPACT OF ARTIFICIAL INTELLIGENCE ON TRADING AND INVESTING

Artificial Intelligence (AI) allows replacing human beings with machines. In the 1980s, AI research primarily focused on expert systems and fuzzy logic. With computational power becoming cheaper, using machines to solve large-scale optimization problems became economically reasonable. In many ways, Artificial Intelligence and Finance are perfectly complement each other. Machine learning and other techniques make it easier to identify patterns that might otherwise not be defined and seen by the human eye, and finance is quantitative to begin with, that is why it’s hard not to find traction. As a result of the advances in hardware and software, nowadays AI focuses on the use of neural networks and other learning methods for analyzing and identifying predictors, also known as features, or factors, that have economic value and can be used with classifiers to develop profitable models. This particular application of AI often goes by the name Machine Learning (ML). Financial firms have also invested heavily in AI in the past, and more are starting to tap into the financial applications of ML and deep learning.

The application of methods for developing trading strategies based on AI, both in short-term frames and for longer-term investing, is gaining popularity and there are some hedge funds which are really active in this field and generate superior returns for their investors. Take as an example the hedge fund Renaissance Technologies that is said to have “the best physics and mathematics department in the world“. The Medallion Fund at Renaissance, run mostly for employees of the company, has one of the best records in investing history having returned +35% annualized over 20 years. Other people definitely can use AI for stock trading and they have used it to modify one of the best returns in the history of investing.

At least 6 companies are using artificial intelligence for generating alpha through algorithmic stock trading. Trading is one of the top 10 places that AI can make a difference. A trading algorithm can analyze the data, make a decision, act and repeat—you can have full autonomy.

However, broad acceptance of this new technology is slow due to different factors, the most important being that AI requires investment in new tools and human talent. The majority of funds use fundamental analysis because this is what managers learn during their MBA programs. But there are still some hedge funds that rely solely on AI. One of these companies, Sentient Technologies, can simulate 1,800 trading days in just a few minutes and is pitting trillions of virtual traders against each other in a giant game of evolution. It’s run by Babak Hodja, who helped to lay the groundwork for Apple's Siri. However, he doesn’t say anything about the returns he’s generating. While Sentient is being secretive, firms like Numerai are paying data scientists in bitcoin for their contributions to an AI hedge fund, which has now crowdsourced billions of equity price predictions.

Note that Artificial Intelligence is not only used to develop trading strategies but also in other spheres, for example in developing liquidity searching algorithms and suggesting portfolios to clients. Therefore, with AI applications gaining ground, the number of humans involved in trading and investment decisions decreases and this definitely affects markets and price action. It is early to speculate on the overall effects this new technology will have on the industry but it is possible that extensive use of AI will result in more efficient markets with lower volatility for extended periods of time followed by occasional volatility spikes due to regime changes. This is possible because the impact of subjective evaluation of information by humans will be minimized and with that the associated noise. But that remains to be seen in practice.

Alesya Pochuyko, Violetta Ponomarenko
Science tutor E. U. Makutonina
BSUT (Homel)

THE IMPACT OF TERRORISM ON ECONOMY

The terrorist threat is now considered to be an everyday hazard. The risk of death caused by terrorists has become an integral component. Such a phenomenon was never as acute as now when it reached an extremely high level of risk in recent years. The practice of terror from year to year is becoming more sophisticated and cynical. In the last century, the main forms of attacks were hostage taking and explosion in a public place. These forms of terrorism are considered classic nowadays. They give way to destruction of residential and office buildings and neighborhoods, chemical and biological attacks, cyber attacks and so on. Therefore, the objective of the study - to reveal a correlation between acts of terrorism and consequences for the economy, and to find the causes of terrorism and ways to fight against it.

According to the Global Terrorism Database a terrorism is: « the calculated use of violence (or threat of violence) against civilians in order to attain goals that are political or religious or ideological in nature through intimidation or coercion or instilling fear » [1].

Let’s consider the causes of terrorism. Social and political injustice: Terrorism is directly proportional to injustice. When the grievances of the people are not redressed they resort to violent actions. Hence, the delayed justice is working as an incentive for victims and dragging them to the swamp of terrorist organizations.

Religious: Religious terrorists may use terrorism to punish what they see as ‘ungodly’ behaviour in society, or to avenge what they perceive as attacks on their beliefs. As a driving force of terrorism, the true danger that religious doctrine poses is its encouragement of attacks that are more violent in nature than other types of terrorism.