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VALUING ENVIRONMENTAL LABELS

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ABSTRACT

Federal regulators have often required environmental labels, which may be designed to help consumers to save money or to reduce externalities. Under prevailing executive orders, regulators are required to project the benefits and costs of such labels, and also to show that the benefits justify the costs. These projections can be extremely challenging, partly because of the difficulty of knowing how consumers will respond to labels, partly because of the challenge of converting behavioral changes into monetary equivalents. The benefits of environmental labels should include (1) the monetary value of the reduced externalities and (2) the monetary benefit to consumers, measured by willingness to pay. It may be difficult for regulators to know (1), and even if they can figure out (2), willingness to pay may not capture the welfare benefit to consumers, at least if consumers are not adequately informed (or if they suffer from some kind of behavioral bias). In principle, agencies should include, as part of (2), the moral convictions of people who care about environmental goods, at least if those convictions are backed by willingness to pay. In the face of the evident epistemic difficulties, sometimes the best that agencies can do is to engage in breakeven analysis, by which they explore what the benefits would have to be in order to justify the costs. Technical as they might seem, these claims raise fundamental questions about valuation of environmental goods and the possible disconnect between willingness to pay and welfare.

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I. LABELS AND WELFARE

All over the world, governments have been drawn to environmental labels.[1] In the United States, motor vehicles are sold with fuel economy labels.[2] Appliances come with energy efficiency labels.[3] The U.S. Department of Agriculture (USDA) now requires labels for bioengineered foods.[4] The same department requires labels for "dolphin safe" tuna.[5] The range of environmental labels is exceptionally wide. Such labels can be categorized as "nudges," designed to respect freedom of choice, while also steering people in specified directions.[6]

As these examples suggest, environmental labels have three purposes. First, they might be intended to help consumers to save money. A fuel-efficient motor vehicle costs less to operate than one that is not fuel-efficient; over the life of a vehicle, it might turn out to be in a consumer's interest to purchase such a vehicle, even if it costs more up-front.[7] A label might alert consumers to that fact.

[1] *See, e.g.*, Jason Czarnezki, Margot J. Pollans & Sarah Main, Eco-Labelling 1-2, 9 (Oct. 1, 2018) (unpublished manuscript) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3230440); *see also* Ibon Galarraga Gallastegui, *The Use of Eco-Labels: A Review of the Literature*, 12 EUR. ENV'T 316, 322–23 (2002).

[2] *See* Labeling Requirements, 40 C.F.R §§ 85.2119, 86.1606, 600.301 (2018) (describing labeling requirements for motor vehicle parts, altitude performance adjustments, and fuel economy); *see also* Consumer Information, 49 C.F.R. § 575 (2018) (describing more general consumer information labeling requirements).

[3] *See* Energy Labeling Rule, 16 C.F.R. § 305 (2019).

[4] *See* National Bioengineered Food Disclosure Standard, 7 C.F.R. pt. 66 (2018).

[5] *See* Dolphin-safe Labeling Standards, 50 C.F.R. § 216.91 (2018).

[6] *See* RICHARD THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS 189, 192 (2009).

[7] *See* JACK GILLIS & RICHARD ECKMAN, CONSUMER FED'N OF AM., AN ANALYSIS OF CONSUMER SAVINGS AND AUTOMAKER PROGRESS ON THE ROAD TO

Second, environmental labels might reduce externalities. If consumers care about greenhouse gas emissions, a label might make it easy for them to act on the basis of their moral convictions. If they do so, they might receive a welfare gain for that very reason, because they care about those convictions. More important, they might reduce greenhouse gas emissions. The label might make such emissions especially *salient* and trigger action for that reason.[8] Third, environmental labels might help consumers to do what it is morally right, in their view, to do. As we shall see, this point is independent of the second. It points to a benefit to consumers, not to third parties.

