

# Quantamental: A New Dimension of Active Investing

## Disruptive Forces in Investing

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**Anu Rajakumar:** In the pursuit of new and innovative ways to generate alpha, a new frontier has emerged: quantamental investing. It combines the computing power of quantitative investing with the human expertise of fundamental stock picking. My name is Anu Rajakumar, and on this episode of “Disruptive Forces,” I’m joined by Tim Creedon, director of Neuberger Berman’s global equity research team; and Ray Carroll, chief investment officer of Breton Hill, Neuberger Berman’s quant arm, who will discuss how a quantamental approach is reshaping how we think about security selection. Gentlemen, thank you for joining me.

**Tim Creedon:** Thank you.

**Ray Carroll:** Thank you.

**Anu:** Tim, let’s start with you. You lead Neuberger Berman’s global equity research team where your analysts objectively make company recommendations based on their research and knowledge. What are some of the pros and cons of this approach?

**Tim:** Sure. So generally speaking, fundamental investing involves analysts doing a lot of analytical work; meeting with companies, meeting with competitors, doing modeling, et cetera. And the goal of an analyst is to get an edge in the market, something that others don’t see. That’s the typical profile of an analyst. And so most analysts, if you think about it, are very deep in a sector, but there’s only so much they can cover. So it’s a limited number of companies. And the bet you’re making with fundamental investing is that human judgment will add value, essentially. So analysts can make assessments of when there’s change happening—whether it be management change or regulatory change, new product change—and they can assess what’s changing about the future. And that’s the real value add of fundamental management. And that’s something that we think is super important and super valuable. So the challenge, or weaknesses, I guess of fundamental investing are three big ones I think. One, it’s very time intensive, so it takes a ton of time to do all this deep fundamental work on companies; and there’s only so much time people have, so there’s only so many companies you can look at. The second is, we’re all information constrained. There’s so much data in the world and increasingly more and more data, Big Data, that’s making it very hard to analyze all this stuff. And three, we’re human, so we have blind spots, et cetera, that make it a little bit difficult to manage. So I think the big disruption that everyone is talking about is, how do you bring together the strengths of humans—which is related to doing deep fundamental work—with some of the benefits of quants, machine technology, et cetera, to kind of bring the best of both worlds together to try to improve performance and active management.

**Anu:** Yes, absolutely. So fundamental investing has the benefit of depth. So let me pass it over to you, Ray; same question for you, but pros and cons of quantitative investing.

**Ray:** Yes, sure. So on the pros side, we have to start with breadth. So every night we’re downloading information on about 6,000 different tickers. We come in first thing in the morning. We’ve already formulated all of our views on those stocks, and we’re ready to trade. So that level of scale is tough to beat.

**Anu:** Super efficient.

**Ray:** Absolutely, and then the second thing is, I think there’s real value to having a rigorous discipline of evidence based investing where we really do take care to scientifically estimate, what’s the forecasting power of the different factors that we’re using, making sure that when we use factors like momentum, we have a clear view on buying today’s winners; what’s the probability that it will be tomorrow’s winner. When we buy value stocks, what’s the probability that buying our earnings cheap today is going to create a profit over the next year? And so there really is some evidence behind what we’re doing and that rigor is important. And then finally, on the portfolio construction side, I think quantitative investing lends itself quite naturally to figuring out, how do you maximize the edge you have in your different positions while controlling the various risks where you don’t think you have an edge, whether that be your market beta, your sector exposures or other factor exposures.

**Anu:** Great, and what about flaws, if any?

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**Ray:** Yes, absolutely. On the cons side, I'll tell you the stuff I worry about. The problem with evidence based investing, as I just described, is that it's really tough to react to situations like I read about in the Wall Street Journal this morning; a potential \$18 billion settlement for opioid producers. That sounds really important, but that's really tough to validate in the kind of framework I just described to you, because that kind of settlement has never happened before, in this industry at least. The second problem with that sort of evidence based, data driven investing is that a lot of the data that's available is older data, a little bit stale data; maybe refers to historic periods. And we are using those historic periods to actually make forecasts about future periods; but wouldn't it be great if we could find more relevant, more timely, more forward looking data to incorporate into that process as well?

