

Do quants dream of electric sheep?*

How MDT combines a systematic approach with the human touch.

May 2025

* *Do Androids Dream of Electric Sheep?* is a 1968 science fiction novel by American writer Philip K. Dick. The book served as the basis for the 1982 film *Blade Runner* directed by Ridley Scott and featuring Harrison Ford, Rutger Hauer and Daryl Hannah.

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A quant approach doesn't have to be the black box of popular imagination, says Scott Conlon, Investment Director for MDT Advisors at Federated Hermes.

There are many inaccurate stereotypes surrounding quant investing. For example, although quant investing is data-driven, as the name suggests, computers do not necessarily do the investing. In fact, there is a full array of approaches that involve varying degrees of human decision-making.

"Quant strategies oftentimes get painted with a broad brush suggesting they are black boxes and no one really knows what's going on," says Scott Conlon, investment director for MDT Advisers at Federated Hermes.

Quant investing typically sifts through a vast amount of data – historical market information, company fundamentals, valuation metrics, macroeconomic data – to seek investment opportunities. By relying on empirical data, rather than subjective judgment, quant investing aims to remove emotional biases from the investment process and unlock the power of predictive analytics.

"We've always been focused on maintaining a high level of transparency and accountability to our process. Since the process was designed by our team, we control the input data

as well as how the data is analyzed; so we have a clear interpretation as to how the process is working and fully understand the rationale for all investments," Conlon says.

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Decision trees

Conlon provides one example of how MDT's process works: the use of an advanced modeling technique which incorporates 'decision trees' to evaluate each stock. This methodology is based upon a regression tree model that was highlighted in academia decades ago, and is a standard predictive analytics tool utilized in various industries today, including insurance and the physical sciences.

The decision-tree process involves using a series of yes/no questions to evaluate all stocks based on a discrete set of fundamental (i.e. financial statement information, valuations) and sentimental (i.e. earnings momentum, price trends) criteria to develop return forecasts for each stock (see Figure 1).

