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How One Big Quant Firm Uses Machine Learning

Acadian is exploring ESG data in a new way.

By Christine Idzelis

Acadian Asset Management is evaluating the use of machine learning for picking stocks based on environmental, social, and governance criteria.

“We are in the process of an investigation,” Asha Mehta, the quantitative firm’s director of responsible investing, said in a phone interview Thursday. Acadian, which managed \$97 billion at the end of April, has noted “interesting relations” being formed by the ESG data, but wants greater conviction before implementing them into the investing process.

Machine learning has the potential to help asset managers make nonlinear predictions about companies’ performance, according to the Boston-based firm. Applying the technology to ESG is challenging in part because there are fewer inputs to analyze relative to the data-rich public equities market. “It’s early stages for applications of classic machine learning,” Mehta said. Acadian is actively researching the nonlinear relationships between, for example, company performance and labor standards or employee turnover, she said.

It’s more complex than concluding companies with high ESG scores should outperform peers and those scoring low should lag. While a company with poor labor standards may underperform over a period of 12 months to 18 months, the converse is not necessarily true, Mehta explained. In other words, practicing good labor standards may not predict outperformance. Similarly, it’s not clear that high employee turnover at a company is bad or that low turnover is good. “You do want some level of turnover within a company,” she said.

Acadian covers 40,000 stocks for its quantitative investing strategies and has a broad set of ESG data, according to Mehta. Machine learning can help fill in gaps by identifying them, she said, noting that only about 2,500 companies report carbon emissions.

But having a broad set of data points doesn’t guarantee an asset manager’s success in applying machine learning. “They’re not all relevant,” she said. Acadian is seeking to identify data points that are more relevant at the sector level, the most critical for corporate success, and the most predictive for returns, according to Mehta.

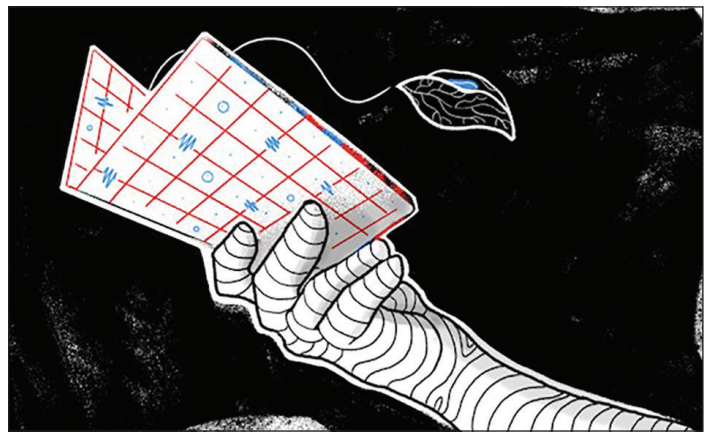


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Founded in 1986, [Acadian](#) works with a global group of investors who are stepping up their ESG inquiries. Outside of the U.S., investors tend to dig deeper in these areas. For example, she said they want to know which ESG factors Acadian has identified as material and how they’re being weighted in portfolios. It’s not enough to simply sign the internationally recognized Principles of Responsible Investing, Mehta noted.

While education on ESG and stakeholder pressure has helped increase its popularity, anxiety persists about using non-financial factors in investing and the role of machines.

At a media roundtable lunch hosted by Acadian in New York on May 15, the firm’s client advisory director, Seth Weingram, sought to dispel the notion that machine learning is some “abstract esoteric mystery.” He said a cultural “unease” with robots was visible in [Super Bowl commercials](#) this year. People worry about computer [glitches](#) or the consequences of machines outperforming humans. It may be unsettling for some that robots have taught themselves to beat the best human chess players, Weingram noted.

Indeed, the broad goal of artificial intelligence is to develop machines that can make decisions at least as well as humans, according to an [Acadian paper](#) last month. The firm said that machine learning “will reshape quantitative investing over the next few years.” ■