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cc:

Subject: Comments on draft Appendix C

Below I provide eight review comments on OMB's "Appendix C: OMB Draft Guidelines for the Conduct of Regulatory Analysis and the Format of Accounting Statements" (Federal Register, 03 Feb 2003, pp.5513-5527). My comments correspond to three sections of the draft Appendix C on:

- (1) the need for and role of regulatory analysis (one comment)
- (2) the presumption of regulation (one comment), and
- (3) discounting (six comments).

For each comment, I provide a recommendation to OMB that appears after the ">>>" prompt.

Why Analysis of Proposed Regulatory Actions Is Needed (page 5513)

COMMENT #1:

The first paragraph of the Section "Why Analysis of Proposed Regulatory Actions is Needed" (p.5513) describes a relatively limited (constrained) role for regulatory analysis (i.e. "Regulatory analysis is a tool regulatory agencies use to anticipate and evaluate the likely consequences of their actions"). This description only depicts a passive or reflective (downstream) role for economic analysis. Per my recommendation below, there are many other conceivable purposes/objectives to regulatory (economic) analysis in Federal regulatory agencies, as described in the following variety of examples:

-- "The Role of Economic Analysis in Regulatory Reform", Randall Lutter, Regulation, Vol.22, No.2, pp.38-46,
<http://www.cato.org/pubs/regulation/regv22n2/econanalysis.pdf> and

http://europa.eu.int/comm/enterprise/regulation/bia/best_procedure/study.pdf

; presents three possible purposes (objectives or roles) for regulatory economic analyses (i.e. administrative management tool, show compliance with Congressional intent, and as public accounting device).

-- Understanding Your Economy: Using Analysis to Guide Local Strategic Planning, Mary McLean & Kenneth Voytek, American Planning Association, 1992,

<http://www.planning.org/bookservice/description.htm?BCODE=AUYE>; this book explains how to conduct local economic analysis to support such strategic planning decisions, using basic economic analysis techniques to analyze changes in the local economy and evaluate the significance of these changes for economic development policy. It also explains how to structure an analysis; assess local economic performance; analyze the structure and dynamics of a local economy; evaluate local growth prospects; assess local human resources; evaluate non-labor resources; and link analysis to strategic planning. (although this book is oriented at local planning, it's techniques may be potentially transferred (adapted) within a Federal agency national planning

and regulatory context).

-- "National Economic Development Procedures Manual", US Army Corps of Engineers Institute of Water Resources, June 1993, <http://www.iwr.usace.army.mil/iwr/pdf/93r12.pdf>; This Federal agency guidance defines "national economic development" (NED) as the stated policy objective of the Federal government's role in water and related land resources planning studies . The NED principle articulates a very specific economic analysis perspective -- a national rather than state or local perspective -- to be used in valuing project benefits and project inputs or costs.

-- "Chapter 5. Antidegradation: Role of Economic Analysis", US EPA Office of Water, Interim Economic Guidance for Water Quality Standards, 27 April 1995, pp.5-1 to 5-13, <http://www.epa.gov/waterscience/econ/chaptr5.html>; this guidance explains how economic analysis may be used to perform a water quality "antidegradation review": the first question is whether the water pollution controls needed to maintain the high-quality water will interfere with the proposed economic development. If not, then the lowering of water quality is not warranted. If, on the other hand, the pollution controls will interfere with economic development, then the review must show that the development would be an important economic and social one.

-- "The Economic Implications of Animal Diseases and Disease Control at the National Level", G.C. Ramsay, P. Philip & P. Riethmuller, Scientific and Technical Review, Office International des Epizooties, Aug 1999, Vol.18, No.2, pp.343-356, http://www.oie.int/eng/publicat/rt/1802/a_r18203.htm; this paper serves as an example of how regulatory (economic) analysis may provide front-end analytic and informational roles in the regulatory development process: in this paper, economic analysis is used to examine the economic implications of animal diseases and control programs at the national level. In this specific example, the role for economic analysis in government decision-making processes is to provide a framework for gathering information and for the presentation of that information in a methodical manner, thereby providing a method for the decision maker to examine policy alternatives. In addition, assumptions underlying the analysis must be clearly laid out and explained by the person undertaking the analysis. Economic analysis may also serve to identify/justify the reasons for government intervention in animal health programs, such as to correct market externalities, eliminate natural monopolies, preserve/enhance public goods, and correct market coordination failures, information failures, and distribution issues.

-- "Chapter 5. Uses and Limitations of Economic Analysis in Regulatory Decision-Making", Risk Assessment and Risk Management in Regulatory Decision-Making, The Presidential/Congressional Commission on Risk Assessment and Risk Management, Final Report, Vol.2, 1997, pp.93-102, <http://www.riskworld.com/Nreports/1997/risk-rpt/volume2/pdf/v2epa..PDF> ; among other aspects, recommends that regulatory (economic) analyses should present information, where practicable, that can be used to provide a firmer basis for evaluating any inequitable distributions of costs and benefits.

