

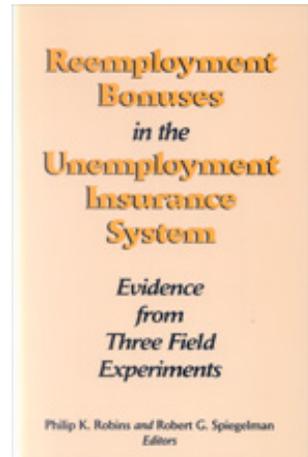
---

Upjohn Institute Press

---

# A Benefit-Cost Analysis of a Bonus Offer Program

Robert G. Spiegelman  
*W.E. Upjohn Institute*



Chapter 7 (pp. 223-247) in:

**Reemployment Bonuses in the Unemployment Insurance System:  
Evidence from Three Field Experiments**

Philip K. Robins, and Robert G. Spiegelman, eds.

Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2001

DOI: 10.17848/9780880994217.ch7

# 7

## **A Benefit-Cost Analysis of a Bonus Offer Program**

Robert G. Spiegelman

### **INTRODUCTION AND METHODOLOGY**

An experiment is run at considerable expense for the purpose of providing information to guide the government in decisions to launch or modify programs. A major advantage of an experiment is that, despite its expense, it is much cheaper than the alternative of inaugurating an expensive program and then discovering that it doesn't work. The second advantage is that an experiment can generate more reliable estimates of program effect than other modes of analysis. To provide policy guidance, the effects of an experiment must be translated into an estimate of the benefits that can be expected to accrue to a program that replicates these experiments.

The process of assessing the positive and negative effects of a program is called benefit-cost analysis (BCA) and involves adding up benefits and costs and providing a present value estimate of the difference, called net benefits. It can be said with some assurance that no program should be launched that doesn't generate net benefits (i.e., net positive effects). However, this statement is not as simple as it seems, since the answer as to whether or not a program generates net benefits depends upon the perspective of the interested party. A benefit to one group may be a cost to another, and neither a benefit nor a cost to a third group. Thus, it will be necessary to compute net benefits from several perspectives.

For an unemployment insurance (UI) bonus offer program, there are five decision-making groups that one should consider: society as a whole, government as a whole, employers, claimants, and the UI system. The ultimate test of a program should be whether or not the pro-

gram generates net benefits to society as a whole. According to the “Kaldor compensation criteria” as defined in Kaldor (1939), any project that generates positive net benefits to society should be undertaken, since winners (those obtaining the benefits) can pay off losers (those bearing the costs) and leave a net surplus. Since society is concerned about the distribution of income as well as its total size, it is probably unjustified to ignore distributional effects in the calculation of social benefits (see Okun 1981, p. 276). However, we have no basis for explicitly assigning monetary values to distributional changes. At a minimum it may be stated that no program should be undertaken that doesn’t meet the criteria of generating net benefits to society.

Within society, the groups most directly affected by a bonus offer are employers and claimants. In an important sense the employer group is represented by the UI Trust Fund, and a program that benefits the trust fund (i.e., results in lower payments out of the fund) is beneficial to employers. Claimants need not be separately considered either. Because the program is totally voluntary, it may be assumed that claimants would not participate unless they perceived a net benefit.

Government as a whole, and the UI system in particular, are the agencies that must implement the program, and they will not do so unless there are net benefits from their perspective. Government is a net beneficiary if the program generates directly or indirectly more revenues than costs. The UI system is the front line agency. The ostensible purpose of a bonus offer program is to reduce the amount of insured unemployment. From the perspective of the UI system, a net benefit arises if the reduction in UI compensation payments exceeds direct costs of the program. If it does not directly benefit from the program, but the government as a whole does, then a transfer of funds among government agencies can be carried out.

The essential structure of benefit-cost analysis from the perspectives of society, government, and the UI system is described more fully in the sections to follow.

