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Article

*1651 COST-BENEFIT DEFAULT PRINCIPLES

[Cass R. Sunstein] [FNa1]

3. The Discount Rate

Perhaps the most difficult issue here, from the theoretical point of view, involves the selection of the appropriate discount rate. How should the agency value future gains and losses? In terms of ultimate outcomes, the choice matters a great deal. If an agency chooses a discount rate of 2%, the outcome will be very different from what it would be if an agency were to choose a discount rate of 10%; the benefits calculation will shift dramatically as a result. If a human life is valued at $8 million, and if an agency chooses a 10% discount rate, a life saved 100 years from now is worth only $581. [FN299] "At a discount rate of 5%, one death next year counts for more than a billion deaths in 500 years." [FN300] OMB suggests a 7% discount rate (see Appendix); but this is highly controversial. A key question is therefore: What legal constraints should be imposed on the agency's choice? [FN301] . . .

Usually statutes are silent on the question of appropriate discount rate. In fact, I have been unable to find any statute that specifies a discount rate for agencies to follow. On judicial review, the question will therefore involve a claim that the agency's choice is arbitrary. ***1712** Here the national government shows strikingly (and inexplicably) variable practices. As noted, the Office of Management and Budget suggests a 7% discount rate, [FN304] departing from a 10% rate in the 1980s. [FN305] But agencies are not bound by OMB guidelines, and they have ranged from as low as 0% (EPA, latency period for cancer from arsenic) and 3% (Food and Drug Administration, Department of Housing and Urban development) to as high as 10% (EPA). [FN306] In fact the same agency sometimes endorses different discount rates for no apparent reason--with EPA, for example, selecting a 3% rate for regulation of lead-based paint as compared to 7% for regulation of drinking water, and 10% rates, respectively, for regulation of emissions from locomotives. [FN307] Here government practice seems extremely erratic.

From the purely economic standpoint, there are serious conundrums here. [FN308] The impetus for discounting future effects stems from the judgment that, in the context of money, discounting future benefits and losses is entirely rational, even simple: a dollar today is worth more than a dollar tomorrow. There are two reasons: investment value (or opportunity cost) and pure time preference. [FN309] A dollar today can be invested, and for this reason it is worth more than a dollar a year from now. An emphasis on

the investment value of money yields a discount rate of roughly 5% - 7%. Quite apart from this point, people generally seem to have a preference for receiving money sooner rather than later. People value current consumption more than they value future consumption. An inquiry into pure time preference produces lower discount rates of 1% - 3%. Though they lead to different numbers, both points justify discounting future income gains and losses.

So far, so good. The problem is that, notwithstanding conventional wisdom among economists, these points are not easily taken to justify a discount rate for the nonmonetary benefits of regulation (see table 5 for an overview of such benefits). If a regulation will save ten lives this year and ten lives annually for the next ten years, it cannot plausibly be urged that the future savings are worth less than the current savings on the ground that a current life saved can be immediately "invested." The point about investment value, or the opportunity cost of using capital, seems utterly irrelevant here. With time preference, things are less clear. Perhaps people would rather save ten lives today than ten lives in a decade. But it is unclear that this is so. And even if it is, what moral status would such a time preference have? Almost certainly it makes sense to say that it would be worse for you to lose your limb ***1713** now than to lose it in ten years; in the latter case, you will have ten years' use of the limb. And probably it makes sense to say that agencies should attend to life-years saved, not only lives saved. But holding all this constant, the death of a thirty-five-year-old in 2004 does not seem worth more than the death of a thirty-five-year-old in 2044. And since different people are involved, the moral problem is serious: the preference of the chooser in 2002 is certainly relevant to determining that chooser's own fate, and the timing of risks that might come to fruition for that chooser. But the chooser's preference cannot easily be used to determine the fate of someone not yet born.