-- "Beyond Cost/Benefit: The Maturation of Economic Analysis of the Law and Its Consequences for Environmental Policymaking", Univ of Illinois Law Review, Vol.2000, No.1, http://home.law.uiuc.edu/lrev/publications/2000s/2000/2000_1/blais.html

; Professor Blais counsels against over-reliance on quantifying costs, benefits, and risks. Instead, regulatory analysis (for environmental policy) should incorporate developing economic and sociology data that demonstrates how people really respond to traditional economic factors. Furthermore, Professor Blais notes that the values embedded in environmental protection statutes cannot be casually reduced to an economic formula. Because market-based reforms are based primarily on economic cost/benefit and risk assessments, she argues that such reforms should be reconsidered. The next step, according to Professor Blais, is to develop a new approach to environmental protection as intuitively appealing as the market-based reforms, but incorporating newly developed economic and behavioral theories, as well as the idea that environmental protection cannot be measured in economic terms.

-- "Trade Policy, Business and the Role of Economic Analysis", Jim Rollo & L. Alan Winters, NERA Working Paper, 01 Dec 2000, http://www.nera.com/_template.cfm?c=6167&o=3728; this paper examines trade policy, what it is, whom it affects, how it is regulated, its specific impact on business and what economists can say about the impact of existing policy and of possible changes to policy. The central proposition is that while trade policy is built round a legal superstructure of regulation, taxes and subsidies, its principal effect and determinants are economic. Hence economists have something specific and useful to say to business.

-- "Report from Fieldwork in a Health Care Organization", Carl-Åke Elmersjö, Ethical Reflection in Economic Theory and Practice, Uppsala University Dept of Theology, <http://www.teol.uu.se/hemsidor/Ee/intro6.htm>; Examines the potential role of economic analysis in organizational change in the health care sector, by describing the kind of economic analysis that may be used to motivate organizational change in a national health care system.

-- "Chapter 5. Growth, Poverty and Distribution", Pearson, Addison Wesley Longman publishers, ocawlonline.pearsoned.com/bookbind/pubbooks/todaroawl/chapter98/medialib/ch05.ppt; The section titled "Role of Economic Analysis: Redistribution From Growth" (pp.36-39) provides the following examples of the possible roles/objectives of regulatory (economic) analyses, at the national level in the context of economic development/ progress: (a) for making changes to relative factor prices, (b) for redistributing assets, (c) for establishing progressive taxation, (d) for establishing transfer payments, and (e) for public provision of goods and services.

>>> I recommend that OMB expand this description to recognize that regulatory (economic) analyses may also play an active or initiating (front-end) role in an agency's regulatory development process --- rather than at only the mid-stream phase of regulatory development --- as well as inform agencies during different stages/phases of regulatory development, and for implementing/evaluating non-regulatory programs, by substituting with the following language: "Federal agencies may use regulatory analyses at different stages during the entire regulatory process for the following purposes: (a) to identify, define and describe baseline problems within an agency's mission and regulatory jurisdiction, (b) to formulate alternative regulatory and non-regulatory solutions (options) to baseline problems, (c) to evaluate the benefits/costs of each regulatory and non-regulatory alternative, and (d) to monitor/measure the actual outcomes (i.e. socio-economic-environmental effects) of the

implemented alternative, in order to generate empirical feedback to the agency for purpose of adjusting and refining the regulation (or non-regulatory program) to achieve optimal desired impact."

The Presumption Against Economic Regulation (Section I.C., page 5515)

COMMENT #2:

Section I.C. is inappropriate to a Federal regulatory analysis framework. The premise stated in the first two sentences of this section --- "Government actions can be unintentionally harmful, and even useful regulations can impede the efficiency with which markets function. For this reason, there is a presumption against certain types of regulatory action" --- represents a relatively narrow economics perspective which prioritizes (i.e. places higher value, emphasis and focus on) the efficient functioning of market activities in society. In contrast to this narrow market-efficiency perspective (emphasis), the historical and proper mission of the Federal government is to take a broader societal perspective concerning economic activities, which includes not only consideration of the efficiency of market-based activities, but also includes:

-- Broader evaluative considerations and Federal government objectives (e.g. correct market externalities, reform distributive outcomes, offset/compensate intergenerational effects, enhance market competition, maintain employment, control inflation, preserve natural resources, and implement strategic national economic development objectives), associated with:

-- All market and non-market forms of human activities and their effects (intentional or unintentional) on society and on the natural environment.

>>> I recommend that OMB either (a) delete entirely this section from the Appendix C guidance, or (b) re-write this section in the affirmative, by substituting with the following language: "Activities associated with the supply and demand for goods and services in various markets, can be unintentionally harmful, and even useful products and services can diminish the welfare of society and the natural environment, resulting in a sub-optimal and environmentally unsustainable economy. For this reason, the Federal government has a presumption for certain types of regulatory actions, to correct social, economic, and environmental imperfections in market-based activities."

