THE BROOKINGS INSTITUTION

Dollar & Sense: How smart economic policy can help combat climate change

September 16, 2019

PARTICIPANTS:

Andrew Steer – President and CEO, World Resources Institute

David Dollar – Senior Fellow, Foreign Policy, Global Economy and Development, John L. Thornton China Center, The Brookings Institution

*****

(MUSIC)

DOLLAR: Hi I'm David Dollar, host of the Brookings trade podcast "Dollar & Sense." Today my guest is Andrew Steer president of the World Resources Institute, a leading environmental nonprofit institute. Our topic is climate change. I was planning to start by saying it's a good time to talk about climate change because of the UN summit on the 23rd of September, but I'm more inclined to say it's a good time to talk about it because autumn is about to start and it's 93 degrees in Washington, DC. 93 degrees Fahrenheit. So, we're going to talk about climate change, whether we're addressing it, what we could do to do a better job. So welcome to the show, Andrew.

STEER: Great. Thank you, David. Good to be here.

DOLLAR: So let's start with the big picture. Are countries meeting their commitments under the Paris Accord? Are those commitments sufficient? Do we need stepped-up commitments? Where do we stand?

STEER: Well first you're right about climate. Things are "hotting up" in every sense. 18 of the 19 hottest recorded years in history happened in the 18 years of this century so far, but they're heating up politically as well. I mean how interesting it is that three years ago when the U.S. presidential election was coming along the Democrats made an active decision not to put climate change on their agenda because it was a vote loser. Now, not only the Democrats get allocated six hours of CNN time last week so they can all lay out their climate issues, but now even the Republicans are having to talk about climate change because it is perceived now to be a political winner, potentially.

How are countries doing? It's mixed. Obviously here in the United States progress is disappointing, but even here at the subnational level you're seeing some incredible progress at the state level and the city level. It's not enough to compensate for the lack of activity at the federal level. President Obama set a target of 26 to 28 percent reduction of greenhouse gases by 2025. It's going to be extremely hard to hit that. So, probably that is unambiguously…a failing grade at the moment, and so too we look at Brazil and countries like that is not good.

But looking at the world as a whole, it's actually moderately encouraging. China is going to deliver its 2020 commitments. It already has delivered those. Those are in terms of intensity… [China] said that between 2005 and 2020 it would lower its carbon intensity but by about 45 percent and it's already done that. So, too, under its Paris commitment it committed to peak by 2030. Most people now believe that it will do that well before that, possibly by 2025.

India is on track. Mr. Modi has increased very rapidly the amount of renewable energy going into the system. And so too Europe, some countries are facing difficulty reaching their goals, but overall, they're doing okay.

We run something called the NDC Partnership. NDCs are the buzz word for commitments under the Paris deal, and that has 95 countries in it and 20 international institutions. And broadly we are seeing enthusiasm for progress, but your question "is it

enough" – nowhere close enough. And, of course, the whole point to the Paris deal – the reason we have a Paris deal – is because we took a bottom-up approach rather than a sort of textbook approach. And so the whole idea was it was a voluntary commitment and nobody really volunteered in the first round enough.

We're currently on track – if we reach the Paris agreements the first round – to have an increase in temperature of about 3 degrees Celsius. That's 5 degrees Fahrenheit, which would be a disaster. But, of course, the whole point of Paris was you would come back every five years and you would ramp up your commitment. And so at the end of 2020 when the 196 countries will all meet – actually in Glasgow – that's when they have to make their updated, upgraded. And the next 15 months quite frankly are incredibly important, and that's why the climate summit that you referred to on the 23 of September is so important where – you know, I don't know – probably over 100 heads of state will be there talking about climate change.

DOLLAR: So I realize this is a complicated issue. There are a lot of things involved. We've got these forest fires in Brazil and elsewhere. We've got fossil fuel use, industry, etc. If you could just pick one or two policy measures – let's say two. What do you think are the most important policy measures that would actually make a substantial difference?

