

The Economics of Climate Change: The Stern Review

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Heard the headlines? Now read the book! Or should I say 'Stern Review'. In case you didn't get that, the name is 'Stern', appearing seven times on the first page. No ordinary book this but a report for the UK Treasury and Cabinet Office which knows its own importance, as is clear in three pages (ii-iv) of opening quotes from Nobel prize winners, establishment figures and newspapers. Nicholas Stern places himself on the cover and his twenty-two co-authors in acknowledgements (p. xi).

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You might open this Government report expecting serious attention to pressing issues and innovation in economics. The contents mention 'economics, ethics and climate change', 'ethical frameworks and intertemporal equity', developing country impacts and even collective action. A different economic approach to climate change is certainly needed. The highest per capita greenhouse gas emitters (USA and Australia) have argued for protecting the consumer economy and 'competitive advantage' of polluting industries. The Bush administration partially justified its withdrawal from Kyoto on the back of energy industry financed economic models. Hence the importance attributed to the book's relatively 'high' estimates of net control benefits.

The book addresses in turn science, impacts, economics and policy. The main issues covered are physical and economic benefits of controlling greenhouse gases in 200 pages, the costs of control in 150 pages, and policy options for control and adaptation in the final 300 pages.¹

Flipping through the chapter references (there's no bibliography) causes the first concerns. This 'Review' ignores great swathes of literature and almost all economic critiques. Congratulations to Dale Jamieson for getting a 1992 piece cited in an appendix as 'Others' [only Dale cited] 'might ask still more basic questions', no details (p. 48). Key ethical discussions rely upon a few colleagues, such as Amartya Sen and John Broome, who are acknowledged with disclaimers in footnotes. Although, even Sen's monograph *On Ethics and Economics* is not cited! At times the book feels like a summary by the uninitiated of an eminent colleague's summary of some opinion. The off-hand dismissal of major philosophical arguments is justified by calling upon a utilitarian model in the neo-classical economic tradition while referencing a few pieces of mostly outdated literature. A PhD student submitting such work, in anything but the most orthodox economics department, would be sent back to the library.

Work by Cline, the only prior study suggesting high net benefits, is superficially referenced after having been hastily added since the original release. The index attributes a model to each of Nordhaus, Mendelsohn and Tol and mentions no other authors. These three are well known for producing highly ad hoc and very low estimates of control benefits. The same basic approach is employed here (Chapter 6), but supposedly differentiated by 'innovations' i.e., updated science, ethical criteria, accounting for uncertainty and inequity.

Unfortunately, while recognition of issues often ignored by orthodox economists is important, the innovations prove superficial. Catastrophes are arbitrarily bounded and restricted to above 450 ppm, so justifying higher emissions targets, despite having been noted as likely below this level. Unknowns become subjective risks (citing an obscure unpublished French paper). Distribution is lost in

¹ The book has different pagination than the on-line version released 30 October 2006 but the text is largely identical, which is unsurprising as publication was 4 January 2007.

aggregation. Numerous 'arbitrary' assumptions are frequently noted as required to construct and run the model.

Yet there is skill in the rhetorical devices deployed. The talk, text and tautology may placate the environmentally concerned, while the call for action suppresses questioning of the calculations. Let me then mention just three issues.

First, the move from physical to monetary damages (Chapters 3–6) ends with all impacts being reduced to a single number. This number has been debated but not the approach, because mainstream economists use the same methodology. The authors' specific argument (Chapter 2) is that all ethical systems can be reduced to focusing upon three objects of desire 'income/consumption, health, and environment' which 'point towards' treating control benefits solely in these terms (p. 163). A fourth, education, mainly discussed as a developing country issue (Chapter 4), gets lost between Chapters 2 and 6. Then, despite expressing various qualms, all three objects are made commensurable and consumption equated to GDP, the numeraire. So the only concern is GDP. *Quod erat demonstrandum*.