**Anu:** So we're bringing these two approaches together into quantamental investing. I'd love to hear a little bit about the mechanics about how a quantamental strategy actually works.

**Ray:** Yes. Well we've created a process where there are a few different paths to agreement. The critical thing is that we're taking a co-PM structure—one PM from our quantitative team, one PM from our fundamental team—and both of those PMs give the signoff. And so that means we have to come up with, what are the appropriate paths to agreement to make that happen; and that can be a fairly straightforward process where a very highly quantitatively ranked stock coincides with a fundamentally buy-rated stock, and there it's a shorter conversation. But actually the really engaging and interesting conversations are the ones where there is not initial agreement between a quantitative rating and a fundamental rating. And so there what we have to figure out is, okay, what kind of case can a fundamental analyst make to a quantitative analyst to change that mind; or, vice versa, what kind of case can a quantitative analyst bring to a fundamental analyst to have them reconsider a position. And so that's led to some really interesting things. So for example we have situations where we've made financial adjustments to our input data that goes into our models, because maybe there's been an intra-quarter activity, maybe a company issued – for example – debt in the period. And so we need to adjust our financial ratios to account for that. Maybe a company reports in a way that might be unusual versus its peers, potentially disclosed in notes, but quants are, as I mentioned, downloading data on 6,000 tickers every night. We're not reading every note in the financial statements. Or perhaps the fundamental analysts can share a certain key performance metric or way of evaluating stocks in a certain sector industry that, then, the quantitative analysts is very well equipped to actually test on a historic basis and actually measure the forecasting ability of that key performance metrics. So there are actually are multiple ways to actually come to an agreement, and that's where, I think, the real value is in that engagement process.

**Anu:** Now I'm curious if there's an example of when that's happened, and how differences were handled or resolved.

**Ray:** I can share with you one example that I think is really fascinating and illustrative of the fact that you just can't smooch two portfolios together or look at an overlap portfolio and end up in the same sort of spot as you do with an engagement type process. The example I'm thinking of is in the cruise lines, where Carnival Cruise Lines was a buy-rated security from the fundamental team. Royal Caribbean was a highly ranked security on the quant side. And so if you just look for overlap portfolios, you would end up having no cruise line exposure, because they both had different names. Now through the engagement process, though, what we discovered is that the fundamental analyst was primarily taking a macro view on the cruise line space. The quant view, on the other hand, was that there were meaningful technical reasons why we didn't want to own Carnival Cruise Lines; we preferred Royal Caribbean. But a quantitative analyst and a fundamental analyst can pretty quickly come to an agreement, because they can suss that out and the fundamental analyst can say, oh, you know what, I understand why you have that preference; and that does meet my macro view to express a view on the cruise line sector.

**Anu:** Absolutely, and Tim, earlier on you mentioned Big Data. So is Big Data an input into the quantamental portfolios? So how does, for example, artificial intelligence or machine learning get integrated into this process? Is it done separately and then together, or could you explain that a little bit?

**Tim:** Sure. So I'll speak maybe of the fundamental side to start. Big Data is an area that we're investing in significantly over the last few years here at Neuberger, on the fundamental side and on the quant side. But on the fundamental side the way we've thought about this is that there's more and more data in the world, and how do we help our analysts analyze and process that data. And so over the last couple years we've built out a data science team that's part of central research and, importantly, integrated with central research, as opposed to some firms where that's a separate team that works separately. It's really integrated with the analysts, and that's purposeful. We want the data scientists to understand what the analysts are looking for so that they can help the analysts find data that's relevant, and vice versa; because I think one of the things we've found with data is, there's so much data in the world, the challenge is – it's the classic, what do you look at, what do you focus on; the boil the ocean kind of challenge. And so far our data scientists are having a lot of value when they really understand, what is the analyst looking for, and vice versa. That's where we're seeing the most value in helping analysts; whether they have a question around their thesis, helping to validate that or not. So if they have a thesis, whether it be about a company – maybe a clothing company – are they growing with millennials; are they growing with males or females – the data science team can help find data and help process that data to make it usable for analysts. And so all throughout our fundamental research teams, we're trying to integrate Big Data into our process as part of the traditional fundamental process.

