

February 16, 2009

Jessica Hertz

Office of Management and Budget

Washington D.C.

*Re: Revisions to the Regulatory Review Executive Order*

Dear Jessica:

Thank you for requesting my views about how Executive Order 12866 might be revised. My suggestion will focus on *equity* and *distributive justice*. I believe that the time is ripe to instruct agencies to integrate equity/distributive considerations into their analyses in a systematic and quantitative way.

Cost-benefit analysis (CBA) is the quantitative policy-analytic tool that agencies tend to employ in preparing regulatory impact analyses for “significant” regulations, pursuant to Section 6(a)(3)(C) of EO 12866. However, CBA itself is not sensitive to equity. It simply aggregates willingness-to-pay/willingness-to-accept (WTP/WTA) amounts. In principle, WTP/WTA amounts should be differentiated depending on individual characteristics, such as health, gender, income, age, etc. Because WTP/WTA for most goods increases with income, a differentiated CBA would tend to ascribe higher monetary values to impacts on rich individuals, as opposed to impacts on poor individuals. In practice, under EO 12866, WTP/WTA values are often not differentiated based on income. Still, CBA remains an aggregative procedure. What matters is the sum total of WTP/WTA amounts, not the distribution of these across the population.

Despite its insensitivity to distribution, CBA is much preferable – in my view – to qualitative, unstructured policy analysis. CBA provides a rigorous, systematic, and implementable framework for evaluating policies, now backed by many years of academic research in both theory and application.<sup>1</sup> However, only a utilitarian would approve a process for governmental choice that ignores distributive considerations. Most welfare economists are

---

<sup>1</sup> For a fuller statement of my views on CBA, see Matthew D. Adler & Eric A. Posner, **New Foundations of Cost-Benefit Analysis** (Harvard U. Press, 2006).

not utilitarians. They argue that chosen policies should lie on the “Pareto frontier” (the set of policies none of which are Pareto-dominated by any other policies), but also acknowledge that distributive considerations are relevant in choosing between policies on the Pareto frontier. And the vast majority of non-economists who have thought seriously about normative matters are not utilitarians either. My guess is that President Obama is not.

The original regulatory review order, EO 12291, did not mention distribution at all. EO 12866 does. Section 1(a) states: “[I]n choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.” And Section 1(b)(5) tells agencies to attend to “distributive impacts” and “equity” in designing regulations in the most cost-effective manner.

However, equity tends to be quite marginal in the EO 12866 process, as it actually plays out. Circular A-4, the pivotal OIRA guidance document to agencies about how to comply with EO 12866, provides extensive and detailed guidance on many aspects of regulatory analysis, but spends only two paragraphs on distribution.<sup>2</sup> Although I have not systematically surveyed agencies’ regulatory analyses to examine the role of equity, my sense is that equity/distribution generally plays a peripheral role, and is certainly not quantified.

However, equity *is* amenable to a more rigorous and systematic treatment. There are a number of scholarly literatures where various metrics of inequality, inequity, or poverty are widely used. These metrics include the following.<sup>3</sup>

Inequality Metrics: A large literature in economics uses inequality metrics such as the Gini coefficient, coefficient of variation, Atkinson index, or Theil index, to quantify the inequality of income in some population. These metrics allow a simple static analysis (What is the degree of income inequality in this population now?), as well as dynamic, comparative, and counterfactual analyses. A dynamic analysis asks how inequality has changed over time; a comparative analysis, how the degree of inequality compares between two populations; a counterfactual analysis, how it would change given some event.

Indeed, all the metrics about to be described support dynamic, comparative, and counterfactual as well as static analyses. The ability to support counterfactual analysis is vitally important for policy-analytic tools. One wants to know, not just what the degree of inequity in the status quo is, but how that would change if some regulation or other policy were adopted. Income-inequality metrics, in particular, operate by assigning some

---

<sup>2</sup> See Circular A-4 (Sept. 17, 2003), p. 14.

<sup>3</sup> My article, *Risk Equity*, provides citations to each of these literatures. See Matthew D. Adler, *Risk Equity: A New Proposal*, 32 *Harv. Envtl. L. Rev.* 1 (2008). I would be apply to supply more references, if that would be helpful.

number between 1 (maximal inequality) and 0 (perfect equality) to a distribution of income or some other item. Employing such metrics for purposes of policy analysis means determining whether the degree of inequality would rise or diminish with the adoption of one or other policy. This idea is also robust to uncertainty: one can examine whether the expected value of the metric would rise or diminish with the adoption of one or another policy.<sup>4</sup>

Although inequality metrics as the Gini coefficient, coefficient of variation, Atkinson index, and Theil index are traditionally applied to the distribution of income, they can also be employed to quantify how other goods are distributed. For example, public health scholars have begun to use these tools to quantify the distribution of health across some population.

Poverty Metrics: Poverty metrics, widely used in development economics, quantify the degree of poverty. The literature here traditionally focused on measuring income poverty (as a function of an income threshold, the percent of the population below the threshold, and the distribution of incomes below the threshold). More recently, inspired by Amartya Sen's scholarship, much work on measuring poverty has looked at non-income "capabilities," e.g., health, housing, nourishment, or environmental quality.

