



A gut reaction to a benefit-cost analysis

Posted by [Yankee](#) on July 15, 2005 - 11:09am

Let me preface: I'm not an economist. In fact, the only college-level economics course I ever took was Macroeconomics in a pre-college summer program. I took it because I wanted to get out of my high-school requirement for an economics program, because I wanted to take European History instead. So as you might imagine, that was a long time ago. (/preface)

Lately, the issue of benefit-cost analyses have been popping up on the blogosphere. On Environmental Economics today, there's [a post](#) about whether or not it makes economic sense for the economically-depressed town of Taylor, Florida to give the go-ahead to a coal-fired power plant. Economist John Whitehead does a back-of-the-envelope calculation to determine whether or not the plant is beneficial by balancing the revenue of the plant and the generation of new jobs against environmental costs such as sulfur dioxide, acid rain, carbon monoxide, etc. Each of these toxins are assigned a monetary value, and Whitehead comes up with the following: "Subtracting costs from benefits the annual net benefits to the town of Taylor are $\$3.75 - \$1.33 = \$2.42$ million."

While I appreciate this post from an academic and intellectual standpoint, the whole thing makes me physically recoil. The idea that everything in the universe has a monetary value--including the cost of cancer, of polluting groundwater, of causing global warming by releasing CO₂ into the atmosphere, of killing fish in lakes that are affected by acid rain--is truly chilling. What's the point of putting monetary value on the life of someone who gets cancer from the new coal plant? Maybe he'll even be cured and the insurance company will have paid for everything, but in the meantime, a large chunk of his life has been ruined.

Yet, I won't leave you with only a depressing scenario raised by a benefit-cost analysis. Recently I was discussing with some friends whether it makes more sense from an energy-conservation perspective to eat locally, or to eat organic. Which uses more energy: food grown locally with petroleum based fertilizers, or organically produced food trucked 1500 miles? I found links at the [BBC](#) and [Treehugger](#) and decided to look at little further.

A 2005 study in the journal *Food Policy* (J.N. Pretty, A.S. Ball, T. Lang and J.I.L. Morison, 2005. Farm costs and food miles: An assessment of the full cost of the UK weekly food basket. *Food Policy*, 30:1, 1-19) shows that if the entire United Kingdom moved from conventional to organic farming, agriculture costs would go from $\pounds 1514.4\text{M}$ to $\pounds 384.9\text{M}$ a year. This calculation includes some of those seemingly intangible-type elements I mentioned regarding the Florida power plant, such as methane, nitrous oxide, ammonia emissions to atmosphere, losses of biodiversity and landscape values, adverse effects to human health from pesticides, adverse effects to human health from micro-organisms and BSE, etc.

Sounds great, right? Well, then they go on to look at the social, environmental, and health costs (again, those seeming intangibles) of vehicle transport. These costs include congestion, harm to

health (noise, asthma), climate change (from greenhouse gases) and infrastructure damage. The transportation costs that they looked at included not only the cost of international transport of the food from the source to the grocery store, but also the transport of food to home and then to landfill.

The verdict? If all farms in the UK went organic but everything else stayed the same (i.e. there would still be importation), the country would save $\text{£}1129\text{M}$. If the way food is grown in the UK stays the same but food were transported no more than 20km from farm to grocery store, the UK would save $\text{£}2119\text{M}$. Excellent, but perhaps not practical. Still, if the food were grown within the country and then shipped only by rail, the country would save $\text{£}1506\text{M}$.

Finally, in the conclusion, the authors say:

We have calculated the environmental costs of the UK food basket, and found that farm externalities, domestic road transport to retail outlets, domestic shopping transport and subsidies are the main contributors to the estimated hidden costs of $\text{£}2.91$ per person per week (11.8% more than the price paid). It is clear that actions to reduce farm and food mile externalities, and shift consumers' decisions on specific shopping preferences and transport choices would have a substantial impact on environmental outcomes. The potential for food and transport businesses and governments to reduce these externalities would appear to be considerable. The key policy questions now centre on how best to do this using a variety of taxation, incentive, and regulatory mechanisms. It will be important to ensure that agriculture and food policy reforms continue to result in the production of safe and nutritious food whilst also maximising the production of positive externalities.

The most likely scenario for the immediate future is 'business as usual' with some incremental change. It could be, however, that external shocks institute more radical change. Such potential shocks range from another energy or oil crisis to the realisation of the seriousness of climate change or of the immense costs of current systems such as we outline here.

At least this article left me a little warmer and fuzzier than the analysis on Environmental Economics, but what makes me sad is that it's much more likely that the coal-fired power plant will be established than that the UK government will even pay attention to this sustainability study.

(If anyone is interested in this article but doesn't have access to an academic library, please let me know and I can get you a copy.)

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