These points suggest that, as Richard Revesz argues, it is important to distinguish two issues that go under the name of "discounting" and that have yet to be separated in administrative practice: (a) latent harms, in the form of exposures whose consequences will occur late in someone's lifetime; and (b) harms to future generations. [FN310] It is reasonable to say that latent harms should count for less than immediate ones, since they remove fewer years from people's lives and because people do seem to prefer, other things being equal, a harm in the future to a present harm. For latent harms, some kind of discount rate is sensible. Consider, for example, the case of arsenic. In its regulation, the EPA treated an arsenic death in the future as equivalent to an arsenic death in the present, even though an arsenic death is likely to come, if it does come, many years after exposure. [FN311] On this count, the EPA's judgment seems wrong, even arbitrary; some kind of discount rate is clearly appropriate here. [FN312] It would be easy to imagine a challenge to the failure to discount the latent harms here. On the other hand, OMB's 7% figure, based on the investment value of money is probably too high. [FN313] There is no reason to believe that the discount rate for future health harms is equal to the discount rate for future income effects, and considerable reason to believe otherwise. [FN314] Indeed, the use of a 7% discount rate, if it decisively affects the ultimate decision, would seem to be legally doubtful-- arbitrary in its own way.

But the case of harms to future generations, or people not yet born, is altogether different, and in that case the usual grounds for discounting monetary benefits are quite inapplicable. For this reason some people think that no discounting is appropriate for the nonmonetary benefits of regulation. [FN315] On this view, a life-year saved is ***1714** a life-year saved, and it does not matter, for purposes of valuation,

when the saving occurs.

But there seems to be a major objection to this way of proceeding: it would appear to require truly extraordinary sacrifices from the present for the sake of the (infinite) future. Perhaps the "failure to discount would leave all generations at a subsistence level of existence, because benefits would be postponed perpetually for the future." [FN316] On the other hand, it is not clear that the assumption behind this objection is convincing. Technological and other advances made by the current generation benefit future generations as well, and hence impoverishment of the current generation would inevitably harm those who will come later. [FN317] In any case there is a hard ethical question here--how much the current generation should suffer for the benefit of the future--and a judgment against discounting would not answer that question unless we were sure that as a matter of policy, we should be engaging in maximizing some aggregate welfare function. [FN318] It is not at all clear that this form of maximization is the appropriate choice to make.

At this point it should be clear that these issues are exceedingly complex and that agencies asked to engage in cost-benefit analysis have no clear path to an appropriate choice of discount rate for future generations.
the judgment).

[FN299]. See Michael B. Gerrard, Demons and Angels in Hazardous Waste Regulation, 92 Nw. U. L. Rev. 706, 742-43 (1998).

[FN300]. Derek Parfit, Reasons and Persons 357 (1984).

[FN301]. Valuable treatments include Revesz, supra note 295; Comment, Judicial Review of Discount Rates Used in Regulatory Cost-Benefit Analysis, 65 U. Chi. L. Rev. 1333 (1998).

[FN304]. See OMB, Benefit-Cost Analysis of Federal Programs, 57 Fed Reg at 53,520 (1992).

[FN305]. See Appendix for details; see also Revesz, supra note 295, at 950.

[FN306]. See Comment, supra note 15, at 1336-37.

[FN307]. Id. at 1337.

[FN308]. See id. at 1341-1350; see also Appendix for excerpts from OMB's own account.

[FN309]. Id. at 1341-46.

[FN310]. As argued convincingly in Revesz, supra note 295.

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[FN311]. See 66 Fed. Reg. 6976, at 7013 (Jan. 22, 2001) (to be codified at 40 C.F.R. pts. 9, 141 & 142).

[FN312]. See Revesz, supra 295; Jason Burnett & Robert W. Hahn, EPA's Arsenic Rule: The Benefits of the Standard Do Not Justify the Costs (2001) (unpublished manuscript, on file with author).

[FN313]. See Revesz, supra note 295, at 981-87.

[FN314]. See id.

[FN315]. Id. at 987-1009 (offering a qualified version of this view).

[FN316]. See David W. Pearce & R. Kerry Turner, Economics of Natural Resources and the Environment 223-24 (1990).

[FN317]. Revesz, supra note 295, at 994.

[FN318]. Tyler Cowen & Derek Perfit, Against the Social Discount Rate, in Justice Between Age Groups and Generations 144, 149 (Peter Laslett & James S. Fishkin eds., 1992).

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