TRANSCRIPT
Environmental Insights
Guest: Rebecca Henderson
Record Date: March 30, 2020
Posting Date: April 8, 2020

Rebecca Henderson: This emergency is making it very clear that the stability of the entire community is critical to the success of business. I think the emergency is also highlighting that one needs a strong, effective federal government to deal with problems like this, and I think both of those insights could conceivably translate into business pressure for coherent climate policy in ways that could be very helpful.

Robert Stavins: Welcome to Environmental Insights, a podcast from the Harvard Environmental Economics Program. I'm your host, Rob Stavins, a professor here at the Harvard Kennedy School and director of the Environmental Economics Program. Today, we're really very fortunate to have with us Rebecca Henderson, the John and Natty McArthur University Professor at Harvard. She makes her home at Harvard Business School where she was the co-director of the Business and Environment Initiative. She's also a research fellow of the National Bureau of Economic Research, and I'm very pleased to say that Rebecca is also a faculty fellow of the Harvard Environmental Economics Program. Welcome, Rebecca.

Rebecca Henderson: Rob, thank you very much. I'm delighted to be here.

Robert Stavins: So before we talk about your current thinking about energy, environment, climate change and the business world, let's go back to how you came to be where you are and where you've been. When I say go back, I mean go way back. Where did you grow up?

Rebecca Henderson: I grew up in London, England.

Robert Stavins: You went to primary school and what we here call high school in England?

Rebecca Henderson: I did. I first came to the States when I was 17 when I decided to go to MIT.

Robert Stavins: I see. So you enrolled at MIT. Am I right that your bachelor's degree is in mechanical engineering?

Rebecca Henderson: It is. I was fascinated by how the world works. I wanted to understand machines and understand what went on inside factories, and I loved being at MIT. It was a ... I think it still is, but at the time it was a wild and crazy place. I think one of the only true meritocracies I've ever seen. At MIT, they didn't care if you had tentacles growing out of your head and purple skin. If you were smart and engaged, that was all that mattered. It was really, really fun.

Robert Stavins: Then what took you from mechanical engineering to economics?

Rebecca Henderson: When I was in high school, I thought that it was engineers that made the world work. But as I got older and as I did engineering myself, I realized it wasn't really the engineers that made the world work. It was the business people that ran things. I became incredibly interested in who and how makes the decisions around technology deployment and technology change.

Robert Stavins: So did you work between your bachelor's degree and then starting graduate school at Harvard?

Rebecca Henderson: I did. After I finished my undergraduate degree, I went to work for McKinsey in London and, at that time and in that place, that meant closing plants in Northern England. So I became deeply intrigued with why it was that firms that had been around for over 100 years were having so much difficulty responding to the challenge of the '80s. There was one client we worked with where we had to literally smuggle the computers out in the middle of the night because the workforce was so upset about the closing of the business. I thought, how did they get to this place? Couldn't they see this change coming? So that was a really formative experience for me.

Robert Stavins: Then from there you indeed went to Harvard. Is that right, or is there something else in between?

Rebecca Henderson: I went to Harvard to do an MBA. I thought I wanted to be CEO of IBM and I spent about two months doing the MBA, and I thought, you know, this is not quite right. I'm more interested in how things run than I am in actually running things. I went to the head of my section at Harvard and I said, "This isn't quite working for me." I still remember, his name was Kim Clark and he became the Dean of the Harvard Business School.

Robert Stavins: Oh, of course.

Rebecca Henderson: He looked at me and he said, "Rebecca, into the PhD program," and I switched into the PhD in business economics.

Robert Stavins: Then who were your major advisers in the PhD program?

Rebecca Henderson: So Kim became, in fact, my major advisor. He had just finished a study of product development in the world automobile industry using incredibly detailed data from inside the firms and comparing the Japanese and American automotive companies. He was one of the researchers that established how much more productive Japanese automakers were using this incredibly detailed data. I was fascinated both because the question I was really interested in was, why wasn't General Motors responding? Why did it take them so long to imitate Toyota? And because we were using this very on the ground detailed data. My other advisor was Dick Caves, who was fantastic, fantastic advisor. Couldn't have been more helpful or more supportive.

Robert Stavins: Yeah, I remember his office mainly because he had what I think was a Lichtenstein original painting directly behind him. So while you are talking with him, you would be looking at that painting.

