

Can the market economy function without environmental transparency?

State of the debate



Contents

The problem: climate change as a market failure	4
The solution: information, prices and markets	4
Overcoming the information shortfall	5
The role for business	6
Conclusion	7

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Free market economies rely on information. When market prices fail to reflect all relevant information, the decision-making of producers and consumers can become distorted, sometimes with extremely damaging consequences. Economists see climate change as the result of a failure to incorporate relevant information about the environmental impacts of our economic activities into the price system. This failure has meant that people and businesses have not been charged an appropriate price for polluting the earth's atmosphere and this, in turn, has led to an unsustainable rise in greenhouse gas (GHG) emissions, with resulting negative consequences for the environment. To deal with the issue, businesses, consumers and government regulators need to obtain more information about the environmental impacts of our economic activities and then integrate this information into the price system. The problem is that gathering the necessary data and figuring out how to incorporate it into the price system are both highly complex challenges that will take years to address.

The problem: climate change as a market failure

Lord Nicholas Stern, author of the 2006 Economics of Climate Change report, famously described climate change as, "the greatest and widest ranging market failure ever seen."¹ In doing so, he was articulating the classic economist's viewpoint that the degradation of shared environmental assets, such as air or water, is the result of society's failure to attach an appropriate price to their consumption.

Non-economists sometimes find this argument a little opaque, but the theory behind it is actually quite straightforward. When a market is operating properly, the forces of supply and demand are supposed to interact via the price system to produce an efficient allocation of resources. This system works well when market prices reflect all relevant information, but problems arise when prices fail to take into account all of the resources that go into production or consumption. When this happens, it can lead to a specific type of market failure known as an externality, which simply means that some relevant impact lies outside (or is external to) the price system.

¹ Stern N (2006) Stern Review: The economics of climate change
http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/d/Executive_Summary.pdf

Externalities are common in the consumption of environmental assets and the result is that these kinds of resources are often depleted to a greater extent than society wants. For instance, the price of food may not reflect the water, ecosystem and land depletion caused in its production, so these environmental resources will often end up being overused. To return to Lord Stern's point, the GHG emissions responsible for climate change represent a major negative externality because they are not priced appropriately (or at all in most cases) and they have therefore been over-consumed, with resulting negative consequences for the environment.

The solution: information, prices and markets

"There are a number of reasons why progress on climate change has been slower than many people would like, but many of them stem from there being a lack of clear information on which to base decisions."

Ajay Gambhir, Economist,
Grantham Institute for Climate Change,
Imperial College London

For economists, the solution to this market failure problem has two main ingredients. The first step is to get a clearer understanding of the environmental impacts of different types of economic activity, whether it be generating electricity, driving a car or buying a piece of clothing. With better information about environmental impacts, market participants can make more informed decisions about their spending and, if they so choose, start spending their money in a more environmentally sustainable way.



On its own, however, simply gathering more information about environmental impacts is unlikely to be enough. As Ajay Gambhir, an economist at Imperial College London's Grantham Institute for Climate Change, explains, "Getting the information is one thing, but for it to really make a difference, it needs to be incorporated into the price system so that companies and individuals have sufficient incentive to act on it." The second part of the solution, therefore, is to integrate information about environmental impacts into an incentive framework that reduces environmentally harmful activity.

This incentive framework might take the form of putting a price on pollution through a tax or allocating rights to clean air – or rights to pollute clean air – which can then be traded at some market determined price. There are already some high-profile examples of these kinds of approaches. In 1995, for instance, a sulfur dioxide allowance and trading scheme was introduced in the US to control acid rain. And, in 2005, the European Union's Emissions Trading System (EU ETS) was created to control and reduce emissions from industrial and power generation companies in the EU.

Introducing more of these types of schemes makes sense, but progress has been slow and the idea of an international carbon pricing system remains a distant goal. As Mr. Gambhir says, "We are years away from having an internationally operative carbon market that effectively reflects the damage greenhouse gas emissions are doing."

Coming up with trusted ways of valuing and trading carbon credits across international borders will be crucial if further progress is to be made in this area. "There's one magical word that would make this work," says Flavio Rufino Gazani, a Brazilian lawyer specializing in carbon markets. "Independent national markets must be fungible, meaning that the carbon credits developed in the US or Brazil must be valued in a similar way, so that participants in the international market know exactly what they're buying and selling and can have trust in the system."

A key part of the solution to this tradability challenge is to gather and share more information about the costs and benefits of different types of activity related to carbon trading, and the same lesson applies to the wider climate change debate. "There are a number of reasons why progress on climate change has been slower than many people would like," says Mr. Gambhir, "but many of them stem from there being a lack of clear information on which to base decisions."

Overcoming the information shortfall

Getting hold of this information is much easier said than done, however. Academics are working on methods of evaluating environmental impacts, and businesses are slowly beginning to pay more attention to environmental reporting, but the reality is that our understanding of how to measure and value environmental impacts is still very limited.

Sangwon Suh, a specialist in environmental management at the University of California, Santa Barbara, agrees that there are information gaps. "The simple truth is that we're not yet very good at measuring these things," he says. "We're at the beginning of a whole series of developments and progress is being made, but there are a lot of uncertainties and a lack of transparency."

At this early stage of the process, academia is likely to play the biggest role in overcoming the information shortfall. One of the top priorities is for researchers to develop ways to measure environmental impacts accurately, so that reliable frameworks can then be handed over to businesses and governments for implementation. But while knowledge is evolving all the time, the scope for practical application still seems limited. Mr. Suh's research, for example, focuses on life cycle assessment, an approach that attempts to map comprehensively the environmental impact of individual products from the first stages of production all the way through to final consumption. This is valuable work that is going in the right direction, but it remains hugely complicated and expensive, so is not yet ready to be rolled out across entire economies.

