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SARAH: Financial markets are seen as being fairly reliable and accurate when it comes to evaluating risk. But thanks to climate change, that might no longer be true, at least when it comes to big oil, insurance companies, and property values. According to Jeff Colgan, Political Scientist at the Watson Institute, market assumptions about the value of these three asset classes can't be all right at the same time and here's why that matters.

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Jeff, thank you so much for coming in to talk to us today.

JEFF COLGAN: My pleasure, Sarah. Thanks so much for having me on.

SARAH: I'm fascinated by this paper that you just published in global policy. Very nervous about it and also fascinated. Tell us a little bit about this climate value paradox and the three classes of assets that you talk about and why they can't all be right.

JEFF COLGAN: I started thinking about this issue because economists and policymakers, even most political scientists, which is what I am, like to think of the market as kind of a fairly rational beast in that governments can respond to markets as sending important and informative signals about the way the world is. But in the case of climate change, I'm just not sure that that's true.

And I got thinking in particular, as you said, about three asset classes. And those are fossil fuels, so think of big oil and coal; insurance companies; and real estate, particularly coastal real estate. So those three assets I think, at best, the market is valuing two out of those three correctly. It can't be more than two. It can't be all three. It has to be wrong.

SARAH: So break it down. Tell us why.

JEFF COLGAN: Absolutely. And scientists are very clear about the dangers that we're facing as greenhouse gas emissions pour into our atmosphere. So one possibility is the world that big oil imagines for us-- Exxon Mobil and others have been very clear about saying we see a future where there is continued oil demand at roughly the levels that we're consuming today.

SARAH: Even as they acknowledged that climate change might be real.

JEFF COLGAN: That's correct. And yet they see a world in which we still want to drive cars and they might be right.

SARAH: And their stocks are healthy.

JEFF COLGAN: Yeah, exactly. Their stock prices, their financial valuations on the market, reflect that where they see that's the future of our world is where we're going to continue consuming oil at that rate. And so if they're right, then that's got implications for not just the environment but also these two other sectors-- insurance companies and coastal real estate.

So insurance companies say OK, climate change is really bad and it's got real risks for us. We're insuring against flood, against hurricanes, against other catastrophes. And if climate change is coming, those things are going to get much worse.

And yet they also see a strong financial future for themselves. Of course, part of that might be spin but largely what they see is OK, well, if those climate risks get serious, we will first change our prices and second just stop offering products that aren't profitable.

SARAH: So like flooding?

JEFF COLGAN: So like flooding insurance. And already flooding insurance is not a standard part of home insurance for many, many parts of the country. Various insurance companies, I suspect, are going to just stop offering that and not making it an option at all.

SARAH: So that kind of obliges government to step in, right? Which is also our taxpayers money.

JEFF COLGAN: Exactly. Right? And so when a hurricane, like Hurricane Harvey, strikes in Texas or Houston, there's not enough flood insurance. So then there's not enough private insurers paying out and that creates demand for government funds. Government to the rescue and ultimately, that's taxpayer money. And so that's a real problem for us.

And so that really creates the third problem, right? The risk for the third asset class, which is coastal real estate. If we're in a world where we're going to see a lot of climate change and insurance companies have left the market, well then the property values in say Miami, in California, in New York City, lower Manhattan, all of those they just can't make sense in this world, right? Where they're still being valued very highly but they're going to get flooded.

SARAH: I'm just going to quote you quoting the Union of Concerned Scientists, "more than 300,000 of today's coastal homes with a collective market value of about $117.5 billion today are at risk of chronic inundation in 2045. A time frame that falls within the lifespan of a 30 year mortgage issued today."

JEFF COLGAN: Yeah.

SARAH: That's chilling.

JEFF COLGAN: And the definition of chronic inundation there is what really adds the twist the knife, right? Where they're seeing, on average, at least 26 serious floods per year, which is one every two weeks on average. And that's the kind of risk that homeowners in many states, not just Texas but also Maryland, New York, California, all along the eastern seaboard, that's what they're facing.

SARAH: Keep telling us about this wobbly triangle. If big oil is right, the other two are in trouble and if big oil's wrong, well--

JEFF COLGAN: Right. So it's possible that the insurance companies and coastal real estate are right and we're going to actually make a real strong move on climate change policy. And that would mean, of course, that big oil is wrong. That the only way we can get there is really to reduce our greenhouse gas emissions. And that means that the business model of big oil has to be wrong.

