

Incorporating nonmarket time into benefit–cost analyses of social programs: An application to the self-sufficiency project[☆]

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Abstract

Benefit–cost analysis is used extensively in the evaluation of social programs. Often, the success or failure of these programs is judged on the basis of whether the calculated net benefits to society are positive or negative. Almost all existing benefit–cost studies of social programs count entire increases in income accruing to participants in a social program as net benefits to society. However, economic theory implies that the conceptually appropriate measure of the impact of a government program on any group of individuals is the net change in their surplus (or economic rent), rather than the net change in their income. For example, if a social program causes increases in income by increasing work hours, then the lost nonmarket time that accompanies these increases has value that needs to be counted as a cost when assessing the merits of that program. In this paper, we develop a methodology for incorporating lost nonmarket time into benefit–cost analyses of social programs. We apply our methodology to the Self-Sufficiency Project (SSP), an experimental welfare-to-work program tested on a pilot basis in two provinces in Canada during the 1990s. We find that if losses in nonmarket time are ignored, SSP yields a substantial positive net benefit to society. However, if losses in nonmarket time are taken into account, the net societal benefits are greatly reduced, even becoming negative in certain instances. We conclude that future benefit–cost analyses of social programs must take effects on nonmarket time into account in order to give a more accurate picture of the net benefits of the program.

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1. Introduction

Benefit–cost analysis is used extensively in the evaluation of social programs.² Often, the success or failure of these programs is judged on the basis of whether calculated net benefits to society are positive or negative. Almost all existing benefit–cost studies of social programs count entire increases in income accruing to participants in a social program as net benefits to society.³ However, economic theory implies that the conceptually appropriate measure of the impact of a government program on any group of individuals is the net change in their surplus (or economic rent), rather than the net change in their income. For example, if a social program causes increases in income by increasing work hours, then the lost nonmarket time that accompanies increases in work hours has value that needs to be counted as a cost when assessing the merits of that program.

The basic concept is illustrated in Fig. 1, where curve S is the labor supply schedule of an individual who has successfully participated in a program that increased the person's market wage from W_n to W^* . As a result of the wage increase, the individual increases hours of work from h_n to h^* . In the diagram, area A represents the increase in both participant surplus and earnings that would have resulted from the wage increase even if the participant had not increased hours of work. Area B represents an additional increase in both participant surplus and earnings, one resulting from the increase in hours that actually takes place. Finally, area C represents a further increase in earnings that results from the hours' increase. However, this last increase in earnings is fully offset by the individual's loss of nonmarket time. Hence, no change in participant surplus is associated with it. Consequently, although areas A , B , and C are counted as benefits when using the net income change measure of program effects, only A and B , the areas above the labor supply curve, are counted in the conceptually more correct net surplus change measure. As will be seen, this simple model can be readily adapted to many types of programs that increase hours of work, including programs that find jobs for the unemployed and programs that provide financial incentives to work, although some modifications to the simple model are necessary.

In this paper, we develop an empirical methodology for incorporating lost nonmarket time into benefit–cost analyses of social programs. We know of only two previous studies that have attempted to adjust estimates of the net benefits of social programs for losses in nonmarket time. Bell and Orr (1994) make some rough adjustments to attempt to account for losses in nonmarket time resulting from a program that increased work hours by providing on-the-job training in health care for welfare recipients. Greenberg (1997) attempts to adjust four previously completed benefit–cost analyses of welfare-to-work programs that did not take account of losses in nonmarket time resulting from the programs. Both studies find that adjusting for lost nonmarket time substantially reduces estimates of the net benefits of the programs they examined. However, Greenberg (1997) finds that this effect is mitigated for programs that increase hours as a result of augmenting human capital, rather than through other means such as job search or financial incentives.

Our methodology builds on the basic framework of Greenberg (1997), who shows how to estimate lost nonmarket time for mandatory welfare-to-work programs that attempt to increase employment through various combinations of job search services, work experience, and training services. Our extension estimates the value of lost nonmarket time for voluntary programs that increase employment through financial incentives. Our approach differs methodologically from that of Greenberg (1997) in that our estimated losses in nonmarket time are calculated at the individual level, whereas Greenberg estimates such losses at the aggregate level. Because we focus on individuals, our approach in principle should be more accurate. To derive estimated losses at the individual level, our methodology uses micro-data and statistical matching methods to identify responders to financial incentive programs.

We apply our methodology to the Self-Sufficiency Project (SSP), an experimental welfare-to-work program tested on a pilot basis in two provinces in Canada during the 1990s.⁴ We find that if losses in nonmarket time are ignored, SSP yields a substantial positive net benefit to society. However, if losses in nonmarket time are taken into account, the net societal benefits are greatly reduced, even becoming negative in certain instances. We conclude that future benefit–cost

² For example, Greenberg and Cebulla (2006) found that of 71 welfare-to-work programs that were evaluated using random assignment, 50 were subjected to benefit–cost analyses.

³ The economic approach to benefit–cost analysis is also used often in evaluating environmental policies and government investments in physical assets such as dams (see Boardman et al., 2005).

⁴ The methodology developed in this paper could also be applied to other financial incentive programs such as the Earned Income Tax Credit in the United States or the Working Tax Credit in the United Kingdom.

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