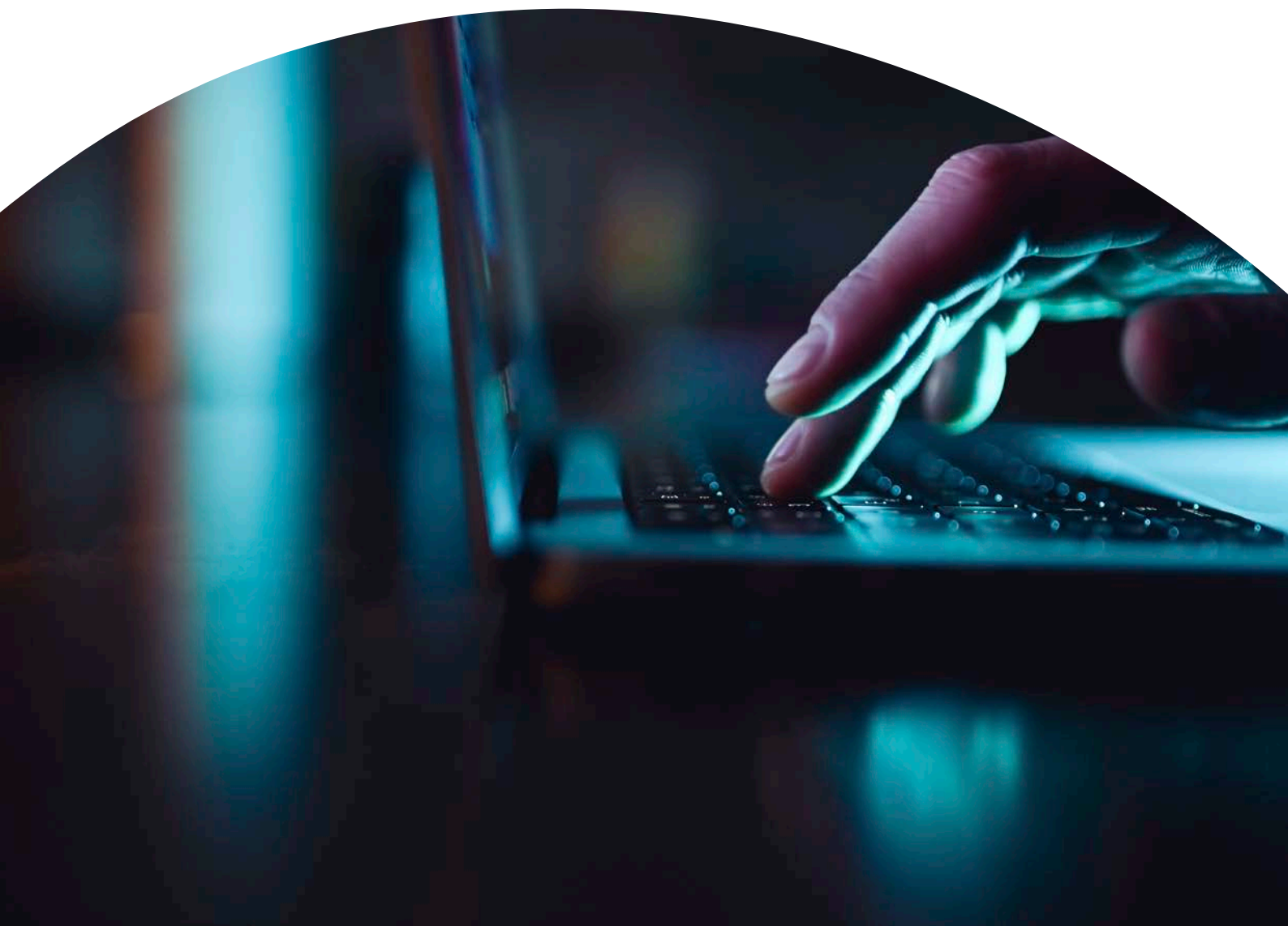
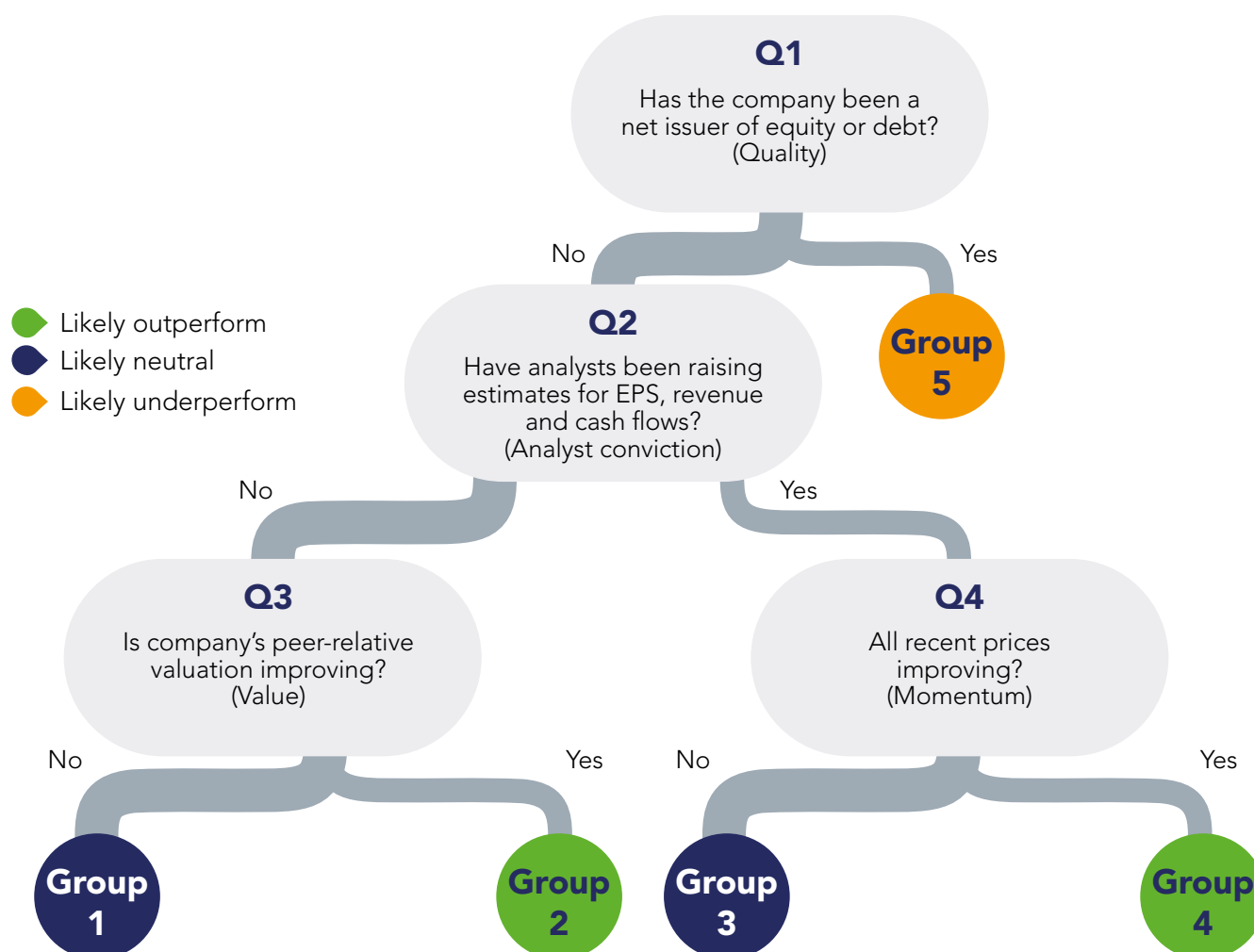