Second, those believing rejection of discounting produces the 'high' net benefits are wrong. Discounting is neither rejected in theory nor in practice. The main discounting element combines economic growth and the marginal utility of consumption. Added to this is a small pure time preference rate, excluding myopia as 'unethical'. Finding the actual rate requires searching footnotes, switching between Chapter 6 and 2, and appealing to the 'Technical Annex to Postscript'. I believe a 1.4 per cent rate is the 'base case' employed although reference is also made to an IPCC scenario which produces a 2.0 per cent rate. The model allows for much higher rates with the choice relegated to empiricism, rejecting normative ethics.

Third, in response to criticism, limited sensitivity analysis appears as an annexed afterthought (pp. 658–671). The potential to expose reductionism and ad hoc assumptions is avoided by restricting the range and type of variables included. After all, too much sensitivity analysis creates a multi-criteria assessment.

A noteworthy annoyance throughout is the reference to 'costs', where the authors actually mean control benefits; perhaps aiming to promote the idea of commensurability. Clarity in separating benefits and costs, and consistent terminology are necessary to recognise the status quo property rights, i.e. over the atmosphere. The result here is confusion and Sen even defended the study erroneously claiming it to be a cost-effectiveness analysis!²

A core aspect of the second half of the book is carbon pricing and trading. Chapter 17, entitled 'Beyond Carbon Markets and Technology' gives passing mention to changing behaviour. However, the need for fundamental changes in the political economy, consumer behaviour and public expectations are left

² Response to a question at the International Society for Ecological Economics Conference, New Delhi, December 2006. Transcript available at <http://www.clivespash.org>.

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largely unaddressed. The discussion of carbon pricing assumes the marginal benefit function is knowable and known. Limitations of externality theory are not explored in any detail; there is one page on market inefficiencies (pp. 361–362). The economic theory remains at the level of an introductory text. Inadequate or no attention is paid to the impact of discontinuities, irreversibility, asymmetries, uncertainty, path dependence, multiple pervasive pollutants, and imperfect markets.

Pricing carbon is described as a potentially important source of public revenue without regard to lock-in. An exchequer dependent upon carbon revenue is unlikely to promote 60 to 80 per cent removal of the revenue source. Similarly, carbon trading will create vested interests in a multi-billion dollar financial market, not pollution reduction. Trade on the open market effectively passes over rights to the atmosphere and potentially a massive wealth transfer into the bargain. There are many good reasons to question carbon trading, and some are discussed, e.g., giving polluters free permits (called 'grandfathering'). However, as with much else, potential problems are put to one side in preference for a textbook approach, which then informs the conclusions.

What in the end does this book substantively argue? It argues that future generations are unimportant in a high growth society. It argues that cost-benefit analysis is the best way to promote environmental concern. It argues for replacing judgment on stopping human-induced climate change by decision techniques based upon project appraisal and financial rates of return. It argues for the reduction of all unknowns to subjective risks. It argues for potential (not actual) compensation of those harmed. It argues that consumption is the ultimate good. It argues for addressing environmental problems using market institutions. It argues for privatising and trading the atoms of the atmosphere. It argues for economic 'development' as usual and that the rich can become richer. It argues for the maintenance of existing economic market systems and placating business power elites and worried consumers with promises of growth and techno-solutions.

But there's the rub. This is a book launched with the high profile support of a Prime Minister – 'tackling climate change is a pro-growth strategy', and Chancellor of the Exchequer – Stern 'is the most comprehensive analysis yet, not only of the challenges, but also of the opportunities from climate change' (p. ii). A book bought and paid for by a neo-liberal UK government with a political agenda to fulfil. A government with no previous environmental credentials, which supports nuclear power and genetically modified crops. So, facing 'the greatest market failure the world has ever seen' (p. xviii), Stern and colleagues offer the prospect of traditional economic growth, technology and more of those same markets. Oh, yes, and don't forget to adapt.

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