My question here is simple: What are the costs and benefits of environmental labels? I mean that question as an entry point into a host of questions, some of them quite fundamental. For example: (1) Should satisfaction of moral convictions count in cost-benefit analysis? (2) When crucial information is absent, how can agencies capture the welfare effects of what they propose to do, or of what law requires them to do? (3) What is the relationship between willingness to pay and welfare?

I offer three claims here. The first and most modest is that when agencies are requiring environmental labels, they should attempt to quantify both costs and benefits, and to show that the benefits justify the costs. I hope that this claim is not controversial. Despite its modesty, the claim has bite. It suggests that some environmental labels should not be required, despite their evident appeal—perhaps because they are poorly designed, perhaps because they would do little or no good. It suggests that other environmental labels are a terrific idea. It also imposes a salutary incentive, which is to obtain a better understanding of what kinds of designs are most helpful, in the sense that they produce the highest net benefits.

The second claim is that satisfaction of people's moral convictions should count in cost-benefit analysis, above all on welfare grounds.[9] If people are willing to pay $X to ensure that their

2025 CAFE STANDARDS 5 (2017), https://consumerfed.org/wp-content/uploads/2017/07/on-the-road-to-2025-cafe-standards.pdf.

[8] On the importance of attention and salience, see Xavier Gabaix, *Behavioral Inattention* 41–45 (Nat'l Bureau of Econ. Research, Working Paper No. 24096, 2018), http://www.nber.org/papers/w24096.

[9] For a more in-depth defense of this position, see generally Eric A. Posner & Cass R. Sunstein, *Moral Commitments in Cost-Benefit Analysis*, 103 VA. L. REV. 1809 (2017).

moral convictions are satisfied, $X is a benefit of a regulation that achieves that goal. Agencies should not ignore that benefit (as they have long done).

The third claim is that for many environmental labels, *breakeven analysis* is the best path forward. With breakeven analysis, agencies begin by identifying the costs of the regulation in question, and then specify what the benefits would have to be, in order to justify the costs.[10] If agencies are able to generate upper or lower bounds, breakeven analysis can be a helpful way of determining environmental labels are worthwhile. There are better approaches, but they impose serious information-gathering burdens on regulators, and agencies may not be in a position to gather the necessary information.

II. THEORY AND PRACTICE

Since 1981, American Presidents have required executive agencies to catalogue the costs and benefits of regulations, and to demonstrate that the benefits justify the costs.[11] These requirements should be seen as an effort to focus on the welfare effects of regulatory activity.[12] To be sure, cost-benefit analysis is a highly imperfect way to capture those effects.[13] At the present time, however, it is the most administrable way to achieve that goal; I will have something to say here about the possible disconnect between the outcome of cost-benefit balancing and welfare.

In the environmental context, many proposals for public and private action are *expressive*. They are meant to reflect people's values. Certainly, this may be true for labeling proposals, which might be animated by a view that something is morally wrong, or morally troubling, and consumers ought to be informed of that fact. Cost-benefit balancing is broadly opposed to expressivism.[14] It asks: What are the actual consequences? Of course, moral commitments of certain kinds are necessary to make that question tractable; we cannot assess consequences unless we know what matters, and

[10] *See* Cass R. Sunstein, *The Limits of Quantification*, 102 CAL. L. REV. 1369, 1369 (2014).

[11] *See* Exec. Order No. 12866, 3 C.F.R. § 638 (1993), *reprinted in* 5 U.S.C. § 601 app. at 86–91 (2012).

[12] *See* CASS R. SUNSTEIN, THE COST-BENEFIT REVOLUTION 12 (2018).

[13] *See* MATTHEW ADLER, WELL-BEING AND FAIR DISTRIBUTION xiii (2011).

[14] *See* SUNSTEIN, *supra* note 12, at ix–xviii.

moral judgments are necessary to help us to tell.[15] But most of the time, the relevant commitments are broadly shared, so that the analysis can get off the ground.