Rebecca Henderson: I don't think I knew enough about art to recognize it. Mostly, I remember ... Mostly at the time, I didn't know enough. Mostly, I remember I'd bring him ideas that in retrospect were clearly crazy and he would look at me and say, "That's a very interesting idea, Rebecca. Have you read paper X, Y, Z?" My third advisor was Mike Whinston, who at the time was a junior professor. And he was also incredibly open minded. I think one of the interesting things about the business economics program is you have both the business school advisor and the economics advisor, and they try and find common ground, and that was fun. That was a great committee.

Robert Stavins: Then your first job out of graduate school, was that as an assistant professor at MIT Sloan?

Rebecca Henderson: It was.

Robert Stavins: So that's a wonderful position to step into. Then you spent how many years at MIT?

Rebecca Henderson: I spent 21 years at MIT in the Strategy Group. Yeah.

Robert Stavins: Now, then how was it that you then moved to Harvard Business School?

Rebecca Henderson: So there were really two things that went into that move. I'd started teaching courses on business and sustainability about five years before Harvard came to me. The Business School came to me and said, “Rebecca, we'd really love it if you came to the Business School.” The Dean at the time who was a Jay Light, looked at me and I will never forget this. He said, "Rebecca, HBS missed the financial crisis. It is your job to make sure we don't miss the environmental crisis." They gave me carte blanche. Together with Forest Reinhardt, we were able to set up the Business and Environment Initiative to start teaching courses in the area. It was just an opportunity I couldn't turn down. I'd loved being at MIT, but it was fun to be somewhere new.

Robert Stavins: So let me follow up on that because there's so much we could talk about. But before we get to your own research and your comments on the current state of energy, environment, and climate change activities in the private sector, I'd love to hear more about the world of business schools, and in particular your description, and if possible your assessment of the state of environmental research and teaching in the world of business schools. In particular, if you could comment on how it's changed since you began in 1988, when you began at a MIT Sloan, which I think actually, by the way, was the same year I joined the faculty at the Harvard Kennedy School. But a lot's happened in the meantime, particularly I think in the business school world, but maybe I'm wrong.

Rebecca Henderson: No, I think that's exactly right. A great deal has happened. So when I joined the faculty in 1988, I cannot remember anything on energy or environment. About 10 years after that, I want to say Jake Jacoby started teaching a course on climate change and energy environment, but he was not in the mainstream of the faculty. He was off of the MIT Climate Center and it was very interesting. We had long talks about this. He had trouble getting enrollment because he said, if you put climate change in the title of the course, employers would look at MIT Sloan's graduate and go, "Well what are you fussing about climate change? What were you some kind of weird greenie?" So he had trouble getting in enrollment, which I thought was fascinating. We started the first business and sustainability course in 1995, and I did that with John Sterman and a couple of other faculty members, and it was considered very niche, a little odd to be focused on those issues.

Indeed, when I first came to Harvard, I got the sense, and I'm paraphrasing, but people would say, "Well, we loved your earlier research Rebecca, but this new thing, it's okay to have an enthusiasm, but that's really a little eccentric what you're doing here." When I first started teaching the course that became Reimagining Capitalism, I had 28 students in the room. Forest Reinhardt was teaching a course on energy that was mostly focused on the fossil fuel sector. He did a few classes on renewable energy, but not very much. We had a very successful class on agriculture and a big agricultural seminar. Again, there were a few cases that looked at climate change and the implications for agriculture, but it was not at all a mainstream issue. What I've seen in the last two, three, four years is that changing dramatically.

The students have really shifted. My enrollment went from 28 students to over 300, which was nearly a third of the second year MBA class. Students deeply interested in the question of climate change and in the problem of public goods more generally. But we've also had an explosion in the energy club, for example, instead of just having ... So I think enrollment in the energy cup has doubled and we have two additional clubs, one on sustainable business, and I forget what they called the other. But now people are fighting over who gets to do climate change and more people doing research.

We have now more than 300 cases in the Business and Environment Initiative, looking at business responding to environmental problems and talking through how it's possible to build successful business models to make really large amounts of money and make a difference against some of these larger questions. A significant fraction of those cases are about climate change. I think what's happened at Harvard, I'd love to say we were a leader, but we're not a leader. The same progression has happened at many of the other business schools.

Robert Stavins: I got the sense from when you first started talking about that a moment ago with that, it sounded like it was demand driven, that it was student demand that has led to this. Is that valid or is it from both sides that for the top down

leadership and business schools, faculty at business schools have been more interested in environment?