## **Society**

For there to be net benefit to society as a whole, there must be an increase in real income greater than the real costs incurred to produce that income. Net benefits to society is the sum of all benefits and costs to the individuals who comprise the society. As shown in Table 7.1,

**Table 7.1 Reemployment Bonus Benefits and Costs by Perspective**

Parameter	Society	Government	UI Trust Fund
Increased output	+		
Value of home time lost	-		
Increased tax receipts		+	
Decreased UI benefit payments		+	+
Bonus payments		-	-
UI administrative costs	-	-	-

real gains to society occur due to increases in the value of output, best represented in this program by the increases in earnings of those responding to the bonus offer by obtaining jobs more quickly.

The real gains, however, are only the net increase in earnings. The additional income due to the more rapid reemployment of participating claimants may be considered the gross increase. To calculate net increase, several deductions should be made. These include loss in wages due to poorer paying jobs (if any), lost income due to displacement of nonparticipants, and any loss in earnings due to entry effects (such loss will only occur if the entry effect results in workers leaving jobs earlier than they otherwise would). In addition, many economists would claim that the benefits to the individual who returns to work more quickly are less than the additional income by the value of the home time that is foregone (see Gordon 1973, pp. 133–206). This issue is discussed further below.

The societal costs are the costs of administering the program. These are the only costs that represent utilization of real resources in the first round. Leaving aside the direct benefits or costs of distributional changes, transfer payments (such as UI compensation and bonus payments) net out to zero in the first round, since they are benefits to one group of members (transfer recipients) and costs to another group (taxpayers). However, the second round effects of additional transfer payments may not be so benign. It is argued by many that increasing government size has deleterious effects on real income. If the net benefits to government are negative, this implies a shift in resources from taxpayers to transfer recipients. Such a transfer would have income

consequences—which might be positive or negative—that shouldn't be ignored. In this analysis, second round effects are ignored, because the bonuses are small relative to total UI payments, and most program options considered here have benefit/cost ratios for the government as a whole close to 1.

## **Government**

Government as a total, not distinguishing either the level of government or any of its functions, represents the whole public body that collects taxes and dispenses public services. Any income taxes generated as a result of additional earnings represents a benefit to government. Any reductions in transfer payments from any of its insurance or welfare programs that result directly or indirectly from increased employment of constituents are also benefits. Thus, a reduction in UI compensation paid is a direct benefit to government. Costs to the government include any costs directly or indirectly associated with government programs that must increase because of the bonus offer. Thus, bonus payments are a direct cost, as is the cost of administering the bonus offer program.

## **The UI System**

We are concerned about the net benefits to the UI system, because it is the agency of the government that would administer the bonus offer program. If such a program does not generate net benefits to this agency, then the program would not be implemented, regardless of its benefits to larger entities, without a conscious transfer of resources. Although the experimental bonus payments were not made from the UI funds, it is logical to assume that bonuses would be paid from the UI Trust Fund in a regular bonus offer program. Thus, costs to the UI system are bonus payments and administrative costs, while benefits are the savings in UI compensation payments to claimants.

## **IDENTIFICATION OF BENEFITS FOR A UI BONUS OFFER PROGRAM**

As previously stated, benefits are defined in terms of the decision-maker's perspective. Under a UI bonus program, increases in output (or real income) are benefits to society. Increased tax revenues represent benefits to government, and reductions in UI compensation payments are benefits to the UI system and government as a whole. Each of these benefits are described in the following sections.

### **Output (Earnings)**

For a bonus offer program, increases in earnings of those responding to the bonus offer represent increases in output, if there are no offsetting losses in output from displacement or entry effects. These earnings changes are a result of net increases in employment that derive from the more rapid return to work, adjusted for any changes in wage rates.