For environmental labels, the initial problem for cost-benefit analysis, and potentially the most serious, is *epistemic*; agencies often lack essential information. For a glimpse of some of the complexities, consider a proposed rule from the USDA, the Bioengineered Food Disclosure Standard.[16] The agency did not have much difficulty with respect to costs. It projected first-year costs of $600 million to $3.5 billion, with ongoing annual costs of between $114 million and $225 million.[17] With respect to benefits, the agency flatly said that there would be *none* "to human health or the environment."[18] To fortify the point, it added that even if the new labels changed the ratio of bioengineered (BE) to non-BE food purchases, "there would be no impacts on human health or the environment."[19] Thus far, it seems that the regulation would impose significant costs for no benefits at all.

Nonetheless, the agency pointed to two categories of benefits. The first involved elimination of (a) a more aggressive approach from one state (Vermont) that might drive the national market or (b) the inefficiencies of diverse state-level labeling requirements. These kinds of benefits are irrelevant to my topic here. Note, however, that insofar as (a) or (b) involve benefits, the best way to provide them would be by preempting state law—period. The second and more pertinent category of benefits comes from providing consumers with "reliable information about BE food products."[20] As the agency noted, consumers "have expressed interest in this information."[21] But it declined to try to monetize that interest. It observed that "consumer surveys, experimental studies, and market outcomes

[15] *See id*. at 57.

[16] *See* National Bioengineered Food Disclosure Standard, 7 C.F.R. pt. 66 (2018). The rule was finalized with an analysis that is different in some ways, but for purposes of the discussion here, similar in all relevant respects to that accompanying the proposal. *See id.*

[17] *See* National Bioengineered Food Disclosure Standard, 83 Fed. Reg. 19,860, 19,881 (May 4, 2018).

[18] U.S. DEP'T OF AGRIC., REGULATORY IMPACT ANALYSIS FOR THE PROPOSED NATIONAL BIOENGINEERED FOOD DISCLOSURE STANDARD 65 (2018), https://www.regulations.gov/document?D=AMS-TM-17-0050-2833.

[19] *Id*.

[20] *Id*.

[21] *Id*.

suggest different valuations."[22] It added that in this context, "Willingness to pay and other experimental studies for BE foods are particularly problematic as a basis for computing potential benefits (consumer surplus), with a number of researchers questioning the high negative consumer valuation of BE products resulting from these types of studies."[23]

Those questions are perfectly legitimate. The surveys, suggesting that people are worried about BE products, may not tell us much. They may not map onto actual behavior with respect to purchasing decisions; there is good reason to think that they do not.[24] In the abstract, people might *say* that they are worried, but in stores, they might show that they are not. To the extent that it exists, consumer willingness to pay for the information may well depend on a mistaken belief that BE food products are unsafe or harmful to the environment.[25] If willingness to pay is based on a mistake of fact, the preferred remedy should be to correct the error rather than to require labels—not least because labels could aggravate and spread the error, by making people think that federal regulators are concerned about the risks.[26] That thought could itself produce welfare losses, as people buy products thinking that they are unsafe, or buy alternative products that they like less.

In the end, the USDA concluded that as against a baseline of no state-level BE labels, "there are no quantified benefits associated with the Federal standard."[27] What is noteworthy is that in its proposal, the USDA did not say that the benefits were zero. Instead it declined to quantify the benefits of providing the information *in any way*. All over the world, that practice is common. The appeal of environmental labels is such that they are adopted without a serious effort to see what kinds of benefits they are producing.

Here is some suggestive data. I conducted a small-scale study, using Amazon's Mechanical Turk and asking about four hundred Americans about whether they wanted information of various kinds,

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[22] *Id*.

[23] *Id*.

[24] *See* Nicholas Kalaitzandonakes et al., *Sentiments and Acts Towards Genetically Modified Foods*, 7 INT'L J. BIOTECH. 161, 165 (2005).