What Discount Rate to Use (Section IV.C., pages 5521, 5522)

COMMENT #3:

Value Future Costs and Benefits Less Than Present (p.5521, third column):

Inappropriately presents the following two flawed assertions as reasons "for valuing future costs and benefits less than those occurring in the present":

Assertion #1 (p.5521): "...people are impatient and generally prefer present to future consumption":

This statement is the standard neoclassical economic formulation of "homo economicus": humans are viewed as utility-maximizing egoist consumers, guided by individual preferences, at minimal costs, in opportunistic and calculating manner. However, in the realm of environmental protection regulations, this formulation has shortcomings which make it insufficient (i.e. without empirical relevance) as a normative basis and reason for

regulatory analysis. In contrast, there are a number of economists and other social scientists who have criticized the concept of homo economicus in the economics literature, and who have proposed alternative formulations. For example, see the following published papers:

-- "Homo Oeconomicus and Homo Politicus in Ecological Economics", Malte Faber, Thomas Petersen, Johannes Schiller, *Ecological Economics*, Vol.40, No.3, March 2002, pp.323-333, <http://www.elsevier.com/locate/ecocon>, which describes human action/behavior as motivated to be successful in pursuit of the common good, may be involved in the process of deliberation and decision-making, and reshapes his/her own ideas according to general standards).

-- "Beyond Homo Economicus: Evidence From Experimental Economics", Herbert Gintis, *Ecological Economics*, Vol.35, No.3, Dec 2000, pp.311-322, <http://www.elsevier.com/locate/ecocon>; this paper reports on laboratory experiments suggesting weaknesses in the neoclassical economic theoretical human actor/behavior model, and describes alternative models correcting these weaknesses. One finding is that economic actors tend to be hyperbolic as opposed to exponential discounters who discount the immediate future at a higher rate than the more distant future. Another finding is that economic actors are not self-regarding, but rather in many circumstances are strong reciprocators who come to strategic interactions with a propensity to cooperate, respond to cooperative behavior by maintaining or increasing cooperation, and respond to free-riders by retaliating against the 'offenders', even at a personal cost, and even when there is no reasonable expectation that future personal gains will flow from such retaliation.

-- "Homo Sustinens: Towards a New Conception of Humans For the Science of Sustainability", Bernd Siebenhuner, *Ecological Economics*, Vol.32, No.1, Jan 2000, pp.15-25, <http://www.elsevier.com/locate/ecocon>; this paper explains that the "homo economicus" theory of human behavior exhibits severe analytical and normative shortcomings, and posits a different conception of humans that is based on the concept of sustainability. In contrast to the individualistic, self-interested and rational economic human, the social dimension of human existence is considered as well as emotional and evolutionary aspects. Moral responsibility appears to be an important determinant of human action due to humans' history as a being in community.

-- "Behavior in Commons Dilemmas: Homo Economicus and Homo Psychologicus in an Ecological-Economic Model", W. Jager, M.A. Janssen, H.J.M. De Vries, J. De Greef, C.A.J. Vlek, *Ecological Economics*, Vol.35, No.3, Dec 2000, pp.357-379, <http://www.elsevier.com/locate/ecocon>; explains that human behavior in the economy is often conceptualized and modelled following the rational actor approach. However, in real life human behavior is typified by multidimensional optimization, in which people engage in cognitive processes such as social comparison, imitation and repetitive behavior (habits) so as to efficiently use their limited cognitive resources (i.e. "homo psychologicus").

>>> I recommend that OMB either (a) delete entirely this human behavior assertion about humans preferring present over future consumption, or (b) provide the more recent published alternative assertions (per literature example citations above) about human

behavior, and then point to these alternative human behavior conceptualizations as reasons "for not valuing future costs and benefits less than those occurring in the present".

Assertion #2 (p.5521): "...if consumption continues to increase over time, as it has for most of US history, an increment of consumption will be less valuable in the future than it would be today...":

Although increasing per capita consumption may be historically true for the US, there are two fallacies for using this historical condition (trend) as a basis for validating discounting of future costs and benefits: (a) historical consumption was largely founded upon economic expansion into newly colonized territories and economies which are now relatively saturated, and (b) as explained in the references below, US historical levels of materials and energy consumption are not physically (environmentally) sustainable into the future on a per-capita basis, in relation to the exponentially growing global population, and the thermodynamically and physically limited source/sink carrying capacity of the planet's ecosystems (biosphere):

-- "Towards Sustainable Consumption", US National Academy of Sciences, 2003; we are concerned primarily with the long-term quality of life of all peoples. For the poorer countries of the world, improved quality of life requires increased consumption of at least some essential resources. For this to be possible in the long run, the consumption patterns of the richer countries may have to change; and for global patterns of consumption to be sustainable, they must change. Consumption is the human transformation of materials and energy. Consumption is of concern to the extent that it makes the transformed materials or energy less available for future use, or negatively impacts biophysical systems in such a way as to threaten human health, welfare or other things people value. (

<http://www4.nas.edu/oia/oiahome.nsf/44bf87db309563a0852566f2006d63bb/b934b66563bb9f65852567f5007121fd?OpenDocument>
)

-- "Towards a Sustainable Future", OECD Observer, Poul Nyrup Rasmussen (Prime Minister of Denmark), 15 June 2001; How can we carry on at this rate, especially with the world's population expected to grow by 50% in the next 50 years? There is an urgent need to take global action to correct the unsustainable production and consumption patterns we have become used to. (

http://www.oecdobserver.org/news/fullstory.php/aid/496/Towards_a_sustainable_future.html
)

>>> I recommend that OMB delete entirely this assertion about continued consumption growth over time, and delete the statement that this is a reason "for valuing future costs and benefits less than those occurring in the present".

