

Sir Nick Stern
Stern Review
2nd Floor, Room 35/36
HM Treasury
1 Horse Guards Road
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Dear Sir Nick

I am writing to offer a submission to the Review on the Economics of Climate Change you are conducting. I want to make a couple of general points about the adequacy of economic tools to the scale of the challenge and potential danger we face.

If there were no CO₂ or compensating amounts of other greenhouse gases [GhGs] in the atmosphere, the Earth would be uninhabitable by us. This should give us pause, making clear that what may be at issue is a condition of our very existence.

Atmospheric concentrations of CO₂ have varied from about 200ppm to about 270ppm over the last several hundred thousand years, with a temperature difference between those levels of c.5°C and glaciations occurring at the lower end of the range. From the last Ice Age until about 100 years ago concentrations have stayed around 270ppm.

The current level of CO₂ is c.378ppm. In the last 100 years, the concentration has increased by a larger percentage than was required to go from Ice Age to Edwardian Age - an observation that urges caution in assessing projections of the scale of the potential impacts over time of the changes underway. Climate scientists have proposed various 'safe' levels of concentration that will restrict potential temperature rises to no more than 2°C - at 550ppm, 500ppm or even a mere 430ppm - but as the whole biosphere is involved, in truth very little is known about the interrelated and cumulative feedback processes that may be triggered at particular levels and temperatures.

In fact, if the most recent annual increases in CO₂ concentrations represent a trend, the rate of increase is accelerating, which itself could be an early sign of positive feedback mechanisms reinforcing the warming process.

This surely raises the question of whether economic models are able to capture the significance of climatic changes, if those set limits or constitute threats to the conditions for our collective survival. Weather events may be variables, but a habitable climate seems more akin to an implicit assumption of any economic model than a factor it can measure and manipulate. Apocalyptic prognostications cannot simply be ruled out, and the risk calculus involved when survival itself may be at stake may not be one economics is able to deploy adequately.

A separate and relevant factor is the time-lag of 25-30 years between GhG emissions and the effects of any consequent climate forcing. The recent evidence of change that we have been presented with - heat deaths in France, meltwaters slowing the Gulf Stream, daffodils that come well before the winds of March, and a great deal else - therefore represents the impacts of concentrations from about 1975 to 1980, when the concentration of CO₂ was about 340ppm. It may be that that level of GhG would be sufficient, not merely to do away with thousands of elderly French people, but, over time, to melt the world's glaciers, thaw its tundra and dehydrate its

tropical forests. We will never know. We are already committed to the consequences of an additional 38ppm, rising by c1.5-2ppm a year, with little idea of what they may have in store for us.

To make an obvious point, if in the relevant respect we are not even living in the present but experiencing the early effects of changes to the climate from a generation ago, and we do not know what impacts are already coming towards us from current GhG levels, how can economic methods such as cost-benefit analysis, or discount rates, be applied securely, if at all?

But on the other hand – and this terrain is rich in irony – as climate change and its effects can be characterised as projections of our own worst nature – our avarice, profligacy and short-sightedness – and if anything is the science of that nature, economics is, then perhaps economics is our best, or only, hope. Our situation reminds me of a 50s B-movie, 'The Id', in which an invisible and unstoppable creature – the projection of the protagonists' own subconscious – terrorised their outpost on another planet. I don't recall how it ended.

Yours sincerely

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