For the bonus experiments, earnings change has two components. The first component is a short-run increase in earnings due to more rapid reemployment after filing for UI benefits. The second component represents earning changes over a longer period of time due to the new job. If earnings on the new (post-unemployment) job differ from earnings on the pre-unemployment job, then there is a change in the rate of earnings that might be attributable to the bonus. These earnings changes are attributed to the experimental treatment if the post-unemployment wages of bonus-offered claimants and controls differ. As discussed in Chapter 5, if job search had been optimal prior to the bonus offer, then taking jobs more quickly could imply taking less satisfactory jobs. This would be expected to show up in participants taking jobs paying lower wages than those being paid to control group members. The overriding evidence presented in Chapter 5 is that the experimental subjects did not take lower paying jobs.

For there to be positive societal benefits from a bonus program, it is essential that there be net positive effects on earnings, since earnings is our measure of societal output. The results of the experiment, as shown in Chapter 5, however, do not encourage us to expect such positive effects. Table 5.3 shows that none of the Pennsylvania or Wash-

ington programs have impacts on earnings that are statistically significant. Only the single Illinois treatment shows statistically significant positive impacts on earnings. Nevertheless, we make estimates of net benefits utilizing the expected value of the impacts, and six of the 10 Pennsylvania and Washington treatment groups have an estimated impact on earnings that is positive.

Reduction in benefits due to entry effects, displacement, or lost value of home activity are outside of the experimentally induced effects and are introduced here in the form of sensitivity tests to show the effects of including reasonable estimates of values of these parameters in the calculation.

### **Tax Revenues**

Any increases in earned income as a result of the bonus offer can be expected to generate increases in tax revenues collected by federal, state, or local governments. These revenues are general to the governmental level and do not automatically accrue to any particular agency, unless they are user fees, which are not considered in this study. No effort is made in this study to precisely estimate income tax burdens, and no estimate is made of other tax payments that may indirectly result from high earnings, such as sales taxes. Most of the bonus recipients would be expected to be in the low (15 percent) federal tax bracket. Adding 7.65 percent for FICA and a small amount for state taxes brings the estimated tax return to about 25 percent of the marginal increase in earned income.

### **Change in UI Compensation**

A direct effect of the bonus offer is to reduce UI compensation that results from the earlier termination of benefit receipts by participating claimants. These estimates are directly measured by differences in UI compensation to experimentals and controls, as described in Chapter 4. Remember, these estimates are for changes in compensation averaged over the entire assigned population; they are not confined to the population of respondents or claimants who collect bonuses. There are several estimates of this difference. For the BCA, we chose to use the adjusted means calculations for Table 4.2 in Chapter 4 to estimate UI

compensation savings in the programs modeled directly on the experimental treatments.

## **IDENTIFICATION OF COSTS FOR A UI BONUS OFFER PROGRAM**

The same issues of identification and association exist for costs as for benefits. Social costs accrue if real resources are used. To the extent that bonus payments exceed the savings in UI compensation payments, there are transfers of resources from taxpayers or lenders to bonus recipients. Distributional effects aside, these do not represent first-round social costs. They would represent costs in future rounds if the redistribution of income resulted in lower real product. Only the costs incurred to administer the program utilize resources in the first round, and thereby represent first-round costs from all three perspectives. If there were more substantial distributional costs, their effects on real output in subsequent rounds would need to be addressed.

Since displacement of nonparticipants (see Chapter 6) reduces the earnings accruing to society, they must be considered a cost, offsetting part (or all) of the benefits derived from additional earnings of participants. In addition, any entry effects of the bonus offer generate additional bonus payments and additional payment of UI compensation, and they therefore represent additional costs to the UI system and the government. Entry effects generate social costs only if the greater use of the UI system is accompanied by a decrease in earned income.

Lastly, the loss of value of home activity needs to be considered. Robert Gordon carefully considered this issue in the context of estimating the revenue costs from job refusal. He estimated the ratio of value of home time to previous after tax wage to be 0.206 (Gordon 1973, Table A-1). This is equivalent to about 15 percent of pretax earnings. In calculating net benefits to society, earnings gains will be offset by the estimated value of lost home time that will occur because of the more rapid reemployment of program participants.

