



ANALYSIS

# The effect of income choice on bias in policy decisions made using cost–benefit analyses

David Courard-Hauri\*

*Drake University, Des Moines, IA 50311, United States*

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## Abstract

Cost–benefit analysis (CBA) is often used in policy decisions to determine the economic value of various choices. Although the effects of income disparity are well accepted, one of the reasons for the success of this type of analysis is that many policy-makers and analysts consider the results of a well-crafted analysis to be largely free of partisan or political bias. Here I propose that tradeoffs between the benefits of various possible jobs or careers introduce a significant bias into values imputed based upon willingness to pay (WTP) measures. In particular, I demonstrate why we might expect the values of various segments of society to be differentially appreciated by CBA. Empirical evidence is presented, indicating that there is a significant negative correlation between the importance an individual places on income and the willingness of that individual to forgo consumption in favor of environmental improvement, as well as a correlation between the importance of income and actual income. These results suggest that CBA as a tool of welfare economics is likely to be biased against environmental protection because concerned individuals are likely to choose careers which do not maximize consumption, thus decreasing their ability to pay for both real and hypothetical environmental improvements. Moreover, the size of this bias appears to be large.

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## 1. Introduction

The study of public economics has three main functions: (1) to understand economic systems, (2) to develop efficient methods for carrying out public policies that have already been decided upon, and (3)

to suggest which policies to implement. The first and second functions have been called *positive economics*, while the third is often termed *welfare economics*. In this paper, I will suggest that the use of economic measures for welfare applications can allow for the de facto preference of one set of values over other sets, thereby inherently biasing the political decisions to which it is applied. This is likely to result in a hidden political advantage for those adhering to the preferred value set.

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\* Tel.: +1 515 271 3812; fax: +1 515 271 3702.

E-mail address: [david.courard-hauri@drake.edu](mailto:david.courard-hauri@drake.edu).

The use of cost–benefit analysis (CBA) in public policy has been growing over the last three decades. Its early use in the review of environmental and health policy began with attempts by U.S. Presidents Nixon, Ford, and Carter to increase executive influence over the regulatory process, under titles such as “Quality of Life Reviews” and “Inflation Alerts”. Then, in 1981, President Ronald Reagan issued Executive Order (EO) 12291 that required agencies to submit Regulatory Impact Analyses (RIAs) on all major proposed regulations for review by the Office of Management and the Budget. This order required that “the potential benefits outweigh the costs” and “of all the alternative approaches to the given regulatory objective, the proposed action will maximize net benefits to society” (for a discussion, see [Morgenstern, 1997](#); [Pildes and Sunstein, 1995](#)). By 1983, the U.S. Environmental Protection Agency (EPA) had issued its *Guidelines for Performing Regulatory Impact Analysis*, which it recently updated in order to reflect the flurry of new activity which this area has undergone ([EPA, 2000](#)). Examples are the *Unfunded Mandates Reform Act of 1995*, Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), and, most importantly, the 1993 Executive Order 12866 (*Regulatory Planning and Review* which superceded EO 12291). This last directive, issued by President Clinton, adds some flexibility for agencies to consider distributional and equity effects, but retains from EO 12291 the requirements for CBA and the examination of alternative approaches. In the mid-1990s, attempts by the Republican-controlled Congress to strengthen CBA requirements failed ([Morgenstern, 1997](#)), but John Graham, George W. Bush’s Administrator of the Office of Information and Regulatory Affairs, has been more active than his predecessors in his enforcement and interpretation of EO 12866 ([EPA, 2000](#); [Graham, 2002](#); [Craig, 2003](#)). CBA is today involved in numerous decisions regarding “whether, when, and how to regulate” ([Portney, 1990](#)).

This increased reliance on CBA in recent years stems largely from a desire to increase reliance on objective, quantitative methods for policy comparison and optimization. Given that not all public projects can be fully funded, CBA allows one to compare various options and reject the allocation of scarce funds to those projects which do not provide sufficient

margin of return or which do not pass some other criterion used in quantitative or semiquantitative decision-making. The classic criticism that CBA ignores things of value which are not traded in markets, or ignores nonuse values like existence value, has been mitigated to some extent by the increasing use of nonmarket mechanisms (hedonic pricing, contingent valuation, etc.) to impute willingness to pay (WTP) for these goods, although standard regulatory cost–benefit analyses continue to apply these techniques conservatively if at all (see, for example, [Johansson et al., 1995](#); [Bateman and Willis, 1999](#); [Farber et al., 2002](#)). The ability of CBA to fully overcome this criticism remains a point of discussion in the literature.

## 2. Biases in cost–benefit analysis

Certain biases in CBA are well known; for example, the fact that the desires of high-income individuals are necessarily preferred over those of low-income individuals (for discussions, see Executive Order 12866; [Zeckhauser, 1981](#); [Railton, 1990](#); [Sen, 2002](#)). However, this bias is present throughout any market economy, and traditional economists point to standard arguments about Pareto efficiency and the ability to address these inequities through progressive tax systems as reasons to leave income weights out of CBA ([Frank, 2001](#)). This discussion is well presented elsewhere (see, for example, [Adler and Posner, 2001](#)).

Individuals who cannot afford to pay for an environmental improvement and so refuse to give a positive value for that improvement on a contingent valuation (CV) survey are often seen to be acting under legitimate budget constraints in their responses ([Soderqvist, 1998](#); [Jorgensen et al., 2001](#)). Given that economists have no claim to particular expertise in questions of social choice, this is usually argued to be an area better left to the policy-makers themselves ([Portney, 1998](#)). Even if one is concerned with the redistributive effects of public policy, CBA is viewed by many policy-makers as a legitimate method for comparing alternate scenarios where scarcity forces such choices to be made.

With this in mind, proponents (and many detractors as well) of CBA generally consider it to be a value-

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