**Anu:** What are examples of Big Data being used in clothing companies? Is it looking at credit card data, parking lot activity? What sort of stuff are they looking at?

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**Tim:** Sure. There's tons of data sets out there. Some of the ones that we're using most heavily are probably around credit card data, web browsing data. But there's lots of alternative data that you might not think of around job postings and – again I don't want to give away secrets, but the challenge is, frankly, what the right data to use. You can spend a ton of time and a ton of money on lots of different data sets, and it might not give you any value. It's really, what's the right question to ask. So the way we found the most value with Big Data on the fundamental side is to assess, what's an analyst's key thesis on a stock; and then, how do we find data points or data sets that can help us evaluate that thesis as we move along time. That's the way we use it for the fundamental process.

**Ray:** Yes. On the quantitative side we spend more time focusing on building broad based cross sectional scores. And so where I think this is really powerful is when a view on a name is the result of a fundamental analyst, which may include a deep dive data science review of that name, together with a quantitative analysis that include a broad cross sectional review of that name. And there's been some really interesting results. For example the data science team did a really fascinating study on a company that linked their large-scale renovation plan to subsequent increased foot traffic in their stores – deep dive analysis. But that coincided with our cross sectional analysis, using the kinds of scores we use with credit card data, things like not just growth and revenue but other things like share of wallet metrics and so on. So put those two types of analysis together, and you have an increased conviction in your view on that name.

**Tim:** I think just one thing to add: I think, as we think about how do we levitate across teams now, like I said, for fundamental analysts, they would look at one-offs of their thesis, and how can they use data; but as you're working with the quant team, I think we're thinking through ways: How do we turn alternative data, really, into different factors that we can analyze over time; whether that means, rather than just looking at total sales from the credit card data, you can look at loyalty from the credit card data; you can look at cohorts and what's happening with that. And over time I think what you'll find is that there'll be different, interesting quant takeaways from that that will be relevant for quant and also, obviously, for fundamental analysts.

**Anu:** I'm sure this has been just a fascinating process for both of you, coming from totally different and distinct approaches. I'm curious about any misconceptions that you've found have been debunked about the other side of investing or maybe just more broadly, any lessons learned.

**Tim:** Yes. So starting from the fundamental side, I think there is a myth out there – or not a myth, but a perception maybe – from some fundamental analysts when we started out that quant is more about data mining and just looking at historical stuff and using the machines. And I think as they got to know a little bit more about quant, I think they started to appreciate a little more how fundamental our quant teams are. And again, there's all different types of quant, but the quant team here at Neuberger Berman – it's very much fundamentally oriented, and I think that's been an interesting surprise for many of our analysts as they start to learn more about how that process works. And frankly it's really just been a learning process about language and understanding how they think about and talk about the way they invest, because when you actually pull back those different layers, actually there's a lot of similarities between the two teams.

**Ray:** Yes. I think on the quantitative side, one of our learnings is exactly the reverse of what Tim just said, which is that fundamental analysts are actually quite process driven. I'll tell you a quick story. One of the really excellent analysts on Tim's team, he actually took a little bit of exception once to being called a discretionary stock picker. He felt like that actually did disservice to the very careful and rigorous system that he's laid out over the years and the precise conditions he's looking for to invest in a stock, and then the work that goes into backing that up. So I would actually say that the fundamental analysts—if they want a good, repeatable process—are actually highly process driven; and we as quants are probably a little more fundamental than maybe people expected. And so I would also say there's one other misconception that has been cleared up as well, which is, I think that my quantitative team thought that Tim's team would have a much longer holding period; and I think, Tim, your team probably thought we would have a much shorter holding period. And it turns out that our holding periods are actually not very different.

