

Investment robots in the securities market

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Disruptive technologies have had an impact on a wide range of social and economic sectors and activities and the securities market is no different. Automation in stock trading is nothing new – the days of traders shouting buy and sell orders on the floor of the exchange are long gone. Now, however, there is a new alternative in the securities market: investment robots.

Despite this popular label, investment robots are actually an artificial intelligence-based service offered to investors by financial institutions. Essentially, they are automated systems that use algorithms to make investment decisions based on a variety of information. Investor profiles, asset information, news reports that influence quoted prices and trading history (machine learning) can all go into the mix of data used by robo investing systems.

The regular use of artificial intelligence in securities trading is subject to registration with the Brazilian Securities Commission, the CVM, and the required registration can vary depending on the type of activity being automated. Automated investment systems can be divided into two main types: robo-advisors and robo-traders.

Robo-advisors

Robo-advisors are those that make investment decisions based on the investor's profile. They can be subdivided into pure robo-advisors, which simply recommend investments for the investor to make, and AI investment management tools, which make investments autonomously.

The aim of robo-advisors is to increase efficiency in executing trades on the stock exchange, optimizing the investment process through rapid analyses that minimize human effects such as errors and biases, all within the suitability parameters determined by the investor's profile.

Robo-traders

Robo-traders base their decisions on price patterns specified by the investor and execute trades without human intervention. They are commonly used to implement high frequency trading (HFT) strategies, involving the execution of a large volume of trades within fractions of seconds to profit from price fluctuations.

Although HFT is not inherently detrimental, it can clash with two fundamental pillars of the stock market: transparency and fairness. The rapid execution of trades, together with the ability to cancel orders, can create an artificial perception of supply and demand, disrupting the formation of stock prices and leading investors astray. In such scenarios, HFT can create conditions conducive to the commission of price manipulation offences, especially spoofing and layering.

Prohibited under article 2(II)(b) of CVM Resolution No. 62/2022, spoofing and layering involve entering orders without the intention of executing them, thus creating a false appearance of liquidity for a specific asset. In practical terms, both buy orders and sell orders for the asset are entered, but only orders on one side will be executed; the others are fictitious.

The artificial demand creates pressure on one side of the book, inducing other investors to alter their orders to follow suit. Once the target price is reached, the artificial orders are cancelled. While spoofing and layering share similarities, they differ in execution: spoofing involves entering a single large fictitious order, while layering involves successive fictitious orders in small lots.

Artificial intelligence has been integrated into the securities market for some time, and the trend is increasingly creative applications of the technology. The challenge of regulating the use of AI in securities trading has also been with us for some time – and perhaps that challenge is as perennial as creativity and innovation in the securities market.

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