Perspectives Podcast

“The Physical Risks of Reshoring”

Transcript, 2 May, 2025

Mike Disabato (00:00):
What's up everyone? Welcome to sustainability. Now, you may notice that we have a new name, but it's the same host. I'm Mike Disabato, and we're going to talk about how the environment, our society and corporate governance affects and are affected by our economy. This week we discuss what sort of climate related physical risks companies may face if they actually decide to reshore their manufacturing facilities to the us. Thanks as always for joining us. Stay tuned. It's hard to predict what the lasting impact of the Trump administration's tariffs are going to be. Even now, exceptions are being proffered to wary industries. Changes are being contemplated. Just this week on April 29th, it was announced that major car manufacturers would be exempted for now and in some ways from the 25% tariff on imported car parts and separate 25% tariff on all imports of foreign made cars. So everything is kind of up in the air, but the purported goal of these tariffs as claimed by the Trump administration, are to try and reshore American manufacturing.
(01:08):
It's a goal in a way that the Biden administration also had with the CHIPS Act, which aimed to boost the domestic US semiconductor manufacturing industry and research and development through federal funding and incentives and all that. So you have two administrations here with very different strategies, but sort of the same goal reshore aspects of US manufacturing. So on today's episode, we're going to assume that happens. Let's assume that three industries are effectively reshored, the semiconductor industry, the household goods industry, and the textile industry. And what we want to assess today is what sort of physical risks will those industries face if they take the current locations of their manufacturing facilities and expand them. I'm talking physical risks like water scarcity, heat waves, flooding, hailstorms, tornadoes, all those extreme weather events we are seeing more and more of due to climate change. And so to do that, I have with me today Katie Toi, who not only holds a PhD in something that's called hydro meteorological hazards, but also helps run our physical risk team. So let's start off with the semiconductor industry, A massively important industry and one that has already sort of started shoring already due to the CHIPS act that I mentioned. So I ask Katie to look at the current sites of semiconductor manufacturing in the US and see what physical risks they may face as they expand further to deal with this increase in domestic demand. And she looked and she found that this highly water intensive industrial process was actually being done in many areas with high levels of water scarcity.

Katie Towey (02:41):
When we talk about water scarcity, we're referring to the number of days per year when water demand exceeds that of water supply by 60% or more. And of these assets, 34% have a hazard percentile score of 75 or higher. And this is on a scale from zero to 100, meaning they have very high exposure to water scarcity. And to put that into better context, what that score actually means, this will correspond roughly to about 215 days per year when the water demand exceeds the water supply by 60% or more. And these sites in the US are located in states where there is high exposure to water s scarcity. So

California and New Jersey, for example, have a hot hazard percentile score of 86 and 83 respectively for water scarcity. And these are two of the four states where we have the most assets in our database within the semiconductor industry. So if you're looking to build new sites in these regions, perhaps it's good to consider doing so in regions that already don't have very high exposure to water scarcity.

Mike Disabato (04:02):
So the lesson there, and I could just summarize it because it's pretty well elucidated by Katie, but if you're putting capital into a company, it would be good to know if said company is building its resource dependent facilities in an area with a lack of said resources, which seems obvious, but in the US decisions of where to build often consider other things like labor availability and tax benefits and land availability and already existing infrastructure already being in that area. Take the Taiwanese semiconductor manufacturing company and Intel. Both companies are building these massive semiconductor manufacturing facilities that require a massive amount of what's called ultrapure water. And both are actually being built in Arizona, which isn't really known for its ample water supply. But Arizona's commerce Department has been working hard to ensure its state is the one that is home to America's growing semiconductor business. So it was selected even though when you drill into the location of those sites, you start to see some concerning figures.

Katie Towey (05:01):
So where TSMC and Intel are looking to build these manufacturing facilities, we can zoom in and look at a more granular analysis for these cities that they're planning to open these facilities in. So where Intel's building its manufacturing facility is in Chandler, Arizona, and TSMC is looking to build theirs in Phoenix, Arizona. And these two cities are going to have a different level of exposure to water scarcity than other areas within the state. Chandler, for example, has an average hazard percentile score of 71 for water scarcity, whereas Phoenix has a score of 57. So Chandler is actually the much higher exposed city than Phoenix in terms of water demand relative to the available water supply. So taking that into consideration, that can help also put into context what is the impact going to be on the greater community as well.

Mike Disabato (05:57):
And that last part, Katie said, is important because communities can quickly turn on a company if something as basic and vital as water rights start to come into play. And Arizona is already in a bit of a custody battle with its surrounding states on who gets rights to the Colorado River, which means one could argue by osmosis properties, TMC and Intel are in that same custody battle. And if that goes wrong, you could have build cancellations and major write downs that both hit the companies in the short term, but also in the long term its ability to expand. You need water for these fab facilities that TSMC and Intel are building. So if Arizona loses a lot of its water rights, things can get bad and don't always expect companies to always be aware of this. Like I said, builds aren't always the most rational thing.
(06:46):
And I actually have a concrete example of this, but it's just south of the border because a couple years ago, constellation, which owns Modelo, Pacifico and Corona found itself in a windfall moment when Anheuser-Busch had a massive drop in sails and Constellation wanted to ramp up its production. But the problem was it only had two breweries in northern Mexico in drought ridden locations. And so it wanted to build a third in a town called Mexicali, which is near the US border, and they began construction and all of a sudden a fight ensued with a nearby government that said Constellation was going to be diverting water from its farmers local opposition swell. It led to community backlash, which forced constellation to cancel the build, take a 6.5 million US dollar, write down and lose some of the

advantage that they had in new demand. Now, if you were paying attention, there was a signal of trouble from the start that investors might've seen if they looked at constellation's, water efficiency policies and saw that A, the company was way more water intensive than its competitors, and B, it didn't even have a water efficiency policy on record.