STEER: Well you and I are both economists so we would pick a price on carbon as the first one. Since 1923 when Professor Piggott came up with his economics of welfare, we've known that we need to price bad things rather than good things. We need to tax bad things rather than good things and of course we've done the opposite through most of economic history since then. We need a price on carbon of starting about 40 dollars a tonne [and] rising to about 80 dollars a tonne. So that would be the first the first one, and that can come through a tax or it can come through cap and trade.

A second one I would say would be research on the future. In one of the big contributions to thinking through mitigation of climate change has been what's called the "marginal abatement cost curve." And that's been very good, but right now it's not helpful. And the reason it's not helpful is what a marginal abatement cost curve does is it tells you where the cheapest options are first – in fact some things cost nothing like eliminating energy subsidies. And so, environmental community and governments have focused, understandably, on the bottom left-hand part of the marginal abatement cost curve and they've emphasized the cheap things. And very sensible [things]: energy efficiency, now renewable energy and so on.

The problem is if you've got to totally decarbonize as we have, you actually need to also invest in the top right-hand side. So that things like battery storage, it's hydrogen technologies, even some sort of frontrunning ideas such as artificial photosynthesis. It's a whole range of issues including the next generation of transmission mechanisms and so on. It's things like greening cement and steel, which are hard to abate sectors.

So that's where research comes in, but simply theoretical research is not going to be enough. The United States is the best equipped country in the world by far in terms of national

laboratories, but that has to be brought together with the private sector as well. And a carbon price alone won't drive technology – you actually need standards as well. For example, the standards that California has put in place relating to the carbon intensity of fuel, that actually can have a very positive impact on driving technology in a way that actually carbon pricing can't.

DOLLAR: So that's a very nice package you've got there. So the carbon pricing to encourage economic behavior and then subsidies, intelligent subsidies, for research and development. So that's good.

At this U.N. summit that's coming up there are a lot of different action areas and one is on climate finance. I want to talk a little bit about that and demystify that for our listeners. I know we're supposed to ratchet up to about 100 billion dollars per-year of climate finance by 2020. So, what exactly do we mean by climate finance?

STEER: Well it's a subject that has had a lot of fuzzy thinking and fuzzy talking. It's useful to think about it in two ways.

Way number one is special funds that are targeted for climate change – for specific investments, green investments. But the second way to think about it is actually: if we're going to get the revolution that we require, actually all finance needs to be adjusted. There was a time 25 years ago when the issue was all about what was called “incremental cost.” So when, for example, the Global Environment Facility was set up, it was set up around the notion of incremental costs. So if you're planning to build a coal powered plant, but you could actually build a geothermal plant and instead of costing 500 million it would cost 700 million, then the GEF – the Global Environment Facility – would give you a grant for the 200 million to sort of pay for that global externality.

We tend not to think of incremental cost anymore – partly because we realize that's not a useful way to think of it, and partly because in many technologies the price has now come down so actually renewable energy competes perfectly well with coal. Nonetheless, you still need some special funds and that's sort of in a way what the 100 billion was supposed to be about. Now we're not going to get 100 billion in the way some people had hoped, which was assuming there would be public money, grant financed, 100 billion. That's not going to happen.

We've created the Green Climate Fund that has 10 billion dollars at the moment over a three-year period. It's about to be replenished – maybe it will get 15 or 20 billion, we hope. But again, that's going to be about five billion dollars a year – nowhere near the 100 billion. But there are other pots of money as well that are specially targeted. Bilateral agencies like USAID or DFID or the other bilateral countries have quite a bit. So if you add all of those special targeted pots up it comes to now about 40 billion dollars. And then they also they also ask the question, well how much private finance is that leveraging? And if you add that in as well it's about 60 billion. So we're not we're not a million miles from the 100 billion which is what we're supposed to achieve by 2020 and we're certainly an organization that's working to achieve that.

So that's the first way of looking at it – 100 billion. But in the next 15 years we're going to be spending nearly 90 trillion dollars in infrastructure alone. So actually, it's not the billions it's the trillions that matter. And that's where the really interesting things come in. You know, how do you get the financial sector to incorporate climate risk and climate opportunity the way they would have learned how to do it in other areas. And so that's the big the big goal now.

