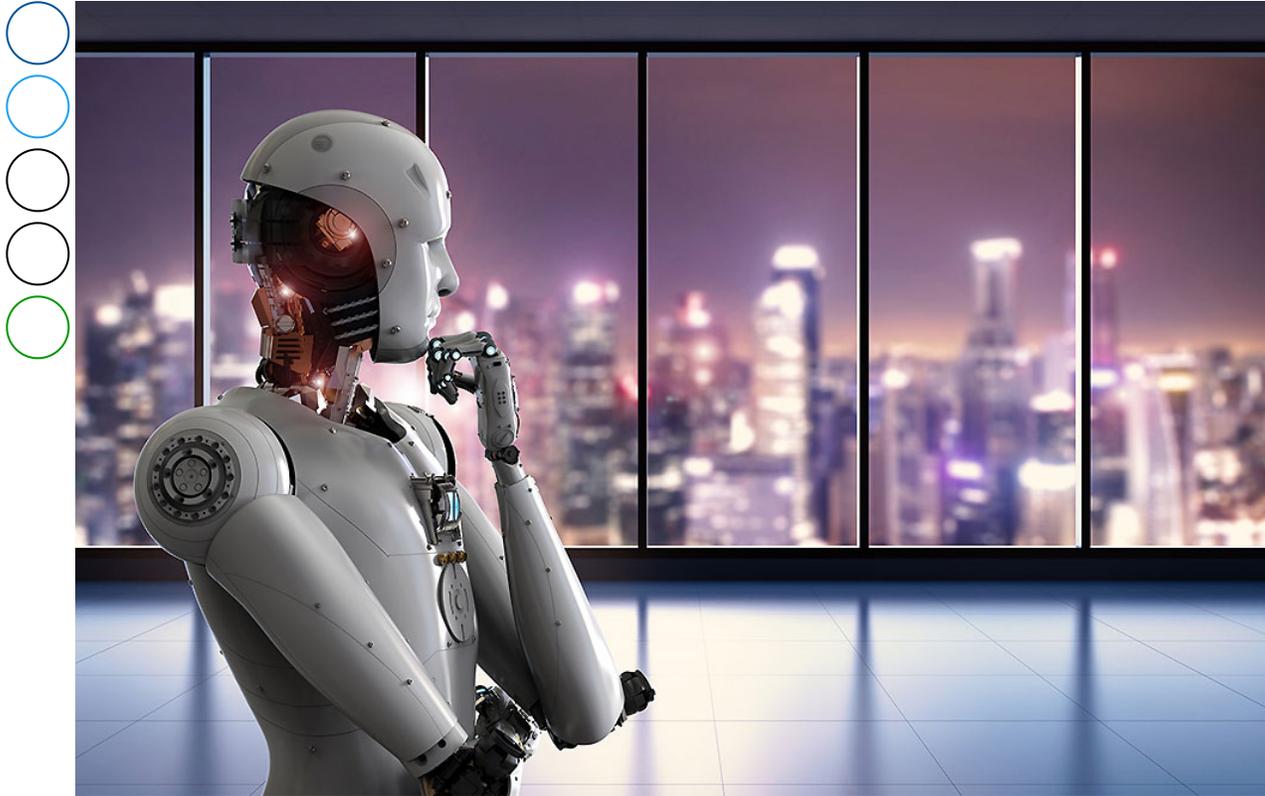


# Disrupting Emerging Markets Investing with Artificial Intelligence

March 28, 2019, 02:56:36 PM EDT By [Bill Hertz](#)



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With the increasing number of new investment management technologies coming into the asset management industry, it's not just the new technology that deserves the scrutiny but specifically how it is being fused into the investment process. It's both interesting and revelatory to see how an innovation works its way into incumbent status-quo thinking and current ways of doing things. With artificial intelligence (AI), it may also be disrupting other quant strategies in its wake, like factor investing to name one.

[Mondrian Investment Partners](#) is an international value-oriented investment manager based in London that has been launching new products and expanding their presence in the US. One of these new funds, which caught our eye, is the [Rothko Emerging Markets Equity Fund](#) (RKEMX) - an artificial intelligence-based emerging markets equity mutual fund. Especially interesting is the way their investment division - [Rothko Investment Strategies](#) also based in London - is applying AI, as they characterize it, as a defensive value driven tool. Their unique application in emerging markets and in the quant world in general warrants greater inquiry and exploration. The [Institute for Innovation Development](#) decided to reach out to **Dan Philps**, Head of Investment Strategies at Rothko to learn more.

Come, let's explore this together...

**Hortz:***How did you come up with the idea for your AI approach for your Fund?*

**Philps:** Research into the methodology underlying Rothko began in 2007 and was the brainchild of Mondrian's Executive Chairman (and founding CEO), David Tilles. The idea was developed leveraging off the organization's vast experience of identifying value opportunities in global equity markets and made possible by the recent explosion of high quality data and computing power. The aim of the research was to systematically replicate the best of human decision making, encapsulating tried and true value investment rationales centered on defensiveness and future income generation with an AI type of approach. We believe AI offers another way to drive fundamental investing but in an objective way.

**Hortz:***How did you actually build your AI program? What was involved and can you share your experience in developing it?*

**Philps:** It was a long journey to develop Rothko. David Tilles' vast experience as founding CIO of a successful fundamental shop and my twenty years of quantitative investing and AI research was a prerequisite. Our starting point was to define a solid, underlying philosophy - income orientation and value investing. We then examined how a best of breed, human-driven manager achieved defensive returns and strong outperformance and we identified two key points that helped us design Rothko's investment strategies.