## **Administrative Costs**

The relevant costs are those of an anticipated ongoing program, not the costs of running the experiment or the costs of starting up a new program. Administering the experiment had high costs associated with the research and with an effort to telescope learning time for claimants to bring their program knowledge up to a point roughly equivalent to that which could be expected in an ongoing program two to three years after start-up. The 5- to 10-minute enrollment interviews were several times longer than would be expected in an ongoing program. The additional time was used to assure that the claimants received and processed the information about the program. For instance, a single-page information sheet was given to the claimant, then read to the claimant by the interviewer, who then asked the claimant several questions to guarantee comprehension. In a real program, the interviewer might simply mention the bonus, hand the claimant the explanatory sheet, and tell the claimant to be sure to read it. Administrators in Washington estimate that two minutes per interview would be sufficient. The central staff devoted to the bonus offer would be considerably smaller than that used to operate the experimental program. It might consist of an administrator and one or two assistants, whose time would be taken in processing and auditing bonus claims, assuring that information sheets are available to the local offices, and occasionally training interviewers. Other costs include the costs of communicating disallowances to claimants and operating an appeals process. The estimates of staffing and costs to administer a simple bonus offer program are quite small, totaling only \$3 in 1988 dollars, based on estimates made by the staff of the Department of Human Services in the state of Washington (Table 9-3 in Spiegelman, O'Leary, and Kline 1992)<sup>1</sup> and reproduced as Appendix Table 7A.1 herein. The table shows in detail the derivation of the cost estimates.

## **Bonus Payments**

For the cost calculation, bonus payments are averaged over the total experimental population, just as is the change in UI compensation. Thus, if 10 percent of the eligible claimants each are paid a \$500 bonus, the average cost of the bonus is \$50 per claimant. Chapter 3

provides estimates of the proportion of the eligible population who collected bonuses. These proportions are multiplied by the average dollar value of bonuses paid within each treatment group to provide the estimate of the bonus cost per claimant.

### **Displacement Costs**

Another cost that may or may not arise from the bonus offer program is the loss of earnings by nonparticipants who are displaced from jobs by participants, as described in Chapter 6.

### **Entry Effects**

As discussed in Chapter 6, entry effects are the increases in UI filings caused by the bonus offer. This effect will increase both bonus payments and UI compensation.

## **AGGREGATION OF THE EFFECTS AND INTERPRETATION OF THE RESULTS**

The last step in BCA is the aggregation of benefits and costs. Two methods of calculation are used. First, net benefits are calculated simply as the difference between all benefits ( $B$ ) and all costs ( $C$ ) (i.e.,  $B - C$ ). The second method is to calculate a benefit/cost ratio (i.e.,  $B/C$ ).<sup>2</sup> For society as a whole, net benefits is the most appropriate measure. Even if one doesn't accept the Kaldor compensation criterion (mentioned above) that would result in the acceptance of all projects that generate positive net benefits, it is true that society is not budget constrained and therefore can consider any project generating net benefits. However, governmental agencies operating within budget constraints would tend to use the  $B/C$  ratio, choosing those projects with the highest ratios first, and so on down the line of projects with ratios greater than one until the appropriate budget is exhausted. Both calculations are reported here.

### **Benefit-Cost Analysis of Bonus Offer Program Alternatives from Three Perspectives**

The BCA is conducted for 11 alternative bonus offer programs that replicate the bonus offer treatments in the three experiments. For each program, the BCA is conducted from the perspective of the UI system, the government as a whole, and total society. Each of the benefit and cost components that are used in various combinations to compute net benefits from each of the perspectives are described in the section below.

Tables 7.2 through 7.4 show the benefit-cost comparisons for the six Washington, four Pennsylvania (the declining bonus offer treatment in Pennsylvania is omitted), and one Illinois bonus offer programs.

