

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 sales 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 nauseam.

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](#)):

The M-S-C-I-E-S-G Research podcast is provided by MSCI, Inc. Subsidiary M-S-C-I-E-S-G research, LLCA registered Investment Advisor and the Investment Advisors Act of 1940. And this recording and data mentioned herein has not been submitted to nor received approval from the United States Securities and Exchange Commission or any other regulatory body. The analysis discussed should not be taken as an indication or guarantee of any future performance analysis, forecast, or prediction. Information contained in this recording is not for reproduction in whole or in part without prior written permission from M-S-C-I-E-S-G research. None of the discussion or analysis put forth in this recording constitutes an offer to buy or sell or promotional recommendation of any security financial instrument or product or

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.

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or disseminated in whole or in part without prior written permission from MSCI. All rights in the Information are reserved by MSCI and/or its Information Providers.

The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.

The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.

Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors.

Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.

The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons.

None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.

It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments.

Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. The calculation of indexes and index returns may deviate from the stated methodology. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance.

The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy.

Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice.

Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com.

MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.'s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.'s company filings on the Investor Relations section of msci.com.

MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI's products or services are not a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such, provided that applicable products or services from MSCI ESG Research may constitute investment advice. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body. MSCI ESG and climate ratings, research and data are produced by MSCI ESG Research LLC, a subsidiary of MSCI Inc. MSCI ESG Indexes, Analytics and Real Estate are products of MSCI Inc. that utilize information from MSCI ESG Research LLC. MSCI Indexes are administered by MSCI Limited (UK).

Please note that the issuers mentioned in MSCI ESG Research materials sometimes have commercial relationships with MSCI ESG Research and/or MSCI Inc. (collectively, "MSCI") and that these relationships create potential conflicts of interest. In some cases, the issuers or their affiliates purchase research or other products or services from one or more MSCI affiliates. In other cases, MSCI ESG Research rates financial products such as mutual funds or ETFs that are managed by MSCI's clients or their affiliates, or are based on MSCI Inc. Indexes. In addition, constituents in MSCI Inc. equity indexes include companies that subscribe to MSCI products or services. In some cases, MSCI clients pay fees based in whole or part on the assets they manage. MSCI ESG Research has taken a number of steps to mitigate potential conflicts of interest and safeguard the integrity and independence of its research and ratings. More information about these conflict mitigation measures is available in our Form ADV, available at <https://adviserinfo.sec.gov/firm/summary/169222>.

Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P Global Market Intelligence. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and S&P Global Market Intelligence.

MIFID2/MIFIR notice: MSCI ESG Research LLC does not distribute or act as an intermediary for financial instruments or structured deposits, nor does it deal on its own account, provide execution services for others or manage client accounts. No MSCI ESG Research product or service supports, promotes or is intended to support or promote any such activity. MSCI ESG Research is an independent provider of ESG data.

Privacy notice: For information about how MSCI collects and uses personal data, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>.