#### Incidence Analysis

We are all familiar with the description of a tax as "progressive" or "regressive." "Incidence analysis" provides the methodology underlying such a description. A tax is "progressive" if its burden on the taxpayer, as a fraction of the taxpayer's income, tends to increase as the taxpayer's income rises; "regressive" if this fractional burden tends to decrease as the taxpayer's income rises; and "neutral" if it tends to stay flat. A substantial body of scholarship by economists and other tax policy researchers quantifies the degree of progressivity or regressivity of various taxes.

Incidence metrics have also been used to study non-tax policies, such as environmental policies. The idea, here, is to examine how the various quantifiable impacts of a policy, e.g., foregone consumption, improved health, better amenities, etc., are distributed across the population; to measure those impacts in dollars (which is, of course, what CBA does); and then to estimate whether the monetized burden/benefit, as a fraction of the affected individual's total income, becomes more or less onerous as individuals become wealthier.

---

<sup>4</sup> Actually, there are multiple distinct approaches that might be employed in applying an income-inequality metric or some other distributive metric under uncertainty. One approach is to determine the expected value of the metric; another, to apply the metric to individual expected incomes or other expected individual attainments. This difference raises technical issues. See Matthew D. Adler & Chris William Sanchirico, *Inequality and Uncertainty*, 155 U. Pa. L. Rev. 279 (2006). The vitally important point, here, is that distributive metrics – like CBA itself – are applicable to regulatory policies the outcomes of which are uncertain.

Environmental Justice/Social Gradient Metrics: The environmental justice literature examines *skews* in the distribution of environmental quality, along socioeconomic or racial lines. The question, here, is whether some pollution source has a disproportionately high impact on minority or low-income individuals, as compared to its impact on the rest of the rest of the population.<sup>5</sup>

The structure of environmental-justice metrics is formally quite similar to the structure of the dominant health-equity metrics employed by public health scholars. As mentioned above, some public health scholars have employed income-inequality metrics, such as the Gini coefficient, to quantify the distribution of health. However, most quantitative work on health equity does not follow this approach. Instead, it adopts a “social gradient” approach. It looks at *skews* in the distribution of health across socioeconomic or racial lines, asking whether low-income or minority individuals are disproportionately unhealthy.

#### Social Welfare Functions and CBA with Distributive Weights

The tools mentioned thus far are useful in quantifying distributive impacts, but not in arriving at an all-things-considered evaluation of a policy. What if a regulatory policy does well on a CBA test, but poorly using a distributive metric such as an inequality metric, poverty metric, incidence metric, or environmental justice/social gradient metric? Such a result points to a conflict between aggregative and distributive goals. It suggests that the policy increases overall well-being or efficiency, but works against the fair distribution of well-being. How should regulators adjudicate such equality/efficiency tradeoffs?<sup>6</sup> They can do so, of course, via deliberation and discussion. But are there more structured tools that can assist regulators in thinking about equality/efficiency tradeoffs?

Actually, there are. The *social welfare function* (SWF) is a theoretical construct that was introduced to welfare economics by Paul Samuelson and Abram Bergson during the 1930s and 1940s, and that has been used to study policies since the pioneering work of James Mirrlees from the 1970s. An entire field of study, “optimal income taxation,” applies SWFs to tax policies. SWFs are also central to much work in environmental economics. For example, the two most prominent economic studies of climate change, by Nicholas Stern and William Nordhaus, rely on the SWF framework.

---

<sup>5</sup> EO 12898 already requires agencies to be sensitive to environmental justice. However, the extent to which this directive has influenced agency practice is unclear. See, e.g., EPA, Office of the Inspector General, **EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice** (2004). I would suggest that EO 12898 is not an adequate substitute for a fuller incorporation of equity considerations into EO 12866 or a new regulatory analysis executive order. EO 12898 doesn’t require agencies to prepare environmental justice analyses as part of the rulemaking process; and environmental justice metrics are not the sole, and arguably not the ideal, framework for quantifying equity.

<sup>6</sup> See Arthur Okun, **Equality and Efficiency: The Big Tradeoff** (1975).

Unlike CBA, which quantifies well-being impacts in dollars, the SWF framework quantifies well-being in *utilities*. The formula for aggregating utilities can be a simple utilitarian formula, or it can be one that gives weight both to overall well-being and equity.

Although SWFs are readily employed in lieu of CBA, the insights from the SWF methodology can also be used to *modify* CBA. Some CBA scholarship applies *distributive weights* to WTP/WTA amounts. Such weights decrease with individual income, and can be used to counteract the effect of the declining marginal utility of income on traditional unweighted CBA, or to incorporate an affirmative concern for equity into CBA. (Indeed, the British government now encourages the use of distributive weights in CBA.<sup>7</sup>) Distributively weighted CBA is a kind of approximation to the SWF approach, which produces the same results for relatively small regulations (regulations whose impacts may vary with the income of the affected individual, but do not themselves substantially change the distribution of income).