As you know, people like Mark Carney, the Governor of the Bank of England, has been leading a major exercise together with Michael Bloomberg on the subject of how do we get financial institutions to have to identify and declare the climate risks they face the same way that they would have to declare other risks as part of regular disclosure requirements. And so, the idea is once you start making risks visible, and also opportunities visible, you're starting to see the big tanker turn around.

One of the really interesting things is if you look at the hundred trillion dollars in institutional funds, so to speak, 10 years ago – maybe 1 trillion – would take what's called ESG – "environment social and governance" indicators – into account in allocating their money. Now it's over 20 trillion of that 100 trillion that actually take ESG into account. So you're starting to get some signals from the financial sector to companies in terms of what is required of them. It's true in the bond markets, it's true in the stock market where some of the big asset owners are saying "wait a minute, we want to have a decent rate of return, but we also want our pension holders to feel that their money is doing something right."

And the good news is that if you look at some of the leading funds that have been deliberately focused around sustainability issues you find they are doing just as well or better than the regular funds. So for example, Generation Capital which David Blood Runs and Al Gore chairs, if you rank the top 200 portfolio funds they are absolutely at the top. And that has nonetheless been a focus on sustainability.

That doesn't mean that everything is in renewable energy, it means you invest in companies within each sector that are at the very frontiers of doing things differently in a low-carbon climate resilient and sustainable way.

DOLLAR: Right. So, I take your point that ultimately the trillions are going to be a lot more important than the billions. The trillions coming mostly from private investment, billions coming from wealthy countries donating to these various funds. But still, the funds are important for some low-income countries. So, can we talk a little bit about who's making use of these funds? Are there good examples of projects?

STEER: Yes, there's some excellent examples of projects from just doing things differently. I mean, it's interesting now that around the world countries that 10 years ago would not have been investing in renewable energy now it's all about renewable energy. Take a country like Morocco. Just a few years ago electricity flowed from Europe, across the Mediterranean Sea, to Morocco. And Morocco used coal. And now Morocco is a leading player in renewable energy and is going to be sending the electricity north to Europe, so to speak.

Countries like Mexico and many countries in Africa now are generating renewable energy at a great pace. But it's not just energy, it's buildings [and] it's the way cities are designed. In order to move from today's high-carbon, low-efficiency world economy to tomorrow's low-carbon, high-efficiency world economy, you've got to think about revolutions in sort of four or five spheres: Different energy, different cities, different food systems, different manufacturing systems – from linear take-make waste to more circular system – and even different consumption systems, including, you know, the fact that we waste you know 25 percent of all food by nutritional value, 33 percent by volume.

If food loss and waste were a country it would be the third biggest polluter of carbon in the world, sort of thing. So, that's an example, food loss and waste people wouldn't think "my goodness, that's a good investment for these subsidized public money," but actually it's one of the best investments that you could have.

Even things like shifting diets. A number of Asian countries now are getting quite concerned that their dietary habits are shifting much more towards Western and even Latin American high-beef, high-dark milk meat content. That's actually really bad for health systems in those countries. It's disastrous for the world. Similarly, if all the cattle in the world formed a nation, they would also be the third biggest polluter just behind the United States and they will probably catch up soon. Cattle are an incredibly carbon polluting, not only because of emissions they emit, but because of the forests that they need either directly or from the soy production and so on.

So there are some counterintuitive investments and the Green Climate Fund, the World Bank, regional development banks, bilateral agencies, they're all trying to figure out where do you get the biggest bang for the buck, so to speak. And here, the issue of so-called "blended finance," which is another issue that is talked about so loosely, is so important. How do you inject that very precious grant money into an investment decision that will tweak incentive structures so that you actually would do something right rather than something that is old-fashioned.

DOLLAR: Right, so I think that's a great question, and I was looking at your website, wri.org and you had some very nice examples of projects funded by these different climate funds. A lot of them are really about adaptation to climate change because there's a certain amount of climate change is clearly going to happen regardless of what we do from here on. And some of them were quite moving about poor communities whose agriculture is just no longer sustainable in this new climate and helping these communities find new approaches.