COMMENT #4:

7 Percent Discount Rate (p.5522, first column):

"... a real discount rate of 7 percent should be used as a base-case for regulatory analysis. The 7 percent rate is an estimate of the average before-tax rate of return to private capital in the US economy. It is a broad measure that reflects the returns to real estate and small business capital as well as corporate capital." This statement represents the economic (financial) perspective of the

US private sector in relation to past (historical) investment and market-related activities, which is too narrow and hence not an appropriately broad and comprehensive economic analytic perspective for the Federal government in many cases/agencies, particularly in the regulatory and national economic evaluative arenas.

According to OMB, the seven percent (7%) discount rate reflects returns to historical investments and other historical economic activities in the US private sector. However, not reflected in this rate-of-return are social costs (i.e. negative externalities) associated with those private sector investments and activities, such as social costs associated with:

-- Generation of industrial pollution/waste:

Environmental clean-up costs associated with EPA's Superfund program (which identified in the 1980s upwards of 425,000 private sector industrial and mining sites in the US potentially contaminated with hazardous wastes; "Superfund: Extent of Nation's Potential Hazardous Waste Problem Still Unknown", US General Accounting Office, GAO-RCED-88-44, Dec 1987, Table 2.1, p.14, <http://archive.gao.gov/d30t5/134840.pdf>).

The Superfund program alone is estimated to cost \$1.8 billion annually over the next ten years, not including the historical clean-up costs incurred for this program, or for the costs associated with EPA's Brownfields clean-up program (<http://www.rff.org/books/otherpdfs/Tab.H-9.pdf>).

-- Depletion of non-renewable natural resources,

-- Degradation of renewable natural resources:

"Economic Reasons For Conserving WILD Nature", Andrew Balmford, et al., Science, Vol.297, 09 Aug 2002, <http://www.sciencemag.org>; this report finds that every year's loss of natural habitat from practices such as private sector logging and farming costs around \$250 billion in each subsequent year (<http://www.nature.com/nsu/020805/020805-11.html>).

-- Overshoot (exceedance) of the ecological "carrying capacity" (biocapacity) and "regenerative capacity" of ecosystem services (<http://www.pnas.org/cgi/content/abstract/142033699v1>, and <http://dieoff.org/page13.htm>), and

-- Environmentally destructive expansion of the US "ecological footprint" abroad via direct investment and importation (<http://www.RedefiningProgress.org/publications/ef1999.pdf>).

Furthermore, there is a relatively large corpus of published literature which provide numerous justifications for application of a zero discount rate --- and in some instances --- negative discount rates, within the context of regulatory analyses, particularly those which involve ecological and environmental effects/impacts/issues.

-- The Economy of Nature: Rethinking the Connections Between Ecology and Economics, William Ashworth, Houghton Mifflin Co, 1995, pp. 186-188; In a pseudo-frontier situation such as the one that faced the first European settlers on this continent, it is reasonable to set discount rates according to monetary rates of return on investments and commodities. The continent was pretty close to infinite compared with the tiny footholds the colonists were carving out. There was justification for paying little or no attention to the fact that they were

reducing the natural resource and ecosystem services value of the lands they were defacing. But this frontier type of discounting is incorrect for natural resources, because natural systems differ from interest-bearing money and investment accounts in one important way: ecosystems have limits. The amount of biomass in an ecosystem can never exceed the carrying capacity for the land base the ecosystem is built upon. This means that, in a mature ecosystem, growth in one part of the ecosystem always comes at the expense of another part. So the implicit growth (discount) rates of different segments of the ecosystem have to balance out; they will be positive in some places and negative in others, such the overall growth rate is zero. (

<http://www.amazon.com/exec/obidos/ASIN/0395655668/qid%3D986658940/002-6820735-7548060>

)

-- "Negative Time Preferences", George Loewenstein & Drazen Prelec, AEA Papers and Proceedings, American Economic Association, May 1991, pp.347-351; this paper concludes that previous psychological work on time preference has focused almost entirely on the trade-off that arises when two outcomes of different dates and different values are compared. The tacit premise was that such judgements will reveal an individual's raw time preference, which may be applied to many different time preference contexts/objects. This paper views this focus as fundamentally incorrect, because as soon as an intertemporal trade-off is embedded in the context of two alternative sequences of outcomes, individuals become more far-sighted, usually wishing to postpone the better outcome to the end; i.e. individuals exhibit a negative time preference (negative discount rate) for those events/objects that are seen as part of a meaningful sequence, having a well-defined starting and ending point (see

<http://sds.hss.cmu.edu/faculty/Loewenstein/downloads/beyondDiscounting.PDF>

and

http://fisher.osu.edu/~butler_267/DAPresent/Philly/MD01-4.pdf..

