Quantamentally Different

The development of machine learning techniques in fund management are the result of greater availability of alternative databases and increased computational power. Its growth is also due to the success of the likes of Amazon and Google, which use artificial intelligence (AI) to trawl through vast amounts of data to identify patterns and reveal original insights.

Carmine De Franco, head of fundamental research at Ossiam, explains how the firm has been applying the appetite for new data and machine learning techniques to ESG investing.

ossiam

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Why should an investor consider strategies that combine AI and machine learning with ESG?

From my experience, you can do two things when it comes to ESG investing. First, you could integrate ESG to achieve some extra financial goal. You could do impact or you can improve the ESG rating, or quality, of your portfolio.

This is totally fine, but you shouldn't expect this integration to deliver extra performance or alpha because, using aggregated data, one is most likely loosing specific insights on companies. Therefore, aggregate ESG ratings are not well suited to determine strengths and weakness of companies, which in turn allows for differentiating opportunities and risks.

The second approach, which is the one we have taken at Ossiam, is to delve into the detail of ESG and try to extract patterns from the data. This is complicated. And you need help from something that is much more powerful than us humans when it comes to processing this data. We use machine learning with ESG data to pick good companies or to remove companies that represent a risk from a financial perspective.

So it's more than simple integration. And the more you are get access to specific and alternative data, the more you can gain better insights into the companies in which you wish to invest. But to process this data is very complicated.

In any case, we see the future of asset management as being characterised by the increased use of artificial intelligence.

How would you describe the contribution that AI-based strategies make to portfolios vs the human input?

When it comes to using a small piece of information in broad portfolio construction, humans are very good at it. So, to give you an example, if I show you two pictures of a cat, you will recognise it's a cat – computers are not so good with the 'small data'.

Yet, when it comes to analysing, processing and integrating, to try to make sense of lots of data, artificial intelligence tools are much more powerful than human brains. Today, we're in a market configuration where the analysis of companies produces significant amounts of data which needs to be integrated and assessed if you want to build a robust portfolio.

Using artificial intelligence enables you to extract different patterns from the standard ones that human analysts can uncover from data that they are looking at, such as earnings, dividends or cashflow. From that perspective, a strategy that leverages on artificial intelligence within a global portfolio enables you to access a different, uncorrelated source of alpha. And this will be beneficial within the portfolio because you are reducing risk while diversifying your sources of return.

Do humans create value by connecting the dots, while the machine does all the heavy lifting in the analytical work?

Well, the machine algorithm itself connects the dots and give us insights into what's relevant when we assess the opportunities

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versus the risks of an investment. Unrelated facts could be material and important for a given company.

As humans, we might not see it through the data. The machines are the reason we can see, bringing us extra knowledge that can be embedded in a process. In this sense, machine learning is equivalent to the job of an army of analysts, with each of the analysts being very good at looking at one specific direction when processing all the data. The algorithm becomes this synthetic army of analysts.

So, can AI reduce some of the biases that you typically get with humans?

It would be unrealistic to expect managers not to have biases when they build their portfolio. It's our nature as human beings to be biased. The tricky part is when they drift (knowingly or not), because it will make it difficult for end users to grasp the performance drivers of their strategy. If you believe you're buying a large cap fund and then you end up with a small cap fund, or if you believe you are buying a low volatility and then you end up with a high volatility cap, that's complicated.

Artificial Intelligence instead will do it the way it has been built. So if it has been built to adapt by learning, then it can also drift – but in a predictable way, meaning that it will learn, change and adapt as it receives new information. If, instead, the AI algorithm has been designed to look at specific material data sets or specific information about companies in which you invest, then you would expect it will do the same job consistently.

Of course, in this regard, even basic quantitative systematic strategies don't suffer style drift because they apply systematically the same rules. But they miss the learning part that the artificial intelligence has. Machine learning learns from past and current information compared to static systematic strategies, but it doesn't have spurious style drift that humans can have. This is especially true when it's done in bad faith – if the manager wants to catch up with performance, for example, or because they are running dry on new opportunities, so they start to explore different investment universes.

Can you give any examples of when patterns have changed over time and the machines have needed to adapt?

I remember when we first started working on the link between machine learning and ESG data, the most powerful indicators were

pointing to environmental issues or transparency on reporting related to climate change issues. Now, I'm not saying that they're not important anymore, but I would say that the power to discriminate between good opportunities and risk has slightly declined in the last couple of years.

Recently, I've started to see more things related to social issues, to deep and specific governance issues that could be early warnings of problems down the road. And the machines have adapted too – they understand that the most interesting patterns have to be looked at when mixing social and government indicators, as well as the environmental ones.

We've heard about the use of satellite images of car parks in shopping malls to determine company performance. Are there any differentiated sources of data that go into your breed of AI?

As of today we are using ESG ratings and very granular scores together with carbon data, but the plan is to integrate little-by-little with data sets that could convey useful information about companies. I'm very open to look at alternative data sets. It could be Twitter feeds, pictures from satellites or other alternative datasets.

But one has to be very careful of the way you interpret the data. Considering the example of looking at parking lots in a US mall to try to assess whether it is doing good business or not. If you took pictures last weekend, the mall would have be full – but that's because it was a Super Bowl game, so people were there to watch the game. It doesn't necessarily mean that people are spending, they might be waiting by the bar with a beer, and then watching the game.

If you extrapolate from this example, alternative data is always good to get a different way of looking at things. But the economic links between the data and the financial performance or the economic performance have to be there. In probabilistic terminology, you can't get signal from noise. If the data is noisy and meaningless, no matter how good your artificial intelligent algorithm is, you will still be digging noise.

The same applies to Twitter. I know many hedge funds or alternative funds have been looking at this as an alternative data source. I'm not saying that Twitter is useless, but the amount of noise you can find in these data sets can be huge.

So one has to be careful. Of course, the point is to enlarge the domain of knowledge,

which means integrating new data sets that can be interesting and relevant from an economic point of view.

So, in a nutshell, why should an adviser choose Ossiam to manage their ESG investments?

Many investors today need to articulate and then develop their ESG policy. But ESG investing is often specific to each investor and each individual.

For us, ESG is about ethics. It should reflect the personal values of each adviser, and it should be clearly stated. That's why we try to avoid vague and ambiguous statements on ESG. Instead, we try to be very strict, ambitious and measurable in the way we implement ESG. We try to concentrate on objective metrics that investors can rely on.

With Ossiam, you can be sure that ESG will be always implemented in this clearly stated and measurable way. And we aim at being fully transparent and honest in the way we implement it.

Furthermore, we have a pragmatic and flexible approach to ESG in the sense that we adapt a general framework to each specific investment strategy, in the most ambitious way, to achieve a complementary and mutually reinforcing balance between financial objectives and ESG values. You can't do the same thing in government bonds, emerging markets or US large corporate equities.

We make ESG complimentary to the financial objective of each strategy. Therefore, our investors understand that ESG will not be a drag on performance – rather, it will be complementary to the risk return profile of the portfolios in which they are investing.

Written in February 2020

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