Climate damage estimates just vapour

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Economists should dump the models and concentrate on the probability of catastrophic scenarios

ONE problem that has dogged the debate on carbon emissions from the beginning has been trying to construct a cost-benefit result that justifies the trouble of major cuts to emissions.

Findings on this point have varied from the British Stern Review of 2006, which found that the damage would be so great that early, strong action was justified, through to those of William Nordhaus, a professor of economics at Yale University who found much milder effects, and a lot in between.

Then there is Robert S Pindyck, a professor of economics and finance at the Massachusetts Institute of Technology, who earlier this year declared the whole debate bunkum. Specifically, he has declared that the various climate models on which future damage is assessed as "worse than useless" in setting policy.

The paper setting out his views, 'The use and misuse of models for climate policy', was criticised at a symposium on climate models in the *Review of Environmental Economics and Policy* as "too harsh" in its assessment. But Professor Pindyck is no denier and the points he makes are straightforward.

The models for estimating damage largely rely on two factors - estimates of future damage due to climate change and the discount rate which turns those estimates into a present-day dollar figure, to compare with the dollar cost of reducing emissions.

The discount rate is best thought of a long-term real return on investment. If the discount rate is set low, as per Stern, then action to offset future damage is worth the trouble.

If it is set high, such as four per cent, we would be better off investing the money we would have spent on cutting emissions. The debate on the right discount rate has been going on for years, with Professor Pindyck pointing out that an economist can make the models arrive at almost any result by choosing the right discount rate.

However, his real bombshell is when he points out that there is no theory or data to sustain estimates of future damage caused by any particular increase in temperature: "As a result developers of IAMs (Integrated Assessment Models) simply make up arbitrary functional forms and corresponding parameter values."

In other words, both key elements of these models depend on whatever the people using it think is a good thing.

Professor Pindyck says that economists should dump the models and concentrate on the probability of catastrophic scenarios, with extreme economic damage, and how much investment and effort would be required to reduce the probability of such a scenario.

Moral obligation

None of this would be acceptable to the many activists in this debate. As far as they are concerned the climate damage has happened now, there will be much more of it in the future and we have a moral obligation to cut emissions early and often.

But in the world where policymakers live, climate change does seem to be taking its time and any assessment of future damage will have to look decades into the future, with a substantial range of forecast outcomes (IPCC climate projections which range from under two to more than five degrees over a century are officially all considered equally likely).

One valiant attempt was that of Professor Ross Garnaut, produced in 2008, to justify the Rudd government's carbon pricing policy, which looked at all aspects of the Australian economy.

However, such efforts have to include forecasts in areas far from the supposedly settled area of temperatures increases, notably rainfall patterns and changes in natural features, and guess at likely responses to changes in climate (such as building barriers to contain sea level increases, or changes in agricultural practices due to temperature shifts).

On top of all those problems, and in my view, Professor Pindyck's harsh assessment of social cost of carbon models can easily be extended to the bulk of the carbon saving initiatives in this country, notably the Renewable Energy Target (RET).

It says a lot for the debate that there is no independent assessment of just how much carbon the RET will save over the lifetime of the many wind farms that will have to be built to meet the target, or exactly how much carbon a wind farm will eliminate each year and at what cost.

Then there is the even larger problem of obtaining any sort of effective, enforceable international agreement on limiting emissions, with international discussions shifting towards a series of voluntary targets involving only the word of governments that the country will hold to the agreed target.

Activists typically dismiss all these inconvenient truths as coal industry propaganda, but it is difficult to see how, from a purely price-benefit point of view, any carbon saving initiative would be worth the cost.

The fall-back argument for activists is that "we have to be seen to be doing something" or "the disaster will be so great we have to act", but that's a discussion for another time.