Recently the US Environmental Protection Agency (EPA) conducted an extensive economics literature review on discount rates and other economics topics, and issued new EPA Economic Analysis Guidance in Sept 2000 (EPA-240-R-00-003;

<http://yosemite.epa.gov/ee/epa/eed.nsf/pages/guidelines>). This new guidance instructs EPA Economists to apply:

-- Intra-generational discounting: a consumption rate of interest approach of "two to three percent" (2% to 3%) for discounting intra-generational costs and benefits (Section 6.3.1.5, p.48); and

-- Inter-generational discounting: "no discounting" (i.e. 0% discount rate) for inter-generational costs and benefits (Section 6.3.2.4, p.52).

>>> I recommend that OMB revise the 1992 Circular A-94 discount rate for regulatory analysis (which is over ten years outdated), by replacing the seven percent (7%) discount rate, with a policy directing Federal regulatory agencies to adopt: (a) two percent (2%) discount rate as the base-case for intra-generational costs/benefits, (b) zero percent (0%) discount rate as base-case for intergenerational effects (e.g. costs/benefits >30 years in the

future), as well as (c) advise agencies that they may in addition provide one or more alternative discount rates as a sensitivity analysis, based on unique analytic considerations associated with a particular regulation and regulatory context (e.g. types of economic sectors affected, types of goods/services affected, types of entities affected, time-span of effects, types of effects, etc.). Note that the recommended two percent discount rate base-case is also consistent with the 20-year historical growth trend in the US genuine progress indicator (GPI), as referenced below in Comment #7.

COMMENT #5:

10% to 25% Discount Rates May be Appropriate (p.5522, first column):
"In some instances,..... then the opportunity cost may be appreciably greater than the 3 to 7 percent discount rate. For example, Tresch suggests that rates in the range of 10 to 25 percent may be appropriate to reflect this opportunity cost...." This statement does not reflect appropriate consideration of renewable resources, as explained in "The Economics of Overexploitation", Colin W. Clark, Science, Vol. 181, 17 Aug 1973, pp.630-634 <http://www.sciencemag.org>; this paper mathematically demonstrates that overexploitation (i.e. physical reduction in productivity) of biological resources such as timber and fisheries, perhaps to the point of actual extinction, is a definite possibility under private management of renewable resources, because of the forces of common property competitive exploitation, and private-property profit maximization:

-- Adoption of high discount rates have the effect of causing biological overexploitation whenever it is commercially feasible; and

-- Annual discount rates between 10 and 20 percent would be sufficient for extinction to result from maximization of the present value of harvests.

>>> In light of the threat of renewable resource exploitation from high discount rate adoption, I recommend that OMB delete this section on applying 10% to 25% discount rates in some instances of Federal regulatory analyses.

COMMENT #6:

Immediate vs Future Health Gains (p.5522, second column):
"However, people do prefer health gains that occur immediately to identical health gains that occur only in the future..." This rather simplistic statement (assertion) is invalidated by the following published empirical research on individual time preference (discounting):

-- "Time Preferences And Preventive Health Behavior: Acceptance of the Influenza Vaccine", Gretchen Chapman & Elliot Coups, Decision Psychology, Vol.19, No.3, Jul-Sep 1999, pp.307-314; using experimental economics, this paper demonstrates that people exhibit negative discount rate time preferences for health effects, i.e. to experience negative health events sooner rather than later, or exhibit zero discount rate time preferences, i.e. indifferent to the same negative health event occurring at different times.

-- "Running Ahead: Time Discounting of Health Outcomes", Gretchen Chapman, 29 June 2001 second draft paper sponsored by the National Science Foundation, <http://www.cebiz.org/cds/chapman2.pdf>; this paper explains that the important difference between health and money discount rates is "domain independence". Discount rates for

health are not correlated with those for money, even though discount rates are highly correlated within each domain. Whereas the delay, magnitude, sign, and sequence effects illustrate factors that influence the mean discount rate, domain independence points to a factor that influences the correlation among discount rates. The former set of biases indicates that decision makers do not have a single, consistent discount rate that is applied in all decisions, but the latter bias indicates that decision makers do not even have a consistent tendency toward a high or low discount rate.

-- "Population-Based Discounting of Future Health Outcomes", T.G. Ganiats et al., 1994 AHSR Annual Meeting Abstracts, <http://www.academyhealth.org/abstracts/1994/ganiats>; provides empirical evidence (study findings) that 57% of a sample of patients in this study demonstrated a negative discount rate, varying according to several disease conditions and by age. This study is based on time preference vignettes involving patient choice between an intervention that maximizes a present health outcome and one that maximizes a future health outcome.