In short, substantial intellectual progress *has* been made in developing tools for measuring equity/distribution. These tools are well recognized and widely employed in various academic literatures -- and I suggest that the tools should now be incorporated into the regulatory review process.

Three obvious questions arise at this point. First, I have mentioned five different kinds of distributive metrics: inequality indices, poverty metrics, incidence metrics, environmental justice/social gradient metrics, and SWFs.<sup>8</sup> Which one should regulators be instructed to use? If the EO framework is indeed revised to incorporate equity considerations, it may be sensible to leave OIRA and agencies substantial room for experimentation and learning about the efficacy of these various metrics in governmental policy analysis. The order might (1) instruct agencies to attend to distributive impacts (as EO 12866 already does); (2) instruct agencies to “quantify distributive impacts, where feasible, using appropriate metrics”; and (3) instruct agencies to *explain* their choice of metric. A guidance document such as Circular A-4 could then describe, at much greater length, the various available equity metrics and provide more specific guidance to agencies as to which metric is most appropriate in which context.

A second obvious question is: How should agencies adjudicate conflicts between various distributive metrics (if an agency uses multiple metrics), or between such metrics and CBA? For example, what if CBA evaluates a policy as an improvement on the status quo, but an income-

---

<sup>7</sup> See HM Treasury, **The Green Book: Appraisal and Evaluation in Central Government** (2003), p. 24.

<sup>8</sup> Yet another type of distributive metric is QALY-based cost effectiveness analysis (CEA) with equity weights. This approach has promise, but is more novel than the metrics described in the text, and the scholarly literature that actually employs equity-weighted CEA to evaluate policies is small. Still, it certainly bears consideration.

inequality metric shows that the policy increases the extent of income inequality? What if a policy scores well on an environmental justice metric, but poorly on an inequality metric?<sup>9</sup>

An agency may not in fact need to adjudicate such a conflict. For example, the agency may lack statutory discretion to choose between different policy options, and may be preparing a regulatory impact analysis as a purely informational matter. However, to the extent that agencies *do* possess statutory discretion, and *are* faced with a conflict (1) between distributive metrics or (2) between such metrics and traditional CBA, they should be instructed to explain why they have chosen the policy favored by one metric, or by CBA, and disfavored by another metric, or by CBA.

In the case where an agency has relied upon an SWF to choose some option, and traditional CBA or some other metrics point in another direction, the agency's explanation for relying upon the SWF will be fairly straightforward: SWFs (as mentioned) provide an integrated framework for incorporating both equity and efficiency considerations, while CBA and other distributive metrics do not. In other cases, the agency's explanation will be more discursive and qualitative. Still, instructing agencies to make efforts to quantify distributive impacts, using some recognized metric, and to provide some reasoned explanation for how the metric has figured in its decision, represents real progress over current practice.

A final obvious question is: Why should equity considerations ever be handled through regulation, rather than the tax system? The academic literature on using non-tax instruments to advance distributive goals is quite complex.<sup>10</sup> Ideally, a document such as Circular A-4 would provide agencies guidance about the conditions under which a policy that scores well on a CBA test, but poorly on an equity test, should nonetheless be adopted by virtue of the possibility of using tax instruments to redress inequity.

A simpler solution is to adopt a presumption in favor of handling distributive concerns through the tax system. An agency that decides to adopt a policy on equity grounds, even though CBA points in a different direction, would then be required to justify departing from this presumption.

To sum up my proposal: The new regulatory analysis Executive Order should instruct agencies to quantify distributive impacts. A new guidance document should provide detailed discussions of existing metrics (in particular, inequality metrics, poverty metrics, incidence-analysis tools, environmental justice metrics, and SWFs), and, ideally, should give guidance to agencies in choosing between them. Agencies should be instructed to explain their choice of metric. Where a distributive metric favors some policy option, and an agency ends up choosing

---

<sup>9</sup> Such a conflict might arise because inequality metrics are sensitive to the distribution of income, health, or other items across the entire population, while environmental justice/social gradient metrics focuses on disparities between low income individuals or members of racial minority groups and the rest of the population.

<sup>10</sup> See, for example, Olof Johansson-Stenman, *Distributional Weights in Cost-Benefit Analysis: Should We Forget about Them?*, 81 *Land Economics* 337 (2005).

a different option, it should explain its choice. In the case where an agency chooses the option favored by CBA, it may well be able to explain its choice with reference to a presumption that distributive considerations should be handled through the tax system. Even in such a case, however, distributive metrics play a very useful role: they provide information to the policy community that some policy has equity impacts which require attention, either (as a first best matter) through changes to taxes and transfers, or (as a second best matter) via regulatory changes. The sheer fact of an agency determination that a regulatory policy scores well on a CBA test but poorly on an equity test will presumably help to advance equity – even in the case where the agency adopts the policy – by spurring the political process to address the equity failure.

Thanks again for considering this suggestion. I am happy to supply references or fuller discussion if that would be helpful.

Sincerely,

Matthew D. Adler

Leon Meltzer Professor

University of Pennsylvania Law School

James S. Carpentier Visiting Professor

Columbia Law School