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Climate Change: A Growing Investment Consideration

Disruptive Forces in Investing

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Anu Rajakumar: Hello, and welcome to Disruptive Forces, a podcast from Neuberger Berman exploring innovations in investing. I'm your host, Anu Rajakumar; and today I'm delighted to be joined by Jonathan Bailey, Head of ESG at Neuberger Berman, to discuss climate change and its impact on investment portfolios. Jonathan, thank you for joining me today.

Jonathan Bailey: Thank you for having me.

Anu: There seems to be a wider acknowledgment today that the effects of climate change pose a material risk that investors need to prepare for; but let's take a step back and tell us about how the conversation around climate change has evolved over time.

Jonathan: Well I think investors have increasingly realized this is something that they need to be focused on; and the reality is, is that we're seeing evidence of the climate crisis in the world around us. We're recording this on a day where France has had its record ever temperature, over 45 degrees Celsius. That's over 114 degrees Fahrenheit—if you look at the five days with the highest, temperatures in the history of humankind since 1500, they've all come in this century. So we're seeing evidence that the climate crisis is happening now. And investors are saying, well look; if we're long-term oriented; and we're buying companies, we're buying bonds, buying assets, that are going to be exposed to this set of risks as they begin to get worse, we need to understand their implications for the value that we should be putting on those assets; and you know, there are scientists out there, including through the U.S. federal government's National Climate Assessment, the last of which came out only a few months ago, who are trying to put a value on this. And if you look at the United States economy, through the end of this century, the estimate is that up to 10 percent of the U.S. GDP could be at risk from inaction on climate change. So we believe that if you are a smart, long-term investor, you need to be factoring this into your analysis and considering what you want to be exposed to at what point, and at what point it's appropriate to take things out of the portfolio.

Anu: Absolutely, and I think to that end, would love to hear about some of the ways that the investment community is really formalized around this issue of climate change and the risks that pose to portfolios.

Jonathan: So I think the first thing is that we've become more sophisticated in how we analyze these issues, right—if you go back to some of the work that was being done maybe 20 years ago, it was really about just beginning to have dialogue around carbon footprinting and about actually just saying, what are the sectors and industries that have a particular exposure to high carbon emissions. But now we're actually looking forward. So we're not just looking at a static view of where things are today; we're looking forwards and saying, well, how are business models going to be disrupted or threatened or benefit from the transition to a low-carbon economy; because this isn't just about what we don't want to invest in. One of the things that's really important as investors is to be able to have the right data and disclosures to work with; and the Taskforce on Climate-related Financial Disclosure, the TCFD; an acronym that those of us in the sustainable investing world have come to love; is one example of trying to make that happen. And so that was actually started by the financial stability board of the G20 under the leadership of Mark Carney, the Bank of England governor, a few years ago. And what the TCFD framework has done is, it said, look; this could be a systemic risk in financial markets. And so if we're going to reduce that risk, we need insurance companies, we need banks, and we need asset managers, to understand the risk that they may be exposed to and ultimately to make changes in their underwriting practices, their lending practices, and their investment analysis, in order to reduce that risk. So the TCFD asks those participants in financial markets, to do the type of analytics and scenario analysis to measure that risk; and it also encourages them to push companies to take action around their own governance; to make sure climate risk is on the minds of the boards of those companies, and they're providing appropriate disclosure around how their business models will be affected by the transition to a low-carbon economy, or inaction and the physical risks that they're exposed to.

Anu: So now just to follow up with that, how does knowing this climate-related financial disclosure make investment decision more robust?

Jonathan: Well when you look at, say, a bond that you're buying; and you're looking at credit risk; you're looking at liquidity; you're looking at a number of other considerations; one of the things that you want to also know is will that bond be able to be repaying principal and