>>> I recommend that OMB either (a) delete this assertion about time preference for immediate health gains, or (b) revise the assertion to acknowledge that empirical studies have indicated that people have sequenced negative time preferences (i.e. negative discount rates) which prefer future health gains over immediate gains.

COMMENT #7:

Future Generations are Likely to be Wealthier (p.5522, third column): The assertion that "...future generations are likely to be wealthier than those currently living..... if that holds true, it is appropriate to discount future benefits and costs....." is highly speculative, and recent economic trends demonstrate that this is not a highly probable scenario, for example:

-- "Living Standard Seen Slumping As Resources Run Out", Living Planet Report 2002, Jonathan Loh, World Wildlife Fund, July 2002, <http://www.planetark.org/dailynewsstory.cfm/newsid/16777/story.htm> and

http://www.panda.org/news_facts/publications/general/livingplanet/index.cfm

; this report concludes that humanity is heading for a sharp drop in living standards by the middle of the century unless it stops its current massive depletion of the Earth's natural resources. There is so much pressure on water supplies, forests, usable land and energy sources that within 150 years the planet could be exhausted. At current exploitation rates and population trends, over 20 percent more natural resources were being used up every year than could be regenerated, meaning that by 2050 two Earths would be needed to meet present resource demands.

-- "The Genuine Progress Indicator 2000 Update", Clifford Cobb, Mark Glickman, Craig Cheslog, Redefining Progress, Dec 2001, http://www.rprogress.org/publications/2000_gpi_update.pdf; The general public, policymakers, and media traditionally rely upon the GDP (gross domestic product) as their primary scorecard of the nation's well-being and standard-of-living. If one observed only the GDP, it would appear that economic progress in the United States has been almost continuous (with only relatively brief recessions) since 1950. The GDP grew 79 percent in real terms from 1974-1994. However, the GPI (genuine progress indicator) --- which is a comprehensive measure of national economic health that

includes in addition to output, capital growth, and trade, the economic contributions of household and volunteer work, while subtracting the costs associated with social and environmental factors like crime, pollution, nonrenewable resource depletion, traffic accidents, and family breakdown --- grew only two percent (2%) during that same 20-year period. Consumption, employment, and additions to the capital stock are unlikely to sustain the rates of growth recently witnessed. That means the GPI will likely remain flat or decline slightly in the next few years after its recent unprecedented growth, unless other factors such as environmental improvements, offset this downward pressure.

-- Natural Capitalism: Creating the Next Industrial Revolution, Paul Hawken, Amory Lovins, L. Hunter Lovins, Little, Brown & Company, 1999,

http://www.mojoines.com/mother_jones/MA97/hawken_jump.html; The US economy may not be growing at all, and may have ceased growing nearly 25 years ago. Obviously, we are not talking about the gross domestic product (GDP), measured in dollars, which has grown at 2.5 percent per year since 1973. Despite this growth, there is little evidence of improved lives, better infrastructure, higher real wages, more leisure and family time, and greater economic security.

-- "American Standards of Living:1918-1988", Brown, Center for Work, Technology & Society, Univ of California- Berkeley, <http://ist-socrates.berkeley.edu/~iir/worktech/asl/page8.html>; from a national perspective, Americans seem unaware of their disproportionate use of the world's resources. Instead, Americans are more concerned about their ability to maintain a high and growing standard of living. The formation of a worldwide market economy should lead to a convergence of wages and living standards, as capital moves to take advantage of lower wages and as workers move to take advantage of higher wages. The importance of domestic markets and domestic resources fades as the world provides an expanding marketplace. Americans benefit in the short run as consumers of less expensive goods, but are penalized in the long run when real wages decline. Further improvements in income and living standards will be constrained by the pressures of global competition. Constrained expenditure growth in the United States should continue the modifications in consumption norms that occurred between 1973 and 1988, when slow growth resulted in innovation with almost no emulation and in the expansion of variety, and especially status, purchases. Worldwide economic development, coupled with the number one problem of population growth, will force serious attention to environmental degradation.. Congestion and environmental problems may force the American people to broaden their focus from fixation on private standards of living, which reflect relative standing in the community, to broader concern with the public standard of living, which is shared by all....

-- "Are We Saving Enough?", Jagadeesh Gokhale, Economic Commentary , Federal Reserve Bank of Cleveland, July 2000,

<http://www.clevelandfed.org/Research/Com2000/0700.htm>; this paper explains that low savings by US households may adversely impact their ability to maintain their living standards during retirement, a challenge that will only gain in difficulty with lengthening life spans. Calculations suggest that middle- and upper-income households would not be able to maintain their living standards at their sustainable levels simply by reinvesting the interest income on their non-tax-favored assets. Rather, they would have to save a sizable fraction of their earnings to smooth consumption and preserve their living standards throughout their

remaining lifetimes.

-- "America's Coming Retirement Crisis", The Concord Coalition, 29 June 1998,

http://www.concordcoalition.org/facing_facts/alert_v4_n7.html;
According to one study, American baby-boomers would have to triple their current savings rate to enjoy an undiminished standard of living in retirement, even assuming Social Security is not cut.