**Anu:** Oh, interesting. So now are there any drawbacks here to quantamental investing? Is there anything investors should be thinking about from a risk standpoint?

**Tim:** So one of the things I think people have to be aware of, and I think it's a challenge a lot of people go through when they first think about, how do I combine quant and fundamental is the initial instinct is, let me just take the best of quant and the best of fundamental and I'll smooch it together, and it'll get even better. And frankly I think everybody out there has tried that and has found out it doesn't work. And so what you really need to do is to that next level and understand: Why does the quant side think that about a stock? Why does the fundamental side think that about a stock? And then, when you're doing revisions, make sure that makes sense from the other side's perspective. That takes a lot of time and a lot of energy; and frankly the biggest challenge is cultural, getting people to work together and understand each other. But I think that's going to be the key decider of who makes the next step to quantamental; because it's much harder than people think after first trying it.

**Anu:** Yes, it's not just a simple Venn diagram of the overlapping sections.

**Tim:** No, but everybody tries that first.

**Anu:** Exactly.

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**Ray:** Yes, and I think the real risk to execution is on the more behavioral and organizational side. So I think to do this right, first of all, it's a really meaningful scale game. You need a lot of resources. So in our case we're talking about 20 quants, 40 fundamental analysts, five data scientists. So it's a real, meaningful effort in order to pull all that together. And then in order to also, as Tim described, the real value here isn't smooshing two portfolios together. It's in that engagement process, so that you can have actually deeper insight into names and land on the right answer. In order for that engagement process to happen, you need alignment from the top down; and then from the bottom up, you need real champions that are going to drive the process. And so pulling all that together, I think, is the challenge; and the folks that can get that right, I think, will be the winners.

**Anu:** Yes, a real collaborative process.

**Ray:** Absolutely.

**Anu:** So finally I'd love to know what you think the future holds for quantamental investing. Do you both think this is the future of the investment world?

**Tim:** So I think both sides are probably going to keep leaning more and more to the other side, as fundamental analysts become a little more quant aware in terms of how they think about their portfolios and risk management et cetera, and vice versa. Quant is continuing to try and get more fundamental. But just like there's thousands of versions of fundamental and thousands of versions of quant, there'll be lots of different versions of quantamental in terms of how people actually implement it. And so I think the big challenge is going to be, how do people invest the resources, as Ray said, to compete in that world; because we're all competing in a world where, frankly, there's fee compression; and who has the resources and the ability to invest in what is a very expensive endeavor, you need a lot of fundamental analysts with deep expertise. You need a lot of quant analysts. You need data scientists. And pulling all that together is going to be challenging. So I think it is the future, but I think it's going to be limited in terms of who are the people that are able to do that.

**Ray:** Yes, I agree entirely with Tim. I think there's no question that the future will involve quantamental, because there just is no industry anymore that is not becoming more technical and more data driven every day. But I think that we shouldn't mistake that with the additional conclusion that it means everyone will look the same. I think we've chosen a path that we think plays to our strengths, both culturally and from an investment perspective. I think if others took up the same challenge, they would actually end up in a different portfolio, in a different process; and that's what'll make this a fascinating area.

**Anu:** I totally agree. Tim, Ray, thank you so much for joining me for today's discussion on quantamental investing. Being able to harvest the benefits of breadth from quantitative investing and the depth from fundamental investing, as well as incorporating the unique forward looking insights from Big Data, seems like an appealing investment opportunity for investors to consider, so thank you again, both, for being here.

**Tim:** Thank you.

**Ray:** Thank you.

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