[25] *See* Cass R. Sunstein, *On Mandatory Labeling, With Special Reference to Genetically Modified Foods*, 165 U. PA. L. REV. 1043, 1076 (2017).

[26] *See* Oren Bar-Gill et al., *Drawing False Inferences From Mandated Disclosures*, 3 BEHAV. PUB. POL'Y 209, 223 (2018).

[27] U.S. DEP'T OF AGRIC., *supra* note 18, at 8.

and also how much they would be willing to pay for that information. For example, I asked them whether they wanted information about the annual cost of operating appliances in their home, and how much they were willing to pay for that information. Only sixty percent of people wanted the information, and the median willingness to pay was just fifteen dollars. I also asked them whether they wanted to know whether their food contained genetically modified organisms. Here again only sixty percent of people wanted to know, and their median willingness to pay was twenty-four dollars. Outside of the environmental context, I asked whether people wanted to know whether products contained "conflict minerals," that is, minerals used to finance mass atrocities. Only fifty-five percent of people wanted that information, and their median willingness to pay was $26.50.

III. CONSUMER WELFARE: FOUR APPROACHES, IN BRIEF

In assessing the benefits of environmental labels, federal agencies in the United States have adopted four distinctive approaches, imposing increasingly severe information-gathering demands on public officials producing regulatory impact analyses.[28] It is not always easy to explain why agencies choose one or another approach in particular cases.

The first approach—adopted in the case of BE food, and sometimes the most candid—is to confess a lack of knowledge by acknowledging that, in light of existing information, some costs and (especially) benefits simply cannot be quantified.[29] The problem

[28] I explore the four approaches in detail in Cass R. Sunstein, *Ruining Popcorn? The Welfare Effects of Information*, 58 J. RISK & UNCERTAINTY 121, 128–29 (2019), and draw on that discussion here.

[29] For an important decision upholding a refusal to quantify benefits, on the ground that quantification was not feasible, see Inv. Co. Inst. v. Commodity Futures Trading Comm'n, 720 F.3d 370, 377–78 (D.C. Cir. 2013). In the context of disclosure, the leading decision is *Nat'l Ass'n of Mfrs. v. SEC*, which upheld against arbitrariness review a regulation that would require disclosure of the use of "conflict minerals":

> An agency is not required "to measure the immeasurable," and need not conduct a "rigorous, quantitative economic analysis" unless the statute explicitly directs it to do so. Here, the rule's benefits would occur half-a-world away in the midst of an opaque conflict about which little reliable information exists, and concern a subject about which the Commission has no particular expertise. Even if one could estimate how many lives are saved or rapes prevented as a direct result of the final rule,

with this approach is that it suggests that the decision to proceed is essentially a stab in the dark.[30] When the stakes are large, that seems unacceptable, certainly for policymakers. It is also a disservice to the public: Should regulators impose significant costs on the private sector without making every effort to be transparent about the benefits that disclosure might confer? To be sure, quantification may turn out not to be feasible. But if agencies cannot specify the benefits of environmental labels, or some kind of range, they might want to hesitate before going forward. A conclusion of despair—to the effect that quantification is not possible—should be a last resort.

The second approach involves "breakeven analysis," by which agencies describe what the benefits would have to be in order to justify the costs—and suggest that the benefits are indeed likely/not likely to be of the requisite magnitude.[31] Suppose, for example, that a disclosure requirement would impose annual costs of $100 million

> doing so would be pointless because the costs of the rule—measured in dollars—would create an apples-to-bricks comparison. Despite the lack of data, the Commission *had* to promulgate a disclosure rule.

Nat'l Ass'n of Mfrs. v. Sec. & Exch. Comm'n, 748 F.3d 359, 369 (D.C. Cir. 2014) (quoting *Inv. Co. Inst.*, 720 F.3d at 379), *overruled by* Am. Meat Inst. v. U.S. Dep't of Agric.., 760 F.3d 18 (D.C. Cir. 2014)).