For many of the program options, societal net benefits are quite large, with B/C ratios in some instances—particularly for the high bonus offer programs—approaching 100 to 1. Large net social benefits and very high B/C ratios occur primarily because the denominator in the ratio is occupied exclusively by administrative costs, which are very low for a bonus offer program. These estimates are based on expected values. If statistical properties were included, the confidence in these estimates would be shown to be quite low. The earnings estimates are particularly weak, because earnings impacts were statistically significant only in the single Illinois offer. The next section, where B/C calculations are made for a set of hypothetical offers making use of the combined data from all of the experiments, the results are much stronger and the impact on UI benefits statistically significant, thereby increasing our confidence in the results to some extent.

The earnings estimates, where they are positive due to increased employment, may overstate net benefits to society because they do not take into account reduced utility for loss of home time (Gordon 1973) and do not show any earnings offset because of displacement of nonparticipants. They also do not take into account the potential entry effect that would result from bonus offers encouraging more job leaving or more layoffs. The displacement and entry effects are discussed below.

For Washington, only the high bonus offers generate net benefits (Table 7.2). Earning effects for low and medium-sized bonus offers were usually negative, although the difference from controls was not statistically significant (see Table 5.3, pp. 159–160).

Illinois shows positive social benefits for its only bonus offer (Table 7.3), which conforms roughly to the mid-level offer in Washington and is somewhat larger than the low bonus offer in Pennsylvania. The Illinois results are consistent with the findings for the long/low-bonus-offer treatment in Pennsylvania but not with Washington, which showed negative social benefits for low- and middle-sized bonuses.

The second perspective is that of total government, including both state and federal. Benefits to government mirror those to the UI system (the third perspective), with the added benefit of tax revenues generated by the additional earnings of participants. With regard to benefits accruing to the government as a whole or the UI system specifically, there are mixed results.

In Pennsylvania, positive net benefits accrue to the government in three of the four programs (Table 7.4). The short qualification/low bonus offer generated negative benefits to the government as a whole, because of the large (though not statistically significant) negative impact on earnings. However, this program generated positive benefits for the UI system, because reduction in UI payments more than covered bonus and administrative costs. Only the short duration/high bonus offer generated positive net benefits to both the government as a whole and the UI system.

In Washington, small positive net benefits accrue to the government only for the long qualification/low bonus and the short qualification/high bonus treatments (see Table 7.2). The other four offers all generated negative net governmental benefits. The small negative number for the long qualification/high bonus offer was the result of the large bonus payments outweighing the positive effects on earnings. For the UI system, positive net benefits were generated by the long qualification/low bonus offer. We tend to discount this result because it is inconsistent with that from all other treatments.

Only in Illinois do we find positive and large net benefits accruing to the government in general or the UI system in particular. Even for the UI system, the program generates a benefit cost ratio of 2.7/1, higher than that generated by any program option—even with higher bonus offers—in Pennsylvania or Washington. Thus, if the results of the Illinois program prevailed, every \$1 spent on the bonus program would result in more than \$2 in reduced UI compensation payment.

**Table 7.2 Benefit-Cost Analysis for Washington Treatments, Four Quarters of Earnings**  
**(\$ are per eligible claimant; ratios are for total program)**

Variable	Short/Low	Short/Med.	Short/High	Long/Low	Long/Med.	Long/High
Change in earnings <sup>a</sup> (\$)	-239	-141	155	-197	-193	296
Change in tax receipts <sup>b</sup> (\$)	-60	-35	39	-49	-48	74
Change in UI benefit payments <sup>c</sup> (\$)	-22	28	117	112	44	135
Administrative costs <sup>d</sup> (\$)	3	3	3	3	3	3
Bonus payments <sup>e</sup> (\$)	29	80	142	46	114	215
Net benefits <sup>f</sup> (\$)						
Society	-242	-144	152	-200	-196	293
Government	-114	-90	11	14	-121	-9
UI system	-54	-55	-28	63	-73	-83
Benefit/cost ratio <sup>g</sup>						
Society	negative	negative	51/1	negative	negative	99/1
Government	negative	negative	1.1/1	1.3/1	negative	0.96/1
UI system	negative	0.33/1	0.8/1	2.3/1	0.4/1	0.6/1