interest over the next five, 10, 20 years, depending on the duration. So having the right tools to be able to assess that in a consistent manner across different issuers is a real value add. And part of the challenge we've had historically is that those forward looking assessments are based on a series of assumptions around what will happen to policy, to physical change in the environment; So having consistent scenarios based on the same assumptions around how policy will change, what is required in terms of efficiency gains, and where there might be physical risk, allows us to have a more apples to apples comparison. Now we recognize that, you know, companies are not always keen to point out the weaknesses that they have; but if it's financially material, we believe it's incumbent upon management teams and boards to provide that information to investors; and that's why we're working, along with others, on things like the Climate Action 100+, which is a group of hundreds of global investors targeting the actually 120 or so largest carbon emitters around the world, to encourage them to adopt the TCFD's recommendations; provide this sort of scenario analysis; and have their boards take responsibility for overseeing climate risk in their businesses. A good example of a company that we believe is taking this issue seriously is Total, the European oil and gas major, that's made a public commitment to reduce the carbon intensity of the fuel products that it sells, aligned with a series of scenarios including those based on the Paris Climate Accords of a 2-degree transition. And we believe this is the sort of long-term leadership based on real facts and forward looking projections that will shape capital allocation, business models and the products and services that we need as investors in order to make those sort of long-term investment decisions.

Anu: You talked about a few of the metrics, related to climate change that companies are considering. Now how do you reconcile the overall view of a company that scores really well on, perhaps, the steps it's taking to reduce its carbon footprint; but maybe scores poorly on other areas of environmental, social or governance factors like wage practices or diversity?

Jonathan: It's a great point, because you know, you can't just be an electric vehicle manufacturer and that kind of is enough, right—that's not the only thing that matters. If you've got great electric vehicles, but, you have governance flaws, you don't have an appropriately independent board; you might not, be managing health and safety issues in the workplace. Those could affect your ability to ever realize the potential of those electric vehicles. And of course you need to be thoughtful about valuation—if a, company is valued at a level which is unsustainable, even if it's very good for climate change, that may not be a wise investment.

Anu: Yeah, absolutely. So we talked a little bit about the accelerated timeline of climate change and the focus that the investment community has. Could you run through some of the major risks that investors really ought to be thinking about today.

Jonathan: Well there's two real types of risk that investors need to think about. The first is physical risk. And so obviously we've mentioned heat already, there's hurricanes, other extreme conditions that are likely to increase. And heat is a real one. If you think about if you're running factories, or hospitals networks in areas of the world that are likely to have more days of extreme heat, for example the southwest or southeast of the United States, well that's going to increase your costs both through running AC units more frequently, also lost productivity, and disruption to supply chains. So that's a real cost that you need to be considering as you're investing around the world. But the transition risk is also really important. And that's about changes in regulation, legislation and consumer preferences. As a result of shifts in the types of technologies that we have available or that we need to have available. And a good example of this is the automotive sector. So we do know that there's plenty of work being done on moving towards electric vehicles and hybrid technologies. In some markets, that's being encouraged and spurred by certainty around when regulation will be in place that requires the shift from internal combustion engines to electric vehicles. So for example in the U.K. and France, and some parts of the Nordics, those regulations are in place with clear dates in the 2030s. And that's why companies like Daimler, have put out public commitments to transition their entire vehicle fleet towards electric vehicles and other technologies by those similar 2030s timeline. The investment they are making today to make that possible, and also means that they'll be advantaged compared to those that aren't moving so fast, in other markets where regulation may not be as clear. And so as investors, understanding how those transitions are being acted on by boards and management teams and the regulatory structure that surrounds that, is a really important investment consideration. But what's wrong is to ignore those plans, or to ignore the implications, and then to blindly follow those plans; and so that's where being an active manager makes a difference, because we can engage with companies. We can understand what they're doing. We can push management to be clear, and then we can make an active choice; and it's not just about downside, right—there's also opportunity here, too. So if you are a business that has some transition that needs to be made; but you've been investing in the technology, the intellectual property; building the capabilities to evolve your business model; that's going to advantage you, as the transition happens. And businesses also have not waited for consensus. Many businesses have made the commitments that need it. So look at the technology sector. You know, you might not have thought about it; but actually the carbon footprint of a CD is actually lower than streaming music over the internet at the moment.

Anu: How is that? I'm curious.