[30] For example, according to EPA and the U.S. Department of Transportation,

> The agencies recognize that Executive Order 13563 directs agencies "to use the best available techniques to quantify anticipated present and future benefits as accurately as possible." In this context, however, quantitative information is not available, and the agencies have therefore chosen instead to continue with a qualitative assessment of benefits. It is difficult to develop a good baseline for the fleet using the existing label, partly because the existing label is not designed to incorporate advanced technology vehicles. It is even more difficult to develop a comparison for the fleet with the new labels, because the effects of label designs on vehicle purchases are not known. Thus, any assessment of quantitative effects of label design on vehicle sales involves a great deal of speculation. The agencies believe that informed choice is an end in itself, even if it is hard to quantify; the agencies also believe that the new labels will provide significant benefits for consumers, including economic benefits, though these benefits cannot be quantified at this time.

Revisions and Additions to Motor Vehicle Fuel Economy Label, 76 Fed. Reg. 39,477, 39,517 (July 6, 2011) (to be codified at 40 C.F.R. pts. 85, 86, 600; 49 C.F.R. pt. 575). In short, "[t]he primary benefits associated with this rule are associated with improved consumer decision-making resulting from improved presentation of information. At this time, EPA and NHTSA do not have data to quantify these impacts." *Id.*

[31] For discussion, see Sunstein, *supra* note 10, at 1390–93.

and that the product is purchased, every year, by fifty million consumers. Agencies might ask: Is the label worth two dollars annually to every consumer? A question of this kind might have an obvious answer.

In principle, this approach is much better than a simple confession of ignorance, at least if the agency can show that the benefits have a lower or upper bound. In the case of a lower or upper bound, the decision whether to go forward might become clear. Breakeven analysis is sometimes the only possible path forward, and I will have some nice things to say about it. But in hard cases, it involves a high degree of guesswork, and without a lower or upper bound, it seems to be a mere conclusion, a kind of ipse dixit, masquerading as an analytic device. Without reasonable identification of lower or upper bounds, it is not so different from a confession of ignorance. The real question is whether lower or upper bounds can be reasonably identified.

The third approach is to attempt to specify outcomes in terms of endpoints, such as economic savings or health endpoints. The advantage of this approach is that it actually points to concrete benefits, and it attempts to measure and to monetize them. But it too runs into serious difficulties. I have referred to the first, which is epistemic: agencies may lack anything like the information that would enable them to venture such a specification. They might have little idea, for example, how much consumers will save as a result of fuel economy labels.

The second problem is that even an accurate specification of endpoints will not give a full picture of the actual benefits; in crucial respects, it will almost certainly overstate them.[32] In brief, the problem is that people might experience significant losses as well as gains as a result of receiving information.[33] Suppose, for example, that people are given information about their home energy use, or that they learn that a car that they love has terrible fuel economy. They might be better off on net, but they might also suffer losses, because the information saddens or frightens them, or leads them to switch to a product that is inferior along certain dimensions. An account of endpoints will ignore those losses—but they are real.

[32] *See* Hunt Allcott & Judd B. Kessler, *The Welfare Effects of Nudges: A Case Study of Energy Use Social Comparisons*, 11 AM. ECON. J. 236, 238–39 (2019).

[33] *See id*. at 269.

The fourth approach is to identify consumers' willingness to pay.[34] As a matter of abstract principle, that approach might seem to be the right one; on optimistic assumptions, it should capture the full universe of losses and gains from labels. One of its advantages is that it should capture both positive and negative welfare effects, and allow regulators to take account of people's willingness to pay *not* to receive information.[35] If people do not care about fuel economy, their willingness to pay $0 will be part of the calculation; if they gain and lose from fuel economy labels, the net number will capture both gains and losses; if they prefer not to receive the information, a negative willingness to pay will register as well.

