

An economic model to help policymakers understand willingness to deal with climate change efforts

27 September 2018, by Bob Yirka



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Two economists, one with the London School of Economics and Political Science, the other with Princeton University, have created a model to assist policymakers in better understanding willingness issues related to climate change mitigation efforts. In their paper published in *Proceedings of the National Academy of Sciences*, Timothy Besley and Avinash Dixit describe how their model works and the ways it could be used.

Climate change is happening because we have pumped so much carbon dioxide and other gases into the atmosphere that it is causing the planet to heat up. And most scientists agree that as the planet heats up, there is a high likelihood of things like more damaging storms or longer droughts—some events might even be categorized as catastrophic. Yet, amazingly, we are still doing little to stop it. We are still driving gas-powered cars and creating electricity by burning coal. We are still having meetings and making pledges to lower emissions, even as the planet continues to

warm.

Besley and Dixit suggest the reason the world has not responded in a serious way to the threat of [climate change](#) is because there is no way those in charge can properly assess when and where catastrophic events due to [climate](#) change will occur. They believe that policymakers require a means for assessing the willingness to pay for carbon emission reductions based on the odds of [catastrophic events](#) occurring in a given time frame. To address this problem, they have created a model (an Excel spreadsheet) that accounts for various factors and returns answers that represent the willingness of an entity to take on such an effort under a given set of circumstances. The underlying measurement is money. What are the costs if a major city is hit by a catastrophic storm, for example? Or if a drought wipes out a country's ability to grow food? To make their model, the researchers used real-world statistics such as the costs involved in the cleanup after Hurricane Katrina laid waste to much of New Orleans.

The researchers note that using the model suggests some common assumptions are correct: For instance, the [willingness](#) of one country to enact mitigation efforts is strongly impacted by efforts carried out by others. Their model also suggests that the mitigation effort that appears most feasible at this time is implementation of a [carbon tax](#).

More information: Timothy Besley et al. Environmental catastrophes and mitigation policies in a multiregion world, *Proceedings of the National Academy of Sciences* (2018). DOI: [10.1073/pnas.1802864115](https://doi.org/10.1073/pnas.1802864115)

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