-- NCPA Policy Report No. 188, Gerald Scully, National Center for Policy Analysis, Nov 1994,
<http://www.ncpa.org/studies/s188/s188.html>; American productivity has faltered since the 1950s. Productivity growth rates that were in the 3.0 to 3.5 percent range have fallen below one percent. As a result, many Americans have suffered a decline in their living standard.

>>> I recommend that OMB delete from Appendix C the asserted reason -- that future generations are likely to be wealthier -- as a basis for discounting future costs/benefits, because empirical evidence and economic studies on this topic (as exemplified by the small sample of citations above) dispute this assertion.

COMMENT #8:

Non-Monetary Benefits/Costs (p.5523, first column):

"Even costs and benefits that are not expressed in monetary units should be discounted if they are separated in time." Per the quotation below, there is existing Federal agency policy precedence for not discounting non-monetary environmental (ecosystem) effects and attributes of projects:

"There is generally no consensus on whether it is appropriate to discount non-monetary effects of public investment decisions for project evaluation. One view holds that project effects that are measured in non-monetary terms that do not have a close connection to service outcomes and values should not be discounted for project evaluation. For example, the measurement of ecosystem restoration outputs generally must rely on some measure of ecosystem function as a gross proxy for natural ecosystem service outcomes. But since this functional measure does not directly say anything about the magnitude or timing of natural service flows, it should not be discounted for project evaluation. The PGN [US Army Corps of Engineers civil works "Principles & Guidelines for National Economic Development"] seems to adopt this view by specifying that non-monetary ecosystem restoration outputs should not be discounted for project evaluation. Instead, it says that these output measures should be computed as average annual measures, taking into consideration that the outputs of alternative plans are likely to vary over time. For example, consider two restoration plans that each produce 50 functional units annually when restoration outputs are fully realized. If the first plan achieves the full 50 functional units in year one after project construction, while other will take 10 years of gradually increasing output to reach the 50 functional units, then this information should inform the calculation of average annual output for the two plans. In this example the first plan would produce an average annual output of 50 functional units over the project life, while the second would produce something less. This highlights that information on the timing of non-monetary outputs is always relevant for project evaluation and thus should be considered in some way." (source: "White Paper on Improving Environmental Benefits Analysis", Working Draft June 2001 Post Workshop I Revisions, Eugene Stakhiv, Richard Cole, Paul Scodari,

& Lynn Martin, Institute for Water Resources, U.S. Army Corps of Engineers, Alexandria, VA).

>>> I recommend that OMB revise this paragraph to reflect the policy (language) adopted by the US Army Corps of Engineers, for regulatory analyses involving non-monetary environmental costs/benefits, as well as for other types of non-monetary costs/benefits.

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7 Percent Discount Rate (p.5522, first column):

"... a real discount rate of 7 percent should be used as a base-case for regulatory analysis. The 7 percent rate is an estimate of the average before-tax rate of return to private capital in the US economy. It is a broad measure that reflects the returns to real estate and small business capital as well as corporate capital." This statement represents the economic (financial) perspective of the US private sector in relation to past (historical) investment and market-related activities, which is too narrow and hence not an appropriately broad and comprehensive economic analytic perspective for the Federal government in many cases/agencies, particularly in the regulatory and national economic evaluative arenas.

According to OMB, the seven percent (7%) discount rate reflects returns to historical investments and other historical economic activities in the US private sector. However, not reflected in this rate-of-return are social costs (i.e. negative externalities) associated with those private sector investments and activities, such as social costs associated with:

-- Generation of industrial pollution/waste:

Environmental clean-up costs associated with EPA's Superfund program (which identified in the 1980s upwards of 425,000 private sector industrial and mining sites in the US potentially contaminated with hazardous wastes; "Superfund: Extent of Nation's Potential Hazardous Waste Problem Still Unknown", US General Accounting Office, GAO-RCED-88-44, Dec 1987, Table 2.1, p.14, <http://archive.gao.gov/d30t5/134840.pdf>).

The Superfund program alone is estimated to cost \$1.8 billion annually over the next ten years, not including the historical clean-up costs incurred for this program, or for the costs associated with EPA's Brownfields clean-up program (<http://www.rff.org/books/otherpdfs/Tab.H-9.pdf>).

-- Depletion of non-renewable natural resources,

-- Degradation of renewable natural resources:

"Economic Reasons For Conserving Wild Nature", Andrew Balmford, et al., Science, Vol.297, 09 Aug 2002, <http://www.sciencemag.org>; this report finds that every year's loss of natural habitat from practices such as private sector logging and farming costs around \$250 billion in each subsequent year (<http://www.nature.com/nsu/020805/020805-11.html>).

-- Overshoot (exceedance) of the ecological "carrying capacity" (biocapacity) and "regenerative capacity" of ecosystem services (<http://www.pnas.org/cgi/content/abstract/142033699v1>, and <http://dieoff.org/page13.htm>), and

-- Environmentally destructive expansion of the US "ecological footprint" abroad via direct investment and importation (<http://www.RedefiningProgress.org/publications/ef1999.pdf>).

