

Weather derivatives, the financialization of weather

John Allen:

Hello. I'm John Allen a member of The Open University's Geography discipline. And with me today is Michael Pryke, and we are here really to talk through and Mike translates his research around financialization into teaching materials and what I'm thinking of in particular Mike is you've written a chapter for DD213 which is about 'Weather Derivatives, the Financialization of Weather'. Can you give me a sense of how you go from your research to teaching through financialization of weather?

Michael Pryke:

I think before I do if I say exactly how my research informed what I've written for DD213 it might be helpful just to say something about a specific piece of research that actually was used in the chapter I wrote. That specific piece of research went under the title of 'Geomoney' and what I was trying to capture there was what I think was and still is intriguing entanglement of finance and meteorology. It was a small piece of research looking at the growth of these things called 'weather derivatives', a way of managing and domesticating the risks presented by nature such as too much rain at the wrong time of the year, very harsh frosts, droughts and so on. And looking at the way in which through a process of – a larger process of financialization- finance was offering itself as the solution to the risks presented by nature.

John Allen:

Actually, one of the things I've picked up from your research Mike and that particular paper on geo-monies you had the second part, yeah, which was 'an option on frost, going long on clouds'. That really intrigued me so I was thinking well that's something that can actually attract students. What do you mean by that 'going long on frost' and that kind of thing?

Michael Pryke:

Well it's – it's a kind of a cheeky way of – of trying to signal how – how unusual it was to me at least to see financial markets being seen as solution to some of the risks to firms in particular, and their profitability, presented by nature. So, it's a blend of weather terms, meteorological terms and financial terms: 'options' and 'going long' are financial terms and obviously 'frosts' and 'clouds' are the things that you would expect to hear solely coming out of the mouth of somebody delivering the daily weather forecast. So that was just a fairly casual way of trying to signal this unusual mesh of financial market practices and meteorology which I think is at the core of the emerging weather derivatives market.

John Allen:

As you say casual in some sense but what I've got in my head I've got meteorology on one side and finance on the other. I mean is it finance that has the upper hand or do the meteorologists actually I mean does the weather actually matter in this?

Michael Pryke:

I think the meteorologists are quite rightly at the core of this because they're the ones who are in a sense providing the key data around which financial practices gather to produce a tradable contract 'the weather derivative'. So, the meteorologists in all shapes and sizes would be central to establishing the weather index which is at the centre of the weather derivatives contract. So, they would be providing the right sorts of data that you would need to produce the index that would be at the heart of a contract taken out by airline companies at Heathrow who wanted to protect themselves against severe frost which would then lead to a

delay in flights. But they would need past as well as present data to be able to construct an index which could then lead to the right price being arrived at for the contract, the weather derivatives contract, to provide them with the sort of protection for those days when there were severe frosts and they weren't allowed to land or to take off from Heathrow.

John Allen:

So, you have real weather data around frost or whatever, but someone has to turn that into a quantifiable risk. They have to mathematicise it. How do the two sides come together? Who does that?

Michael Pryke:

I think that could become a long and convoluted answer so if you will excuse me, I will do a very brief summary of some of the main parties involved. Switching from say an airline company at Heathrow to an energy company wanting to protect itself against an unusually warm winter which would then lead to fewer people turning on their heating to maximum and therefore demanding a lot of oil or coal or gas. So, the Gas Company for example might be wanting to offset the revenue risk of a fall in demand in... you can pick whatever city you want. It could be New York, it could be Chicago, it could be Birmingham but they would then need to be able to get the right data from the specific locations, so you would need data coming from a measurement station and here's where you begin to see the role of the meteorologists.

So, they would be collecting [data] at that measurement station, the right type of what they call the 'weather variable', whether that's rain or whether it's temperature. It would be temperature in this case so that's where the meteorological data first gets drawn into the process. They would then move on to other agencies such as the measurement agency which would be helping to further calibrate those data which would then arrive at as it were the centre of the weather contract between the gas company and the other party, that party providing the hedge that would then pay off against that particular contract if the winter turned out to be incredibly warm.

John Allen:

Actually, you say 'hedge' what does that kind of terminology come in. It almost implies kind of speculation. Is there a role for speculators in this too?

Michael Pryke:

I think the role of the speculator comes in when – when the original contract that's been written could be sold on by the company providing the hedge, providing the potential pay out. So, the speculator could be a bank or a hedge fund, for example, e looking again the data but reading it perhaps in a slightly different way and seeing that there was a potential chance for that contract to have been under-priced and therefore a chance for them to make a profit by buying that contract off the original party providing the hedge.

John Allen:

So why do they need to be in there? Why do they need to make a profit out of, the speculators? Why couldn't there just be a contract on one side?

Michael Pryke:

I think it could very well be the case that the original contract would be unsold to a speculator as it were. But there is a role for the speculator both in broadening the market but also in ensuring in a way the right price is always arrived at by serving the same role as speculators play in lots of markets, seeing where things were overpriced or under-priced and then in effect correcting that market price by their actions.

John Allen:

Does it really work? Do they really correct the market?

Michael Pryke:

That I don't know. I only assume that there would be an opportunity for them certainly to make a profit out of their involvement in the weather derivatives markets simply because those

types of contracts would fit well, in the case of a hedge fund, in their overall portfolio because they wouldn't necessarily correlate to other investments and other speculations that they were making, whether that be currency markets commodity markets

John Allen:

Talking of commodity markets, hedge funds, it seems quite a way away from weather. Does it really matter that it's weather that we are talking about mitigating the financial risk? Could it be anything?

Michael Pryke:

It could be anything but for me and this goes back to the initial interest in – in the whole area of weather derivatives. For me that's what got me interested in the whole area in the first place. I think what's – what's interesting is how we've arrived at a position where we look to financial markets as a solution to something like the risk presented by the wrong weather at the wrong time of year and I think more broadly it signals an interesting attitudinal change to the way in which we feel [that] through the certainties, through the mathematical practises of finance, we are able to deal with the effects of climate change because you turn it into a quantifiable risk and you turn it into a quantifiable risk by working with meteorologists. So, the meteorologists are providing quasi-financial data if you like and for me that signals an interesting cultural shift in the way in which we are approaching things like climate change. We needn't be too worried about it because we can quantify it. We can price it and just carry on.

John Allen:

So, it's you really putting together culture and economy isn't it?

Michael Pryke:

It's - it's an attempt to throw something into that wider debate that – that you can't really understand the making of the markets, the preparation of the markets and how markets work without attuning yourself to the cultural influences that enable some of these practises to become acceptable

John Allen:

And in throwing that into a debate that's within your research it's now something that students will actually explore.

Michael Pryke:

Yeah, I – I think it was a nice way of talking in the – in the module about what we refer to as the entanglement of - of – of the economy and financial practises and nature. And it's quite an interesting entanglement in a sense that at one time you think that through these financial practises you're actually effectively separating us from the risks of nature. But at the same time because it's such an involved process you're actually seeing the further entanglement of humans and nature.

John Allen:

So - separation and entanglement. That's the main message of DD213.

Michael Pryke:

Exactly.