Jonathan: Simply because the, the one time emissions associated with pressing that plastic together and so on is, is actually quite low; and if you think about all the energy that's used in your mobile phone or your speaker, and then in the data centers. So you know, you're seeing now some of the tech giants making commitments to go carbon neutral in their data centers; 100 percent renewable power to power

them, uh, looking at massive efficiency gains in the data centers, right; and those sort of steps will mean that, next time you're listening to Lady Gaga, you can do it knowing that you're doing it in a more sustainable manner. And that's happening in part because these companies realize that they need to take action, but it's also being spurred by local regulations in states like California, who have decided that data centers are such a demand for energy that they're going to start putting in place local regulations that are going to drive efficiency. So you know, leading companies are getting ahead of that; realizing the reputational benefits as well as the operational gains from taking action; and we're seeing progress. A good example of this is Apple that's actually had renewable power powering 100% of its data center use since 2014, where Amazon is at about 50%, with a commitment to 100% in due course. And in fact that's the service, Amazon Web Services, that Spoitfy uses for its streaming service. So every time you're listening to music, today about half of the power that's needed for that is coming from renewables, and one day it will be 100%. So that's the messy, kind of range of regulation and policy. It's coming together with businesses saying, look, we've got to get on with this; and much of it will pay for itself.

Anu: Aside from investing and divesting in securities, what are some other ways that asset managers are thinking about managing climate change risk in portfolios in terms of engagement; and maybe just a few examples about how folks do engage?

Jonathan: Yeah. I mean, engagement gives you two options. So one is, you hope, and you aspire, that you will be able to encourage a company to change their practices and actually de-risk, right; and so that's the, that's the main objective. So talking to a company about taking appropriate actions themselves, committing to reductions in emissions, improvements in efficiency, aligning their business model with a two-degree scenario; that's the goal. But if you don't get progress on that, then that teaches you something, too; which can allow you to have a better informed investment decision. I just think back to, a company we were engaging with a couple years ago, who had done a filing. There's a service called the Carbon Disclosure Project, CDP, that many companies report in to around their carbon footprint; and one of the things you can put in there is whether you have an internal price on carbon. And so that's often thought of as a good sign, because if a company is saying when we make a capital investment, we're going to price carbon at a certain level; it suggests that they are being a bit more resilient; and that capital investment's more likely to make sense over the long term, if carbon does get priced at that level. And so this company, an oil and gas company, had put in their filing that they used $25 a ton. Now we engaged with the company and were trying to understand how they come up with that number; how did it affect what they did, because it should be a good thing; and, they said that this wasn't in fact a number that they used as an additional cost on capital investment to make them, think twice about investments. It was actually how much they paid to buy more CO_2 to pump underground for enhanced oil recovery. So it was a somewhat misleading data point to have put out; and the reason why I tell that story is that, if you were just pulling this data off Bloomberg, or you were depending on some third-party provider, you wouldn't know that; but this told us not only that, this number was unreliable; but it also told us that this company's management team was not taking this issue seriously, and so that meant that we felt we weren't necessarily in a position to be able to engage for a successful outcome; and hence it was a stock that was no longer buy rated.

Anu: That's great. That's very interesting. I'd like to just hear a little bit about the efforts made by companies and governments from a regional perspective, so I'm wondering if you could compare and contrast the climate change related developments between nations; developing versus emerging markets, Europe versus the U.S.

Jonathan: Yeah. I mean I think one the things that's been so fascinating here is how fast we've seen a, broadly a global consensus about the need to take action. And so countries like China, who historically have been criticized for action on climate change are actually one of the leading players—in fact the largest part of the global green bond market, the largest issuances, are coming from China now. We've seen Japan embrace the TCFD, as a priority in the stewardship efforts that its investors are making with Japanese companies. And of course we've seen European companies take a lead on this historically because of the European Emissions Trading System. So, so I think what's been exciting has been the way in which this is no longer perhaps just something that you're seeing in California or in New York and Europe, but really something that we're seeing embraced in emerging economies as a way to transition to a form of more sustainable growth; and where there's been demand from basically end investors in places like Japan to build portfolios that are robust towards those opportunity sets.

Anu: I'm actually curious about municipalities and the muni bond market, who issue bonds maybe as they're considering infrastructure projects that might protect themselves from more frequent and intense weather events. So I'm thinking of, you know, a coastal town that might need to build a sea wall, or, another area that needs to protect from wildfires. How do we think about climate change in the municipal bond market and what risks might need to be considered?

