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cc:

Subject: Comment on Draft Appendix C

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.rpprogress.org/publications/2000\\_gpi\\_update.pdf](http://www.rpprogress.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/beyondDiscountin g.PDF](http://sds.hss.cmu.edu/faculty/Loewenstein/downloads/beyondDiscounting.PDF)  
and  
[http://fisher.osu.edu/~butler\\_267/DAPresent/Philly/MD01-4.pdf](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) 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.).