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Big Data is the Big Other

"Nothing is so difficult as not deceiving oneself." —Ludwig Wittgenstein, Culture and Value.

(November 19, 2015)—In "Investing Is One Big Data Problem," I discussed big data and beneficial investing writ large. Because of the number and content of the responses I received, I thought I'd revisit the topic with more specificity.

Previously, I argued: i) Successful investing requires an informational edge; ii) we struggle with investment performance because we all basically use the same information (price, economic, or financial data) and methods to extract insights from these data; and iii) big data—the large-scale, complex, nontraditional datasets themselves and the computational/analytical tools used to discover patterns and other actionable information that were previously obscured by the scale, velocity, variety, and complexity of these data—could help investors gain an informational edge.

This argument leads to the obvious conclusion that both traditional and alternative asset managers, with their clearly defined financial incentives and performance needs, should be actively integrating big data into their investment processes.

Oddly, this is not the case. Currently, only a few asset managers use big data in their investment processes. (And, again, I'm not talking about using Twitter to help pick stocks, but using nontraditional datasets and analytics to drive decision making.)

Why has big data not been more broadly adopted?

The obvious answer is talent. You can't 'do' big data with CFAs, MBAs, and financial engineers. You need professionals with diverse skills and deep knowledge in statistics, mathematics, probability, data engineering, ML (programming language), software engineering, visualization, and spatial data. (For simplicity's sake, let's call these professionals 'data scientists' but recognize that doing so masks a rich variety of specializations and proficiencies.) Currently—and for the foreseeable future—the demand for data scientists outstrips supply. A Wall Street Journal article found two job listing sites had between 24,000 and 36,000 openings for positions from more than 6,000 companies that have data science in their titles. The source of the demand is companies of all sizes and across industries recognizing that data-driven decisions increase productivity and profitability.

A less obvious answer is the purpose of the asset management business. What motivates great data scientists are the types of problems to be solved and the possibility that the solutions materially improve human welfare. Their choices are manifold and, candidly, using big data to increase a Sharpe ratio doesn't have the same appeal as using unstructured datasets and analytics to simulate molecular features of the HIV virus over its lifecycle to potentially reveal new, more effective treatments.

Related to purpose is culture: "The dominant trait among data scientists is an intense curiosity—a desire to go beneath the surface of a problem, find the questions at its heart, and distill them into a very clear set of hypotheses that can be tested," according to the Harvard Business Review. This requires an agile, open culture that gives them the freedom to experiment and explore possibilities.

Curiosity, agility, openness, and freedom are not attributes typically associated with asset management firms.

There's also a subtler but more significant barrier: ignorance. Information might be what drives investing but few asset managers seem to truly understand large-scale, complex unstructured data and the associated analytics. Yet asset managers intuitively sense big data has commercial value because they see its value manifest in their everyday lives (and by a few successful competitors).

My thesis is that their academic training and professional careers have indoctrinated them in the immutability of traditional data and quant methods, causing big data to appear to them, to use a term from Jacques Lacan, as the "big Other."

The very suggestion that there are data and methods beyond the familiar disrupts their decades-old ontology. An analog is the Catholic Church in the late fifteenth century when it struggled to reconcile the discovery of indigenous people of the Americas with its Aristotelian-based theology.

But there will be no Sublimis Deus to rectify this situation. (Not even a change in the CFA Institute curriculum will suffice.) Individual managers will be left to find their own remedy. The most likely solution will be to focus on the lowest barrier: hiring data scientists. Managers will compete in the data scientist arms race by simply outbidding their rivals. This solution has a low probability of success because the problems of culture and ignorance remain.

A more successful but less familiar approach would be to follow the lead of companies that have successfully extracted the value out of big data: i) identify and articulate a specific problem that big data could help solve; and ii) create an integrated plan for "how data, analytics, front-line tools, and people can come together to create business value." (For more details on this idea, see David Court's "The Case for Drafting a Big Data Plan.")

Regardless of the remedy an asset manager chooses, big data is a disruptive force that is transforming our industry. Asset owners will be the beneficiaries of this transformation because it will bring about changes our industry desperately needs: better investment performance, innovative investment strategies, and the Darwinian winnowing of the asset manager herd.

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