Rebecca Henderson: It's definitely both sides. It's both supply and demand. The students are much more interested, but there are more and more faculty who are interested in moving their research in this direction. So for example, faculty in operations who are looking at how do you build low carbon supply chains or looking at what's called the circular economy and how do we recycle in a cost effective way, or faculty in marketing very engaged with the question of will consumers pay more for something that's labeled as climate friendly or green friendly, and under what circumstances? Faculty in finance, one of my closest colleagues is actually in accounting, and there's been an explosion of work in accounting looking at whether and how firms should report their carbon emissions and why investors might want them to do that. So you're really seeing research right across the departments at the school. It's very exciting.

Robert Stavins: Now I want to turn to your research, but before we do, I'm curious about one other thing regarding teaching because many of the people who actually are subscribing to this podcast series are academics. I don't know if it's a majority, but there are quite a few academics who subscribe, and any academic right now, because of the coronavirus, is facing the challenges of having transitioned from classroom teaching to remote teaching. But for someone like myself who teaches with lecture method with some slides, with some math on the board and Q&A, it's one thing, but from the moment that I heard that we were going to remote teaching, I've been thinking about Harvard Business School. I've been wondering how people who were using and brilliantly using, from what I've seen it, case methods, Socratic method to teach. How have you all made this transition? Can you say something about that?

Rebecca Henderson: Oh sure. Of course, I had exactly the same reaction that you did when I learned we were going to go virtual is like, “Oh my goodness, how am I going to do a case method discussion with 92 students?”

Robert Stavins: Yeah.

Rebecca Henderson: The answer is with a lot of work. We're continuing to teach using the case method. We mix it up more than we would in the physical classroom. So we use breakout groups. We use slides a little bit more than we did before to signpost the questions for discussion and summarize where we've been. But no, in a physical classroom, I would typically call on roughly 60 people out of 92 in every class, and in my virtual classroom I'm getting up to about 45. It really helps that the students understand how to do case method. They understand how to make a short concrete point. But no, they are jumping in and engaging, and the overwhelming response is much better than I had feared. That's what the students are saying. All things considered, this is pretty good. It's not the real classroom, but it's not a disaster. I think that's a victory.

Robert Stavins: Yeah, no, that's a great victory. I would say the same thing, that it's a lot better than I anticipated it would be. Certainly the second class was better than the first and the third better than the second.

Rebecca Henderson: Oh yes.

Robert Stavins: So that's certainly happening. I'd love to turn to your research, and I'm going to ask you a question that perhaps is a little bit like asking someone to name their favorite child, which I know is not a fair question. But if you were going to identify one publication of yours that you're most proud of, what would it be?

Rebecca Henderson: The paper I'm proudest of is a paper called "Underinvestment and Incompetence in the Face of Radical Change." It was one of my dissertation papers, so it's an old paper. The paper tries to show that firms have difficulty navigating technological change both because yes, sometimes they underinvest for strategic reasons, but more importantly because some firms are badly run. In particular, incumbents have a consistently lower ability to take advantage of new innovations, the new entrance. Their research productivity is lower. They consistently find it more difficult. The reason I'm proud of this paper is, firstly I think it's true. This is the phenomena I've really based my career on, trying to understand what large organizations can and cannot do and what affects that. But also because I have submitted the paper to the Rand Journal of Economics and got back a letter from the editor saying, "Dear Rebecca, you have written a paper about how the moon is made of green cheese and economists have too little considered the motions of cheesy planetoids."

The very idea that firms could have fundamentally heterogeneous organizational capability was such a new one to the economics profession. I'm really proud that they published this paper. It's been well referenced, and I think it was one of the contributors to something that's really happened in economics over the last 20 years, which is the idea that some firms are significantly more productive and significantly better run, which is now much more accepted given the work of Nicholas Bloom and Raffaella Sadun and their co-authors, that that's not a sort of commonplace idea. But when I wrote that paper, it was not. So that's the paper I'm proudest of.

Robert Stavins: Given the amount of time that you've spent thinking about, studying, researching, writing, and teaching about technology innovation and technological change and the whole process of innovation, you must have particular insights that you might be willing to share with us, I hope, regarding your reactions to the current situation that we're in with the coronavirus pandemic and COVID-19 incidents. Can you say anything about that?

Rebecca Henderson: So the first thing that leaps out at me from the current moment is something that I've seen in my research but never at this scale, which is when organizations decide they must change, they can change. The speed with which so many private sector organizations are responding to the crisis are most obviously, as many people have commented, are moving huge sections of their workforce to

work from home. But I'm also thinking on the ground what the biomedical firms are doing in terms of trying to really speed up supply chains, invent new technologies. I'm thinking of what the retail and grocery distribution channels are doing. You're seeing profound changes in methods of operation across the economy.