Firstly, we found that consistently good, human stock selectors tended to use a systematic fundamental approach to identify opportunities, rather like Warren Buffett's approach. Secondly, we found that people generally made poor portfolio managers, suffering from behavioral biases, such as anchoring where stocks are held too long. This has led us to use AI to drive a rules based stock selection approach and use an AI approach to learn when to trade. It is an approach that aims to be both consistent and objective. We believe the results have been impressive.

**Hortz:** *How does the AI program learn and can you moderate or adjust its learning?*

**Philps:** Rothko learns steadily through time and has memories of the shape of crises and opportunities of the past to guide future decision making. My experienced portfolio management team monitors portfolios in real time but we have rarely had to override the approach. This is mainly because Rothko only needs to learn information it does not already know and because the system is already very powerful, that means the learning process tends to be slow and steady.

**Hortz:** *What specifically has your AI "learned" so far about shaping a systematic value approach to international and emerging market equities?*

**Philps:** Rothko has learned many things; most importantly how return opportunities can be exploited in international equity markets. We believe our performance speaks for itself on this. We have learned many things from Rothko too, such as the importance of the way a company treats its shareholders. This is important to Rothko's stock selection, especially in Emerging Markets.

One piece of knowledge that particularly concerns us is the indirect impact of the multi trillion dollar shift into factor investing. On closer inspection we believe the factor trades of traditional quants have become dangerously crowded and this risks a repeat of 2007's "quant quake". It is important to understand that Rothko does not use factors (after Fama and French) or traditional quant tools.

**Hortz:***How can applying AI to the investment decision process potentially add high alpha or excess return relative to benchmarks?*

**Philps:** A well-conceived AI approach can, we believe, exceed the limitations of both human driven stock selectors and traditional quants. Firstly, humans are hard wired to think in 3 dimensions, which means there is a cognitive speed limit when weighing up the many dimensions in which a company can succeed or fail. In contrast AI can consider many, many dimensions at the same time.

AI can also be designed to scale across vast and inefficient stock universes, aiming to extract bottom-up driven alpha. Traditional quants tend to drive returns using weightings to traditional factors, after Fama and French. These factors, such as Value, Growth, MinVol, Momentum, can be accessed inexpensively through ETFs these days. For us, AI is about fundamentals and bottom-up driven returns, alpha, which sets an AI approach apart from traditional quants.

**Hortz:***How is your fund unique in its application of Artificial Intelligence (AI) to current standards of fundamentally driven value investing across non-U.S. equity markets?*

**Philps:** Actually, our AI methodology has commonalities with a human-driven, active, fundamental approach. However, we believe we do not suffer from classic human behavioral pitfalls, subjective judgments, and inconsistent decision making. Additionally, Rothko's AI can retain more information about the world to inform decisions. Our strategy can integrate a myriad of perspectives into each investment decision through different rules or models. Each one of these perspectives is used in our AI's stock selection decisions.

**Hortz:** *Some commentators, such as Research Affiliates, imply that AI is dangerous when applied to investing. Is there any truth in this?*

**Philps:** We firmly believe that naively throwing machine learning - which is a more mechanical subset of AI - at an investment strategy is a recipe for disaster. Investment should always come before technology and, for us, an AI should be founded on investment rationales that a successful human stock selector would believe in.

There have certainly been more thought pieces from traditional quants about the dangers of investments driven by AI but this is notably correlated with the level of disruption AI threatens to old quant businesses and should, in our view, be taken with a large pinch of salt.

**Hortz:** *How exactly can AI avoid, as you have mentioned, the shortcomings of factor models?*

**Philps:** Rothko's AI investment strategy is very different from traditional quant investors that almost universally rely on 'factors' as mentioned. The vast majority of traditional quants generally seek to forecast expected returns or tilt exposures towards factors. We believe factor models offer shallow insights, viewing the world through a simplified, linear-constrained lens. We also note that some traditional quants are blurring the lines between their traditional approaches and AI by employing datamining, such as news sentiment scoring. We do not believe in this approach and think it amounts to window dressing.

Again, factor strategies have also witnessed significant growth where we see indications of crowded factor trades. Investors are potentially exposed should there be a reversal factor sentiment. A Quant Quake 2 perhaps? Rothko's AI maintains a low correlation to factors and a relatively high active share to style-factor indices, drawing similarities to a good, active fundamental approach.

We think an AI successfully applied to investing combines the most appropriate aspects of data-driven modeling techniques with guiding human-like rationales.

**Hortz: *How do you keep developing your AI technology and its applications? Where is your R&D pointing to next?***

**Philps:** Our research continues to search for deeper inferences, guided by the fundamental rationales of value and income. There are a number of threads to this and one we can discuss is our interest in the cutting edge AI research area called Continual Learning. This is where machines accumulate knowledge over time and then learn how to apply that knowledge to make better decisions in the future. I was invited to present some of our research to the world's leading AI research conference in December 2018 ([NeurIPS](#)).

**Hortz: *Can you provide some recommendations and share your experience to advisors on how to look at and apply AI in portfolio management and how best to use it in their client portfolios?***

**Philps:** Whether RIAs are applying AI or selecting an AI tool or manager, they need to have two words at the forefront of their minds: expectations and interpretability. These are the two watch words for reviewing an AI approach in our view. Investors should have crystal clear expectations of an AI. In Rothko's case investors can generally expect value attributes, defensiveness and a material proportion of returns coming from the dividend component.

Interpretability is critical too. An AI approach should be human readable, not a black box. In Rothko's case every stock we hold we can talk to in terms of that stock's fundamentals, valuations, levels of shareholder value and more. Equally we can tell you why Rothko does not hold a particular stock in the same terms.

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Company	Expected Report Date
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