Furthermore, there is a relatively large corpus of published literature which provide numerous justifications for application of a zero discount rate --- and in some instances --- negative discount rates, within the context of regulatory analyses, particularly those which involve ecological and environmental effects/impacts/issues.

-- The Economy of Nature: Rethinking the Connections Between Ecology and Economics, William Ashworth, Houghton Mifflin Co, 1995, pp. 186-188; In a pseudo-frontier situation such as the one that faced the first European settlers on this continent, it is reasonable to set discount rates according to monetary rates of return on investments and commodities. The continent was pretty close to infinite compared with the tiny footholds the colonists were carving out. There was justification for paying little or no attention to the fact that they were reducing the natural resource and ecosystem services value of the lands they were defacing. But this frontier type of discounting is incorrect for natural resources, because natural systems differ from interest-bearing money and investment accounts in one important way: ecosystems have limits. The amount of biomass in an ecosystem can never exceed the carrying capacity for the land base the ecosystem is built upon. This means that, in a mature ecosystem, growth in one part of the ecosystem always comes at the expense of another part. So the implicit growth (discount) rates of different segments of the ecosystem have to balance out; they will be positive in some places and negative in others, such the overall growth rate is zero. (

<http://www.amazon.com/exec/obidos/ASIN/0395655668/qid%3D986658940/002-6820735-7548060>
)

-- "The Genuine Progress Indicator 2000 Update", Clifford Cobb, Mark Glickman, Craig Cheslog, Redefining Progress, Dec 2001, http://www.rprogress.org/publications/2000_gpi_update.pdf; The general public, policymakers, and media traditionally rely upon the GDP (gross domestic product) as their primary scorecard of the nation's well-being and standard-of-living. If one observed only the GDP, it would appear that economic progress in the United States has been almost continuous (with only relatively brief recessions) since 1950. The GDP grew 79 percent in real terms from 1974-1994. However, the GPI (genuine progress indicator) --- which is a comprehensive measure of national economic health that includes in addition to output, capital growth, and trade, the economic contributions of household and volunteer work, while subtracting the costs associated with social and environmental factors like crime, pollution, nonrenewable resource depletion, traffic accidents, and family breakdown --- grew only two percent (2%) during that same 20-year period [which is an average annual equivalent rate of about 0.1%]. Consumption, employment, and additions to the capital stock are unlikely to sustain the rates of growth recently witnessed. That means the GPI will likely remain flat or decline slightly in the next few years after its recent unprecedented growth, unless other factors such as environmental improvements, offset this downward pressure.

-- "Negative Time Preferences", George Loewenstein & Drazen Prelec, AEA Papers and Proceedings, American Economic Association, May 1991, pp.347-351; this paper concludes that previous psychological work on time preference has focused almost entirely on the trade-off that arises when two outcomes of different dates and different values are compared. The tacit premise was that such judgements will reveal an individual's raw time preference, which may be applied to many different time preference contexts/objects. This paper views this focus as fundamentally incorrect, because as soon as an intertemporal trade-off is embedded in the context of two alternative sequences of outcomes, individuals become more far-sighted, usually wishing to postpone the better outcome to the end; i.e. individuals exhibit a negative time preference (negative discount rate) for those events/objects that are seen as part of a meaningful sequence, having a well-defined starting and ending point (see

<http://sds.hss.cmu.edu/faculty/Loewenstein/downloads/beyondDiscounting.PDF>

and

http://fisher.osu.edu/~butler_267/DAPresent/Philly/MD01-4.pdf).

Recently the US Environmental Protection Agency (EPA) conducted an extensive economics literature review on discount rates and other economics topics, and issued new EPA Economic Analysis Guidance in Sept 2000 (EPA-240-R-00-003;

<http://yosemite1.epa.gov/ee/epa/eed.nsf/pages/guidelines>). This new guidance instructs EPA Economists to apply:

-- Intra-generational discounting: a consumption rate of interest approach of "two to three percent" (2% to 3%) for discounting intra-generational costs and benefits (Section 6.3.1.5, p.48); and

-- Inter-generational discounting: "no discounting" (i.e. 0% discount rate) for inter-generational costs and benefits (Section 6.3.2.4, p.52).

>>> I recommend that OMB revise the 1992 Circular A-94 discount rate for regulatory analysis (which is over ten years outdated), by replacing the seven percent (7%) discount rate, with a policy directing Federal regulatory agencies to adopt: (a) 0.1% discount rate indexed to the GPI (genuine progress indicator per reference above) as the base-case for intra-generational costs/benefits, (b) zero percent (0%) discount rate as base-case for intergenerational effects (e.g. costs/benefits >30 years in the future), as well as (c) advise agencies that they may in addition provide one or more alternative discount rates as a sensitivity analysis, based on unique analytic considerations associated with a particular regulation and regulatory context (e.g. types of economic sectors affected, types of goods/services affected, types of entities affected, time-span of effects, types of effects, etc.).