Figure 1: How decision trees work

Explanatory factors



A decision tree example



"We think a key benefit of this approach is that it not only identifies a broad range of different types of companies to consider for investment, but it offers a high level of transparency such that it is easy to understand why companies get scored favorably or poorly," Conlon says.

Another often-misunderstood aspect of quant investing models is that they aren't necessarily static: they can be updated regularly with new data to capture the latest market developments.

Economic moats

For example, a recent improvement to MDT's stock return forecasting model involved adding a new factor that analyzes the 'economic moat' for all industries in the US equity market. Companies with economic moats—such as a strong brand identity or robust patents—have sustainable advantages that could help them to defend profitability against encroaching competition. The team's research discovered that incorporating economic moat analysis for successful companies that have fallen out of favor helped identify buying opportunities. An established moat can help out-of-favor companies keep competitors at bay while re-establishing operating results. Incorporating analysis of economic moats may also help the strategies avoid companies whose stock prices might continue to fall.

"The goal was to look at those companies that have endured a material share price decline and identify a way to predict which may see a strong rebound in their share price.

We found that this probability was stronger in industries with a high 'economic moat,'" Conlon explains.

The human element

A big part of quant investing is the human element involved. For example, the MDT team closely monitors all aspects of its investment process, which includes a review of all trades before execution. The supervised process is designed to optimize each portfolio daily, producing a list of trades each morning. "We don't just blindly execute the list without performing a pre-trade review," Conlon said. The team will override recommended trades if it concludes that the models are not capturing all relevant factors that are driving the stock's share price. This process also helps ensure they have a clear understanding about the rationale behind every trade.

Quant investing is part of a trend that puts data-driven decision making at the forefront of business and investing.¹ Some model-driven applications may cut out humans. However, a best-of-both-worlds approach, where an objective investment process built upon powerful technology that is developed, refined and closely supervised by humans, does exist.

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¹Tim Stobierski, Harvard Business School Online, "The Advantages of Data-Driven Decision-Making," August 2019.

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