SARAH: And reduce them quite drastically and we haven't even been able to make that much progress so far.

JEFF COLGAN: Yeah unfortunately, the last few years have been really bad news on a number of fronts for climate change. The politics are coming clear that say, last year in 2017, global emissions continued to rise despite the Paris Agreement. Despite 20 years-- 30 years really of efforts to try to slow global emissions we're still going up.

And even to make the modest goals of the Paris Agreement, we need to remove something like a trillion tons of carbon dioxide from the environment. So we're not just talking about decreasing the rate at which we're emitting, we're also talking about actually removing the stuff that's already there.

SARAH: Do those technologies exist?

JEFF COLGAN: Not really. They exist in an engineering sense but not a commercial sense. They're so expensive to run that they're not viable at a mass scale whatsoever. And so we really are looking at climate adaptation as much as we're looking at climate mitigation, maybe more so.

SARAH: So lower Manhattan--

JEFF COLGAN: Yeah, lower Manhattan need some seawalls and it's a matter of time before that happens. And that's going to be true of Boston and you pick your favorite US city and European city and what have you.

SARAH: Yeah. Is there a configuration of right and wrong assumptions that is optimal?

JEFF COLGAN: Optimal in what sense, I guess is the question. My sense is that probably what's happening is that we're misvaluing all three asset classes. That there are real risks to big oils business model but they're probably closest to accurate because unfortunately, I take a very pessimistic view of how much we're going to really change our consumption on oil.

Insurance companies and coastal real estate are probably in even more trouble. And in part, that's because corporations are taking this risk seriously in the sense that they're thinking about how it affects their bottom line. Whereas most homeowners, you and I, we have the problems of getting the kids to school and every other part of life and are maybe not thinking necessarily about the risks that our mortgage faces in 20 years time.

SARAH: So who should be most worried-- companies, individuals?

JEFF COLGAN: Well, I think taxpayers should be most worried in the sense that voters really need to see that we have what we might call an unfunded liability. Right, climate is creating this massive financial risk to our society and ultimately, taxpayers are the pairs of last resort, the people where the liability is going to land.

And that means that we can pay it then, in the future, or we could start taking actions now and face a much smaller risk down the road. Of course, that requires foresight and that's something that voters are not very good at if we're really honest--

SARAH: Seeing past their own interests. But you do think that if citizens around the world were sort of mobilized and alarmed enough, that laws could be put in place that could sort of curb--

JEFF COLGAN: Yeah, I think there are things that we can do and we are sort of on one hand past the point at which our climate is not going to change. It is going to change. That's going to happen. But there are things that we can do to avoid the worst case scenarios and we should be doing them right now.

We should be putting money aside, making public funds available for research and development on those technologies that we're going to need to remove carbon and other greenhouse gases from the atmosphere. So that's one thing we can do.

We could also be looking at the way the Chinese are making a heavy push into renewables and wind and solar and making a big bet on that technology and trying to get a competitive advantage in the global marketplace. While the United States is doing just the opposite. We're doubling down on fossil fuels and hoping that that's going to be kind of where we have our competitive advantage. And yet that has the reality of pushing the climate problem into an even darker spot.

SARAH: Mm-hmm So the hope is exercising our right to vote and voting for the candidates who are all about renewables and--

JEFF COLGAN: I think that's right. And if there is a silver lining here, I think we are actually starting to see a change in the Republican Party. And I hate to put it in such partisan terms, but the reality is that the Republican Party is much more strongly anti-climate policy than the Democrats are.

SARAH: And where are you seeing this change?

JEFF COLGAN: So we are starting to see a Congressman in Florida, for instance, putting forward a proposal for a carbon tax. Now it's a proposal that is very problematic. I don't want to endorse it. I don't want to go to far with it.

But the fact that Republicans are starting to say, look, this is coming. This is really going to affect Florida and other states where Republicans are in power. I think it's a sort of long shot but I actually do start to think that as the reality of the climate impacts start to happen, that the Republican Party can ignore this issue for only so long.

SARAH: I hope you're right.

JEFF COLGAN: I hope so too.

SARAH: Thanks for explaining that. That was fascinating.

JEFF COLGAN: My pleasure. Thanks so much again for having me.

SARAH: Thanks for coming in.

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