(07:58):

So the writing was kind of on the wall. If you look in the right place. Now, TSMC and Intel are different. They have a really robust water intensity strategy and they are really water efficient compared to their competitors of course. But water availability is water availability. You can't get around that. The tide turns on Arizona. And when it comes to the Colorado River, there's a chance things get messy or maybe they won't. To be honest, semiconductors are really important. They're really expensive, they're really profitable. Maybe these companies can absorb the higher cost of doing business in a water stressed area. It's a possibility. But what about the textile industry and the household goods industry? Two industries who could see manufacturing get reshored one day? Sure. Textiles and household goods are bulkier than semiconductors, so they're harder to ship and they're more expensive to ship. They're also less specialized, so they cannot command high margins. So any increase in costs due to delays or physical damage caused by climate change can be fatal for a company. So let's look at where textiles and household goods are currently being manufactured and what would happen if they expanded their current sites in terms of physical risks that those facilities would face and what they might do to deal with those physical risks.

Katie Towey (09:09):

So for both of these industries, there's a similar story to tell. A lot of these locations are in similar states where semiconductors are operating. So this is California, New Jersey, Texas, but also states across the heart of the country in the center of the country, Missouri, Ohio, and other states. So a lot of these facilities are also operating in areas where it's much colder and Rainier. So in our more northern areas. And so the types of hazards that are most relevant for the facilities in these regions and in this industry are related to chronic hazards. So they actually have a large percentage of locations that have high exposure to extreme precipitation and extreme snowfall. And so the impact of that is that thinking about the transport of these goods across the country, they need to go across interstate roads or railways or even flight routes. So if there's a snowstorm that happens where there's an intense rainfall event that can impact the ability to transport these goods in a timely manner.

(10:25):

The other side is that they also have high exposure to more acute hazards. So severe weather events, we're focusing on tornadoes and hail here. So with a lot of these facilities in the center of the country or the eastern two thirds of the country, there's high exposure in these regions to both tornadoes and hailstorms. And so that can impact the actual buildings themselves. So if there's any disruption from a tornado coming through or a hailstorm damaging the building, then that can have an impact on the production of these goods, and that impacts the downstream effects before you can even think about transporting those goods to where they need to go. So there are two sides to that coin where you're concerned about direct damage to the asset from these tornadoes and hailstorms, but also then disruption to the business operations if there are extreme snowfall or extreme precipitation events that can then impact the transport of those goods.

Mike Disabato (11:21):

What Katie mentioned has some very concrete examples in our recent history where natural events exacerbated by climate change caused a shutdown of major manufacturing hubs, which then had impacts throughout the United States. Now of course, we've seen major impacts to the supply chain due to covid, but the pandemic was always going to have an end to it. Extreme weather events are a larger issue that we're going to have to face year after year after year, ad nausea.

Katie Towey (11:46):
Yeah, I mean, think about all the recent extreme weather events that have happened even just this year. The wildfires in LA and going back to late last year when hurricanes Helene and Milton impacted the us, the scope was different. LA wildfires impacted a lot of residential buildings, some private companies maybe that have operations in these more suburban or rural areas, but then you have Hurricane Helene also impacting residential communities, but also businesses. And thinking back to Hurricane Helene, one of the most prominent examples of disruption to production at a facility was that from Baxter International. They had a manufacturing facility outside the Asheville, North Carolina area that was responsible for producing 60% of the US' IV bag supply and they had to shut down operations due to flooding that occurred at that facility, and they were not able to resume full production until late January of this year.
(12:48):
And this event happened in late September of 2024. So that's almost a four month period where it took them time to resume full production at that one facility, which was very important in generating these goods that need to be distributed to hospitals and other healthcare facilities. So being able to have a good understanding of the exposure of the facilities of companies helps you have better context if an extreme weather event were to occur, whether that be a flood, a wildfire, a hurricane, or what have you, that they know what their level of exposure is and then what the corresponding impact could be in terms of damage to the physical asset, but also interruption to that company's business operations.

Mike Disabato (13:36):
And I think there's one aspect here that's important to emphasize. A shortage of IV bags means that people could die, which is not to downplay what can happen to a community that loses a business because of supply chain disruptions, but I just want to put everything into perspective there. There's also another problem that I didn't really get into with this whole reshoring in certain areas susceptible to physical risks question, it's the insurance equation. The return from a build might not make sense if the insurance industry says that the region you're building in is so dangerous when it comes to natural weather events that it's insurable at normal rates, the return just might not be there. So you would have to go further afield from your current infrastructure and that can raise costs and cause a lot of unknowns. One thing is for certain though, regardless of what does end up happening regarding reshoring in the us, physical risks are here to stay. And adapting to those physical risks requires disclosure and an understanding of your exposure. And that's it for the week. I want to thank Katie for talking to me about the news with the sustainability twist, and I want to thank you so much for listening. Of course, if you like what you heard, don't forget to rate and review us and subscribe if you want to hear sustainability now each week. Thanks again and talk to you soon.

Speaker 3 (15:07):

trading strategy. Further, none of the information is intended to constitute investment advice or recommendation to make or refrain from making any kind of investment decision and may not be relied on As such, the information provided here is as is and the use of the information assumes the entire risk of any use it may make or permit to be made of the information. Thank you.

About MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process. To learn more, please visit **www.msci.com**.