I think it's so striking. If I may, I've been spending the last 15 years of my life trying to persuade firms to respond to the challenge of climate change and trying to persuade them that, if they don't respond, they'll really regret it and there's money to be made. There's so much inertia in the system. Climate change can seem distant; it can seem invisible. Why should I worry about it? To see the whole economy mobilized when the threat becomes very, very concrete reminds me that, as we think about climate change, we have to find a way to make that threat as concrete as possible. So that's one thing I take away from the current moment.

I think the second thing I take away is very similar, which is people often have a great deal of difficulty imagining the future will be different from today. I work a lot with organizations, or I used to before this current emergency, that would say, “Yeah, something might happen, it might not,” that are very attached to their business as usual scenario. I think what the coronavirus shows us is that things can change very quickly, that the physical world is a very powerful actor and can indeed generate nonlinear effects. So that's another piece I would take away.

The third thing I'd take away is the importance of trust in making the economy run and in making organizations run. One of the things I've learned through my research, I think, is that it's much easier to change if you're sustaining high levels of trust, both within the firm and between firms. My work with Bob Gibbons on relational contracts is all about how difficult it is to build trust, how important it is and how quickly it can be destroyed. I think I can see that some firms are making decisions to trust their employees and to manage for the longer term in ways that will put them in a very good position for when the emergency is over.

Robert Stavins: So you've mentioned ways in which, in response to the coronavirus, that firms are in some cases adapting quickly and innovating. Does that mean then that when the coronavirus pandemic has passed, when we're back to what we consider to be normal, that there will be changes, there will be a new equilibrium and there will be changes in the business world that make it different from the way it was before this happened? Or is it just too soon to say?

Rebecca Henderson: It's clearly too soon to say, but let me offer a couple of suggestions anyway. The first is it's entirely possible that this emergency will put us back, that this emergency will really slow down our progress against climate change. Why? Well, most obviously because we're all be poorer and we'll all be trying to dig out of a significant recession, and trying to persuade people to think about the

long-term under those circumstances can be very tough. So that's the potential downside, I think.

The potential upside is that this emergency is making it very clear that the stability of the entire community is critical to the success of business. I think the emergency is also highlighting that one needs a strong, effective federal government to deal with problems like this. I think both of those insights could conceivably translate into business pressure for coherent climate policy in ways that could be very helpful.

They could also translate into an understanding of the need to invest in resilience. I'm guessing when we come out of this we'll have very big stockpiles of medical supplies. I think communicating the idea that sometimes it's important to invest now because we'll be really glad we did later may also be a very positive outcome of this crisis. Last but not least, you're seeing businesses actively collaborate across their sectors in ways that I think are extraordinary and we haven't seen before, and to the degree that having strong collaboration within sectors could really help deal with climate change. I'm very hopeful that that might make a difference as well.

Robert Stavins: So turning to energy and environment, what's your assessment of the energy and environmental performance of the private sector? I recognize it as highly heterogeneous and there's big business and small business and all the different sectors, but can you offer any comments on that?

Rebecca Henderson: I think to a first approximation it makes sense to divide the private sector into three. There are leading edge firms who are deeply concerned about climate and have set goals for themselves and have really thought about how to build their business around transitioning to a carbon-free world, and in some cases also lobbying for carbon policy. So we might call that the progressive vanguard. Then there's a group of firms that are actively resisting making progress on climate that have historically invested in denialism, that have lobbied aggressively against effective carbon regulation, that even now are flooding the airwaves with communication designed to reduce public pressure for climate policy.

I think that's a group ... I'm not sure what I would call them ... Let's call them the unhelpful rump.

Robert Stavins: Okay.

Rebecca Henderson: Then there's a vast majority of firms in the middle which are sort of trying to make payroll. If you're a smaller or middle-sized company, if you're not a leader in your industry, that haven't yet quite understood how important this is. I think what at least was happening really quite dramatically before the emergency hit was that the financial sector was becoming very concerned about the risk of climate change and starting to pressure this middle group to report their

emissions, to develop long-term plans for how they planned to transition. This was the really exciting development in the last 12 months, I think.

The large long-term investors really crystallizing the idea that, for them, climate change is not an externality. If you're the government pension fund of Japan, if you're BlackRock and you're managing seven trillion in assets, you cannot diversify away from the risk, and beginning to put significant pressure on every firm in that portfolio to at least plan for the coming climate transition. That's I think the most exciting development in the last 12 months.