Jonathan: Yeah, this is a really interesting space because if you're a company, and you've got a facility somewhere, in many cases, if it's going to be exposed to physical climate risk over time, you can decide to literally pick it up and move it or to build an alternative backup facility somewhere else or just to evolve your business model to deal with it. If you're the city of Miami, you can't move that to Arizona. You're going to be in Miami, in Florida. So those municipal bonds in the U.S. are funded usually by general tax revenues or sometimes, the charges and fees associated with toll roads or specific projects. And so the resilience of those revenues is ultimately very important to the

long-run ability to repay principal and interest for those bonds. So you know, we've looked at this with the expertise of our insurance-linked securities team; who have a number of trained climate scientists as part of the team; and modeled out which areas of the United States and which municipalities are at higher risk, from a climate change perspective; and one of the things that's disappointing, I have to say – is when you read the credit rating agency's, work; you know, the S&Ps and the Moody's and so on, of this world. While they're taking steps in the right direction, you still won't see climate change covered in their covering of many of the smaller towns and cities in states like Florida, who are clearly at risk from climate change. They'll cover it for Miami and maybe for the state as a whole; but it's not trickling down in terms of the analysis. So we think that's potentially leading to a mispricing in the market that investors need to be aware of as they think about what they want to be exposed to in their portfolio.

Anu: We recently talked to Michael Recce about Big Data. I'm just curious if you've incorporated any credit card data or machine learning techniques, et cetera, with regards to the way that we assess climate change risks.

Jonathan: You know this is one of those things that's quite interesting; because you know, I was saying before that you know we don't always get the disclosure from companies that we want in order to assess how their business model is affected by climate change; and so using Big Data is a way to sometimes get a view on that without relying on corporate disclosure. So one example is using credit card data. So we have access to anonymized data on spending patterns in certain parts of the world and we decided to look at this in collaboration with Michael and the Big Data team around what happens during and after and before hurricanes hit. So if you go back to the the hurricanes that sadly hit Florida and Texas in the last few years in the United States, obviously most companies close during a hurricane, right; that's not surprising. But which companies actually see that revenue recovered through additional sales; either in advance or after a hurricane hits? And so companies like Home Depot, which is a provider of home hardware; thinking about people stocking up ahead of a hurricane and then obviously doing repairs afterwards; they actually see significant bumps in revenue before and after hurricanes. Compare that to a company like Starbucks, who – as you won't be surprised to hear, people are not loading up on Frappuccino's in in anticipation of a hurricane; but they are then seeing spending bumps in the period afterwards. But then there are other companies who really do suffer; and some more discretionary spending—Zale's, a jewelry store, just doesn't recover. So this is interesting because often we think about hurricanes and extreme weather in terms of the physical damage and the effect on the insurance industry, right; so you know, what's the damage to property; but actually these revenue losses or gains are another angle to look at the resilience of business models and part of how we can use alternative data sets to get a more holistic understanding of climate resilience.

Anu: Yeah, it's quite interesting, actually, to think about which sectors that maybe don't seem to be immediately related to a disaster event or intense weather event to see how those are affected – very interesting. I would love just to hear the big takeaways that you think listeners should walk away remembering from today's discussion.

Jonathan: Well the first thing is that this is actually, quite complicated; but if you've got the right analytical capability in there, and you're looking forwards – not backwards, you're looking at how business models are positioned and how resilient they're going to be, you can position a portfolio to be two-degree aligned. The second thing is that you need to be engaged. It's absolutely essential that we as investors are engaged with management teams, engaged with boards; encouraging companies and politicians to take the actions that are necessary to take us on a path to a low-carbon transition and future. And if you do those two things—position the portfolio, stay engaged—you're actually able to be part of the solution.

Anu: Great. Well I think you made a very clear case that climate change is a material risk that investors certainly need to pay attention to today. I think it will be quite interesting to see whether investors are indeed able to drive their capital towards these long-term solutions with climate change risk in mind. So just want to thank you so much for joining me today for this discussion.

Jonathan: Thank you.

Anu: Many thanks for listening to today's show about climate change. To keep apprised of future episodes, please subscribe via Apple Podcast or Google Play, or visit our website at www.nb.com/podcasts, where you can find previous episodes as well as information about our firm and offerings.

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