You and I both worked in the World Bank for a long time, and the thing that struck me is in China the World Bank had some really successful environmental projects that were basically helping communities adapt, mostly to the lack of water, basically. The decertification and disappearance of water. And in a lot of ways, the ultimate project was common sense, and it should have been economically viable because people were able to grow water saving crops

and change their lifestyles. But the thing that struck me is it was so hard to get people to change their lifestyles because they've been living like this for a long time and it's their sustenance. These experts come in and say “you know you could grow almond trees and they use a lot less water and there's a world market for almonds.” And I think of a lot of our successful projects as really being demonstrations. Some of which failed, of course. That's a good demonstration too. But a lot of them succeeded and people see, “oh, this actually is a sustainable lifestyle.” And then you get their own finance, basically their private finance coming in.

STEER: Dead right. And I know you, David, in China and other places were documented some pretty interesting economics associated with that. But of course, you're exactly right. I mean, China led the world with landscape restoration through the Loess plateau transforming millions of lives, but it takes an incredible amount of discipline, and it requires one to see the multiple benefits. As a result of that, we're now actually seeing the beginnings of a revolution in terms of what you could call landscape restoration around the world.

Most finance ministers and planning ministers, their definition of investment has traditionally been let's try and persuade some foreign company or some domestic company to build a factory. That’s very good. But actually there’s another form of investment – investing in your own physical capital, so to speak. And we now have a very, very deep economics you know economic analysis in virtually every ecosystem in the world that shows that if you take what's up in the sky in the form of carbon which is really hurting people, and if you bring it down to earth in the form of trees and bushes and soils and crops, you actually help mitigation – so you help reduce climate change in a pretty big way – but you also make those soils much more resilient. So you address the adaptation issue, you increase yields, and you improve food security. But it’s difficult to do. It makes economic sense.

We have a program with the African Union called Afr100. 100 million hectares to be restored by 2030, so to speak. The economics is fine. There's private investors that are interested in coming, but often the regulatory environment in the countries doesn't necessarily lend itself. And all of us in earlier histories of being part of sort of parastatal or government tree planting programs which failed. And now, there's a whole new generation of much more sophisticated thinking about you know land rights and so on.

And a country like Nigeria, which is not, you know, doesn't have a reputation for being on the frontiers of doing business the most efficiently, I mean they've had an amazing re-greening due to some pretty important policy changes relating to land tenure and you’re now seeing just an incredible rate of return. Ethiopia is another country that's doing that. Rwanda is doing that in a big way. So you’re quite right. There are there are some pretty exciting projects, but they do require, sort of, a whole of government approach and that's obviously sometimes difficult to get.

DOLLAR: So we are the international trade podcast, so I do have to ask you one international trade question. So some countries start imposing a carbon tax – a price on carbon – as you recommend, very sensibly, but not everyone's doing this. There is a risk that the energy-intensive industries will shift to the countries that do not have carbon taxes and you get a certain kind of emissions leakage. Is this a serious problem and how can we deal with this?

STEER: I think we should deal with it, but actually mainly for political and psychological reasons. Actually, you know, I know I'm talking to somebody who is a world expert on trade, so I have to be careful here. But you don't find a whole lot of European companies whining because they have to pay three times as much for energy as they do here in the United States. They manage fine, actually.

So there's very little evidence that having to pay a 50 dollars a tonne price on carbon…remember Sweden has had, and Norway have had prices on carbon well over 100 percent now for some 20 years. Why? Because there's a general equilibrium, exchange rates adjust in all the normal way, and usually what you gain on the roundabouts you lose on the swings kind of thing. I don't know if that's an American expression. Where I come from that means it tends to work out in the end sort of thing.

Now, economists of course have traditionally not been in favor of what would be called border adjustment measures. They don't like this kind of tit-for-tat sort of thing, but we would support it now. And the reason is that it makes it quite attractive for politicians and even for the business community.

So, for example, there is an effort now – a coalition – that we're part of that brings Republicans and Democrats, economists and lawyers, and companies together, and it's pushing for, if you like, a package. I think, maybe David you've even been part of this. I don't know. So, you know, a 40 dollar a tonne price on carbon to go up by, I don't know, five dollars a tonne each year. That's number one. Number two: To the extent that that is having an impact on climate, you can get rid of some of the regulations that the business don't like. Number three: Border adjustment measures. In other words, if countries don't have it, we're going to tax them when they come into our country. That's a smart thing to do I think politically. Quite frankly, it's not necessary.

