

Evaluating climate-change policies

James Mirrlees

Chinese University of Hong Kong

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Policy and numbers

- The important question is how much to do about carbon emissions.
- Whether to do it by (tradeable) quotas or taxes (or a mix) matters less.
- It may be easier (scientifically) to estimate the right level of taxes.
- It may be easier to negotiate quotas.

Damages

- Within nations, it is accepted that, ideally, those who cause harm to others should be liable to pay damages, perhaps equal to the value of the harm caused (or more), perhaps to the people harmed.
- In practice it does not work very well, because of the cost of law. It can't be done for global warming.
- But it would get the incentives right.

Estimating the harm

- As far as I know, all estimates are, understandably, very approximate.
- In principle, the cost imposed by additional carbon emissions – the marginal cost – may vary considerably with total emissions. It depends on what others are going to do.
- It is also very uncertain.

How big?

- At current levels of atmospheric carbon, the marginal social cost is, I suggest, not much above zero. Not sure when it becomes positive.
- The Stern Report quotes estimates (as inadequate indicators) of roughly 3% loss of world product at 2°C higher, 10% loss at 6°C higher. This looks like a constant or slowly increasing marginal cost.
- So add up, discounting appropriately?

Discounting

- It should be the rate of return to capital – at least 4% -- for GDP losses.
- This is an average. In some possible worlds, the rate of return will be much less (in others, more).
- But there is also loss of life, and other major losses. Hard to justify discounting them much (or at all).
- I cannot estimate: surely marginal cost rises with future temperature.

Taxes and subsidies

- A tax on emission implies subsidy of carbon absorption, e.g. (tropical) trees.
- Current prices for carbon absorption are amazingly low – e.g. US\$90, = 900 trees, for “offsetting” an average American’s annual carbon emissions.
- Tax at similar rate? No, but...
- Governments can subsidize absorption in other countries too: coordination required.

Future warming

- If there were no further warming, there would be no case for a tax (or other constraint on emissions).
- In any case, temperatures will rise, at least for a time. With a constant tax, emissions would go on rising for a while.
- The world should reach the point of continuing moderate climate damage.

Taxes or Traded Permits?

- Problems with trading schemes:
 - Bias to set the allowances too high;
 - ...especially with offset permits from outside;
 - Grandfathering generates excessive profits, making emission reduction too costly for consumers;
 - Difficult to apply to small emitters;
 - Coverage narrow – e.g. no imports;
 - Transport apparently omitted;
- But system exists: cut quotas, expand offsets.