Meanwhile, another immensely complex challenge for researchers lies in attempting to understand the economic costs and benefits of reducing emissions. After all, even if decision-makers are given a clearer understanding of environmental impacts, via the work of Mr. Suh and others, they will only be able to make informed decisions about what to do with that information once they have plausible evidence about the possible economic consequences of their actions. This is a major problem because, as Mr. Gambhir says, "There's still disagreement on the costs and benefits of possible decarbonization pathways, which is why many countries still aren't happy to accept the imposition of a carbon price."



“Reporting on financials alone will only ever provide part of the story. Companies need to move beyond simply reporting on financials, so that they’re reporting across a whole raft of measures that create sustained value for their organization.”

Paul Druckman, Chief Executive, International Integrated Reporting Committee

The role for business

With the academic and policy worlds still struggling to come up with answers on measurement and regulation, what role is there for business? Is there any sense in reporting on environmental impacts when there is little consensus about how the information should be collected or what should be done with it after it has been recorded?

One of the most common arguments made in support of “sustainability reporting” is that there are reputational gains for companies that are transparent about their environmental impact and demonstrate their green credentials. This is probably true to some extent, but it is worth remembering that the value is likely to vary significantly between industries and, even in those sectors where the effect is relatively higher (customer-facing industries such as retail, for example), the evidence of getting a bolster in reputation from increased transparency is questionable.

To this skeptical argument, Mr. Suh remarks that we should not expect there to be a sudden widespread conversion to environmental reporting. “Think about the example of nutrition facts,” he says. “Twenty years ago, people barely understood them, but now when consumers buy their food they look out for the nutrition information and they know what those statistics mean. Those kinds of changes take time. I think we are headed in the right direction. We are still in our infancy in making sure the

information generated is accurate, transparent and understood by the general public. But I think we are getting there.”

Whatever one thinks of the reputation argument, supporters of enhanced sustainability reporting are undeniably on firmer ground when it comes to the savings likely to be generated by paying closer attention to costs. The most well-worn example here is energy efficiency. A Carbon Trust study published in 2010 showed that UK firms waste £1.6b per year by paying for energy that they do not need.² Adair Turner, the chair of the UK’s Committee on Climate Change, has described this kind of behavior as the equivalent of an individual walking past a £50 note on the pavement and choosing not to pick it up. He has a point. If the gains really are that significant, it is surprising that firms have not been more proactive in squeezing out the efficiencies. One explanation may be that relatively high up-front costs and lengthy pay-back periods are discouraging companies from investing. Another might be that energy efficiency is not yet seen as a key performance indicator for many managers.

More generally, it would also seem that businesses are increasingly coming to value a broader assessment of their economic, social and environmental activities. “It’s about the importance of measurement in management,” says Mr. Suh. “Obviously, you can’t manage something that you can’t measure, because you don’t know how much it has improved or been aggravated by the actions taken.” Growing awareness of this reality is leading to more interest in the idea of integrated reporting. Paul Druckman, Chief Executive at the International Integrated Reporting Committee (IIRC), explains the concept: “To create sustained value, businesses need to try and get a more comprehensive picture of where their strengths and weaknesses lie. Reporting on financials alone will only ever provide part of the story. Companies need to move beyond simply reporting on financials, so that they’re reporting across a whole raft of measures that create sustained value for their organization. That means understanding and being transparent about things like natural, human, social and intellectual capital.”

Aside from the direct commercial benefits, businesses might also consider that they have a wider social duty to improve reporting. Collecting and reporting information on environmental impacts will contribute to the development of a body of information that can be used by academics and government decision-makers to fill in some of the many gaps about environmental impacts and appropriate responses. “A general move toward the production of more

² Carbon Trust (2010) *The business of energy efficiency* London: Carbon Trust

transparent information on energy consumption and emissions intensity within industry is crucial for governments and policy-makers to learn where energy and carbon intensity is currently highest and what the cost of reducing that might be," says Mr. Gambhir. "That would help to inform the kinds of cost benefit analyses that need to be done in order to work out what are the optimal emissions reductions pathways."

Whether a company chooses to be proactive in this regard is likely to depend, at least in part, on how much it stands to lose when regulations aimed at reducing emissions are eventually introduced and how reliant its business is on the use of natural resources. Companies with low emissions and low dependency on natural resources will have relatively little to lose and so might happily publish comprehensive data, safe in the knowledge that they have little to fear from the regulatory changes. Companies with higher emissions or higher dependency on natural resources, however, might question the wisdom of helping to accelerate a process by which they might incur heavy penalties, simply because of the nature of their business.

One way that governments are beginning to deal with these problems is by introducing and encouraging sustainability reporting. Some think mandatory reporting may even happen soon and the topic has been scheduled for negotiation at the United Nations' conference on sustainable development, to be held in Rio de Janeiro in June 2012. This is a positive step, but as a recent report from Chatham House, a UK think tank, made clear, the nature of new reporting requirements and the timeline surrounding their introduction are both deeply uncertain.³

Conclusion

Awareness about the full costs and benefits of different types of economic activity is essential for the effective operation of free market economies. Failure to understand the full extent of environmental impacts – and incorporate these into the price system – has depleted our natural resources and contributed to climate change. Academics and governments are years away from figuring out how we can overcome this problem. In the meantime, businesses can identify efficiency gains and support the wider research effort by monitoring and publishing information about their own environmental impacts.

³ Hohnen P (2012) *The Future of Sustainability Reporting* London: Chatham House
http://www.chathamhouse.org/sites/default/default/files/public/Research/Energy,%20Environment%20and%20Development/0112pp_hohnen.pdf

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