DOLLAR: I actually completely agree with you. I think it's probably not quantitatively important, but it is one of these political things that'll become a big issue if we don't do it.

So last question, Andrew. I want to give you a chance to pitch us some optimism. What are reasons to be optimistic that we'll get this under control?

STEER: Look we have at times past had problems such as the ozone hole where good will and international cooperation works and we've largely solved that. Private sector out a very important role to play. The chemical industry was originally very much opposed to it, then they came on board and they solved it. What we're seeing now is governments playing a much smaller role, but we still need them desperately. And even the United States will get to the right

place on climate change. But the really encouraging thing is that there's been a revolution, I think, in economics. Even since Nick Stern wrote the famous Stern Report, which was really all about costs weighed against benefits and discount rates. Basically three things: What are the costs, what are the benefits, what are the timelines, what's the discount rate. If you ask Nick Stern if he wrote it again, he'd say I do it totally differently. He would say actually it's about investments in the future. These investments have positive rates of return. And he would call sort of the low carbon economy what he likes to call the growth story of the 21st century.

Now why is that? Because we've realized that actually really smart policies on climate change lead to more economic efficiency because really emitting carbon is a sign of inefficiency. So, more efficiency. Second, induced technological change. And we all know that the first-year graduate level, if you want growth, the only thing that delivers it over long-term is technological change. And third, long-term predictability of policies. So if you take those three things together, actually, they're pretty powerful source of growth.

And what we're seeing now as a result is that there are now 560 global companies that have signed up to something called science-based targets. Science-based targets say we are going to totally de-carbonise by 2050-2060 throughout our entire supply chain, and here's how we're going to do it, and we're going to give commitments for the first 15 years. And then it's endorsed by my organization, World Resources Institute, the World Wildlife Fund, CDP, and the UN Global Compact, all of whom have experts working on this.

And the question is why are they doing that? Why are these major companies doing it? And includes some of the leading companies in the United States – automobile companies, chemical companies, and so on. Why are they doing it? No one's telling them to. No government's telling them to. They're doing it because they actually think this makes sense over the long-term and financial markets are starting to tell them to do it. Their staff are telling them to do it. And financial markets are not penalizing them for doing it. Turns out when you announce a science-based targets, even if it's aggressive – like Maersk, the biggest container shipping company in the world announced just three [or] four months ago it is going to go totally zero carbon. It doesn't know how it's going to achieve that. Did the financial markets hit it? No, they didn't. Because this is the future story, so to speak, and they're getting a sort of a leg up.

So that's what makes me encouraged, actually. That even though we have to basically halve carbon emissions in an absolute sense every decade for the next four decades – I mean we've never done that before in history, carbon emissions actually rising right now today and in the United States they rose 3 percent last year when they should have been falling, so to speak. So we're not on track, but we could be because there is there is a new economics out there and I don't want to sound panglossian about it, or glib about it, it's going to be extremely difficult to make it happen. But we think it can.

DOLLAR: So, we've been talking to Andrew Steer, president of the World Resources Institute, about probably the most important issue of our time which is climate change. And you've given us some hard-hitting analysis of problems and issues, but I really like this positive ending, that there is some hope and technological change is really our best hope. So, thank you very much Andrew.

STEER: Thank you, David.

DOLLAR: Thank you all for listening. We'll be releasing new episodes of Dollar & Sense every other week, so if you haven't already, make sure to subscribe on Apple Podcasts or wherever else you get your podcasts, and stay tuned.

Dollar & Sense is a part of the Brookings Podcast Network. It wouldn't be possible without the support of Shawn Dhar, Anna Newby, Fred Dews, Chris McKenna, Gaston Reboredo, Camilo Ramirez, Emily Horne, and many more.

If you like the show, please make sure to rate it and leave us a review. Send any questions or episode suggestions to bcp@brookings.edu. And until next time, I'm David Dollar and this has been Dollar and Sense.