In the context of reports about home energy use, Allcott and Kessler have asked a question about people's willingness to pay for relevant information.[36] In their valuable and provocative work, they find that on average, people are willing to pay *something* for those reports, but that the average amount that they are willing to pay is far less than the average economic savings that people enjoy as a result of the reports. One implication is that the standard evaluation greatly overstates the net welfare gain from the reports (by a factor of five). It is not clear why the willingness to pay figures are so much lower than the economic gain; why would people pay (say) $2.30 for a report that would enable them to save (say) just seven dollars?

But on reflection, the question is not so mysterious. It is plausible to speculate that the relatively lower willingness to pay reflects an assortment of welfare losses from receiving the report: the time spent reading it, the emotional tax of receiving less than good news, the time spent taking steps to reduce energy use. Whatever we think of the precise numbers given by Allcott and Kessler, willingness to pay should capture factors of this kind. In some cases, it should capture the fact that some or many people

[34] *See* Maria L. Loureiro et al., *Do Consumers Value Nutritional Labels?*, 33 EUR. REV. AGRIC. ECON. 249, 263 (2006) (finding that "on average, consumers are willing to pay close to 11 percent above the initial price to obtain cookies with nutritional labelling"); *see also id.* at 249 ("Consistent with prior expectations, our results also indicate a difference between the [willingness to pay] of individuals suffering from diet-related health problems (estimated mean 13 percent) and those who do not suffer any diet-related health problems (estimated mean 9 percent).").

[35] *See* Carline J. Charpentier et al., *Valuation of Knowledge and Ignorance in Mesolimbic Reward Circuitry*, 115 PROC. NAT'L ACAD. SCI., E7255, E7260 (2018).

[36] *See* Allcot & Kessler, *supra* note 32, at 238–39, 269.

would be willing to pay nothing for information or might even pay something not to receive it.

Of course, some people undoubtedly *enjoy* reports of the kind that Allcott and Kessler studied, which suggests that a full accounting would have to identify the hedonic benefits of receiving information. Consistent with this point, Allcott and Kessler also find a high degree of heterogeneity and emphasize the potential welfare gains of targeted policy, ensuring that the reports do not go to people who do not want them.

At the same time, willingness to pay runs into serious and perhaps insuperable normative, conceptual, and empirical challenges, some of which are distinctive to the setting of willingness to pay to obtain information, some of which involve the limits of the willingness to pay criterion in general.

The most obvious problem is that it is difficult to elicit people's *informed and unbiased* willingness to pay for labels. If you lack information, how can you know how much to pay for that information? A second challenge comes from behavioral biases. If consumers show present bias, or if they are unrealistically optimistic, they may be willing to pay too little (or in some cases too much) to receive information. A third challenge involves the potentially labile character of relevant preferences, including preferences for the very good for which information is provided. Note in this regard that when people offer their willingness to pay, they are attempting to solve a *prediction problem*. That problem may be difficult to solve, perhaps especially (but not only) when people are asked about whether they want to receive information.

In short, we may be dealing here with a possible gap between "decision utility" (the utility expected at the time of decision) and "experienced utility" (the utility actually experienced).[37] The most obvious solution would be to convey experienced utility in advance, so as to reduce the gap. At the time of choice, informed people might know what their experience will be, so that they take account of it when they are choosing. In practice, however, it may not be feasible to give people a concrete, vivid sense of their experience, especially but not only if preferences and tastes might change.

For that reason, willingness to pay measures may be a very crude proxy for the actual welfare effects of obtaining information.

[37] *See* Daniel Kahneman & Richard A. Thaler, *Anomalies: Utility Maximization and Experienced Utility*, 20 J. ECON. PERSP. 221, 221–22 (2006).

I mean this point to raise a concern about willingness to pay for information, but it applies more broadly, for example to the valuation of morbidity risks. If we see willingness to pay as an effort to solve a prediction problem, we might wonder whether it is likely to be a sufficiently accurate measure of the actual welfare effects of (say) a severe concussion, chronic bronchitis, ringing in the ears, or a nonfatal heart attack. Of course, it is true that more accurate measures may be unavailable.