Robert Stavins: Isn't what would determine to some degree where in that spectrum you just described of where firms are, Rebecca, in terms of how aggressive they are on climate change or actually working against progressive climate change policy, wouldn't to some degree that be a function of the sector in which they operate? I think of a coal company for which climate change policy is an existential issue, and then I think of services, including financial services or for that matter IT, compared to a heavy duty manufacturing that have very high emissions levels. Doesn't that to some degree characterize it, or is it something else that's more subtle that I'm surely not aware of?

Rebecca Henderson: It's not that simple, Rob. You're absolutely right that, to a first approximation, fossil fuel companies tend to be holding back, and IT and consumer goods companies and food companies tend to be leaning in. But there's enormous heterogeneity within sectors. Just the difference within the fossil fuel industry, between some of the more reactionary firms and firms like Enel, which at one stage were building a renewable energy plant a week, or Iberdrola, the Spanish utility, which is very heavily investing in renewables. So there's enormous heterogeneity within sectors.

I think some of the fossil fuel companies are in essence betting their business on the idea that the economy will transition away from fossil fuels and are positioning themselves to be on the leading edge. You've seen the same thing in automobiles. Some firms are very aggressively leaning into the electric vehicle transition while others are holding back and even acting to slow things down. You can think of the difference between GM and Ford, for example, in their posture with respect to the California legislation on low emissions vehicles.

It's that heterogeneity that interests me, in fact. That goes directly to what I'd been studying for so many years. I've come to believe that part of that heterogeneity is intrinsic in the way these firms are organized and how they conceive of their aims and goals, and that many of the firms that are leaning into the transition are those that think of themselves as having a broader responsibility than immediate profit maximization. Now, I believe that in the long run they will in fact make more money, but that it's often this long-term orientation that gives them both the strategic vision and the kind of creativity and trust that's necessary to take a fossil fuel company through a massive, massive discontinuity like this.

Robert Stavins: Then is it structural factors about the different companies that produce that heterogenetic response to climate change within a given sector or is it idiosyncrasies of who the CEO or the board members happened to be at some point in time?

Rebecca Henderson: So the structural effects clearly matter. There is a huge sectoral effect. If you have very new fossil fuel assets, it's going to be much harder to make the change. But I think those structural factors interact with and are augmented by really quite subtle path-dependent effects, like who the CEO was or who the CEO is and how he or she envisions the future. This is not a popular view in some economic circles. That's why I said the paper I'm proudest of is "Underinvestment and Incompetence in the Face of Radical Change." But I do think some of the fossil fuel companies that are resisting this transition are making a serious strategic mistake, and I think they're making it for the same kinds of reasons that it took so long for General Motors to respond to Toyota. They are prisoners of old ways of thinking about the world and old expectations about ways to make money.

Robert Stavins: So thinking about prisoners of age or prisoners of old ways of thinking, I want to ask you this last question. What's your reaction to the youth movements of climate activism? Most prominently obviously Greta Thunberg, but many students, our students at Harvard and your students at Harvard Business School. This youth movement of climate activism that's arisen in Europe, United States and elsewhere is quite significant, and I'm wondering what's your reaction to it?

Rebecca Henderson: I have a twofold reaction. The first is one of enormous excitement because I think it greatly increases the odds we'll see the kind of political changes we need if we're going to arrest climate change. The second is a small worry. I'm about to publish a book called "Reimagining Capitalism in a World on Fire." Sometimes when I'm talking to groups, particularly young groups, they look at me and they say, "Why should we reimagine capitalism? Why don't we just throw it out?" That worries me. I'm a huge fan of capitalism. I don't think there's any way we're going to solve the problems we face without mobilizing the innovation and productivity and drive of the private sector. So I'm a little bit concerned that some of the youth activists want to throw the baby out with the bath water.

Robert Stavins: That's a perfect place at which to end. So Rebecca, I want to thank you so much for taking time. I know your calendar is extremely full, so I really appreciate your taking time to join us today. Our guest today has been Rebecca Henderson. She is the John and Natty McArthur University Professor at Harvard and professor at Harvard Business School.

Please join us again for the next episode of Environmental Insights, Conversations on Policy and Practice from the Harvard Environmental Economics Program. I'm your host, Rob Stavins. Thanks for listening.

Announcer: Environmental Insights is a production from the Harvard Environmental Economics Program. For more information on our research, events and programming, visit our website, www.heep.hks.harvard.edu.