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Best of both worlds?

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Real life is more interesting than economics, writes ***John Daley and Tristan Edis.***

In real life we make judgments about things we only partly understand. In real life we have to make educated guesses. If we are wise, we try to minimise the costs of regret.

In economics land we would know how much it costs to avoid emitting a tonne of CO2. We would know how much damage is done by each tonne of CO2, including how it affects meltwater lubricating the movement of glaciers towards the sea, or how it affects the growth of crops in both Australia and Russia. We would know how to weigh the life of the poor in Bangladesh or the survival of a species. And we would know, then, the optimal balance between carbon emissions, and the costs of reducing them. We could set a price, confident that emissions would reduce to the optimal level. Or we could set a cap, confident that prices would rise to the optimal level.

In real life, there is no magic to achieving any particular level of emissions. A cap on emissions can only ever be a guess about the optimal level of emissions, taking into account our guesses about the costs of abatement.

There are costs to guessing wrong. If it is cheaper to reduce emissions, we should reduce them more, and sooner.

History suggests that our guesses are probably understating the dangers of carbon emissions, and underestimating our collective ability to innovate.

We are genetically predisposed to turn a blind eye to the possibility of very bad futures. As Nicholas Taleb showed in the Black Swan, you can make a lot of money betting on uncommon but catastrophic futures. You can also become rich betting on things that are not part of our historic experience, even if there is a lot of evidence that they are likely to be part of our future.

We also consistently understate our ability to innovate once incentives are in place. With all three of Australia's greenhouse reduction tradeable certificate schemes (NSW Greenhouse Gas Abatement Scheme (GGAS), the Renewable Energy Target (RET) and the Queensland Gas Scheme) the market had so little trouble meeting the government targets that certificate prices have plummeted – even after the targets for both the RET and Qld Gas Scheme were made substantially more stringent. The same thing happened with the European Emissions Trading Scheme, The United States' Sox and Nox Clean Air Schemes, and the US North-Eastern States Regional Greenhouse Gas Initiative (RGGI).

Once government creates a financial incentive for business to reduce emissions, they start looking for opportunities that might be better and cheaper than what is already on offer. And typically they find them under rocks that economic modelers don't know about. With the Australian RET, experts expected the target would largely be delivered through sugar cane waste. In practice, wind and solar hot water delivered. In phase two of the RET, many experts claimed that the scheme picked winners and it would only support wind. But heat pumps, solar water heaters, and solar photovoltaics boomed so much that wind farm developers pleaded to be separated into a different scheme. With the NSW GGAS scheme, energy efficient light-globes and showerheads proliferated so quickly that government was prompted to make them mandatory.

A hybrid scheme that sets a floor and ceiling on carbon prices minimises these costs of regret. It builds into the scheme our assumptions about the costs of carbon reductions that are implicit in the choice of the level of emissions. If it costs less to reduce carbon emissions than we expect, then it would have been rational to set a lower cap (and vice versa).

Some fear that a price floor amounts to “government interfering with the market”. Ironically, these people often suggest that, instead, government should “tighten the cap” if abatement turns out to be cheap. They forget that carbon markets are entirely the creation of government in the first place and that the cap is part of the design. A pre-announced floor price is at least more predictable than a subsequent government decision to change the cap on emissions, that may be the result of an uncertain lobbying battle between contesting interests.

Another criticism of price floors is that they would create a potentially enormous liability for a government that must buy back permits to enforce the floor. But there are easier ways to create a floor. It can be achieved through regular permit auctions with a minimum reserve price (just like house auctions) as in the US RGGI scheme, or it can be achieved through imposing a carbon tax that emitters must pay, plus an obligation for them to also acquire and surrender an emissions permit. If abatement turns out to be really cheap, then permit prices would fall to zero but emissions would be avoided if they cost less than the carbon tax.

The flexibility of a cap and trade scheme makes it an attractive instrument for achieving the emissions reductions that Australia committed to as part of the Kyoto process. By augmenting it with price caps and floors we can put more certainty around the economic assumptions about the costs of emissions reductions that were the basis of these commitments.

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