IV. EXTERNALITIES

Some actual or imaginable labels are meant to protect third parties, not consumers as such. Suppose that some or many consumers are concerned about greenhouse gas emissions, and they favor labeling, or some kind of disclosure requirement, so that consumers can buy products with low emissions. Or suppose that some or many consumers care about the welfare of animals in general or certain animals in particular; because they do, they seek labels to reflect how animals were (mis)treated.

In such cases, there are two sets of benefits: (1) the benefits to consumers themselves, assuming that they would enjoy a welfare gain if their moral commitments were vindicated and (2) the benefits to third parties. The two are separate. We have seen that the right measure of (1) should be willingness to pay, but it will not be simple to elicit it. It is important to emphasize the significant challenges is quantifying both (1) and (2).

In some of these cases, the third-party effects are not obscure, and the real challenge is how to quantify them. As before, it is necessary to begin by making some projections about consumer behavior. To what extent would consumers change their purchasing habits in response? Even if that question can be answered, it would be necessary to tie any such changes to reduced costs or increased benefits for third parties. And even if that problem can be resolved, it would be necessary to quantify and monetize the resulting effects. It is no wonder that in the context of conflict minerals, the agency concluded that quantification was not possible.[38] Perhaps it should

[38] *See* Nat'l Ass'n of Mfrs. v. Sec. & Exch. Comm'n, 748 F.3d 359, 366 (D.C. Cir. 2014) ("The Commission was 'unable to readily quantify' the 'compelling social benefits' the rule was supposed to achieve: reducing violence and promoting peace and stability in the Congo.") (quoting Conflict Materials,17 C.F.R. pts. 240 & 249b (2019)).

have engaged in some form of breakeven analysis, explaining that the requirement was likely to survive cost-benefit analysis even if its effect were modest. But perhaps it lacked the information that would have allowed it to make that analysis plausible.

It should be clear that insofar as third-party effects are the reason for government intervention, a corrective tax, rather than some kind of label, is the preferred response. But disclosure might be feasible when a corrective tax is not. If so, government might want to decide whether to focus on consumer savings (supposing they exist) or instead on the third-party effects. A label might have multiple objections; the fuel economy label is an example. It is designed to help consumers save money, to reduce conventional air pollutions, and to reduce greenhouse gases. One question is what kind of focus is likely to produce the largest benefits. To know that, regulators need to know what consumers care about, and how their response will translate into quantified savings.

V. TAKING STOCK

I have covered many topics in a short space, and it will be useful to bring the strands together. The question is whether environmental labels improve social welfare. To know that, we need to know their costs, which may be high. We also need to know their benefits, which include (1) the reduction of externalities, (2) the savings for consumers themselves, and (3) the welfare gains from the satisfaction of moral commitments. In theory, the analysis is reasonably straightforward. It is a matter of simple addition.

In practice, things are much more difficult. Often it is hard to know how consumers will respond to an environmental label, which makes it difficult to project (1) or (2). If we can make reasonable projections, we should be able to identify (1), but for reasons stated, the economic gains, to consumers, may overstate consumer savings, and might reasonably be treated as an upper bound. It would be a mistake to ignore (3), but regulators cannot easily capture people's willingness to pay to ensure vindication of their moral commitments (even assuming that the collective action problem can be overcome).[39]

[39] *See* Amartya Sen, *The Discipline of Cost-Benefit Analysis*, 29 J. LEGAL STUD. 931, 946 (2000).

At the present time, real solutions to the epistemic problem would require a form of magic. Breakeven analysis is not exactly magic, but it is a little like a rabbit, pulled out of a hat. More often than we might think, breakeven analysis can show that an environmental label is a good idea—or at least an excellent bet.