---

<sup>a</sup> Equivalent to earnings increase, calculated as quarterly earnings reported for the treatment group in the quarter of filing plus the quarterly earnings in the subsequent three quarters (from Table 5.3, Chapter 5).

<sup>b</sup> Estimated to be 25% of earnings.

<sup>c</sup> From Table 4.2, Chapter 4. A reduction in benefit payments is shown by a positive value in a cell.

<sup>d</sup> See Table 7A.1, p. 247.

<sup>e</sup> From Spiegelman, O'Leary, and Kline (1992), Table 9-2A, p. 191.

<sup>f</sup> The benefits and costs from the three perspectives are defined as follows:

Society: benefits = increased earnings

costs = administrative expenses

Government: benefits = change in UI compensation + change in tax revenues

costs = bonus payments + administrative expenses

UI system: benefits = change in UI compensation

costs = bonus payments + administrative expenses.

<sup>g</sup> The benefit/cost ratios from the three perspectives are calculated as follows:

Society:  $(\Delta \text{earnings}) / \text{admin. expense}$

Government:  $(\Delta \text{UI comp.} + \Delta \text{tax rev.}) / (\text{bonus pay} + \text{admin. expense})$

UI system:  $(\Delta \text{UI comp.}) / (\text{bonus pay} + \text{admin. expense})$ .

**Table 7.3 Benefit-Cost Analysis for Illinois Treatments,  
Four Quarters of Earnings (\$ per eligible claimant)**

Variable	Total	FSC-elig.	FSC-inelig.
Change in earnings <sup>a</sup> (\$)	250		
Change in tax receipts <sup>b</sup> (\$)	63		
Change in UI benefit payments <sup>c</sup> (\$)	150	228	57
Administrative costs <sup>d</sup> (\$)	3	3	3
Bonus payments <sup>e</sup> (\$)	68	79	55
Net benefits <sup>f</sup> (\$)			
Society	247		
Government	142		
UI system	79	146	-1
Benefit/cost ratio <sup>g</sup>			
Society	83/1		
Government	3.0/1		
UI system	2.1/1	2.8/1	1/1

<sup>a</sup> Equivalent to earnings increase, calculated as follows: quarterly earnings reported for the treatment group in the quarter of filing plus the quarterly earnings in the subsequent three quarters.

<sup>b</sup> Estimated to be 25% of earnings.

<sup>c</sup> From Table 4.2, Chapter 4.

<sup>d</sup> From Table 7A.1, p. 247.

<sup>e</sup> From Spiegelman and Woodbury (1987), Table 5.1, and Davidson and Woodbury (1991).

<sup>f</sup> The benefits and costs from the three perspectives are defined as follows:

    Society: benefits = increased earnings

          costs = administrative expenses

    Government: benefits = change in UI compensation + change in tax revenues

          costs = bonus payments + administrative expenses.

    UI system: benefits = change in UI compensation

          costs = bonus payments + administrative expenses.

<sup>g</sup> The benefit/cost ratios from the three perspectives are calculated as follows:

    Society:  $(\Delta \text{earnings}) / \text{admin. expense}$

    Government:  $(\Delta \text{UI comp.} + \Delta \text{tax rev.}) / (\text{bonus pay} + \text{admin. expense})$

    UI system:  $(\Delta \text{UI comp.}) / (\text{bonus pay} + \text{admin. expense})$ .

**Table 7.4 Benefit-Cost Analysis for Pennsylvania Treatments,  
Four Quarters of Earnings (\$ per eligible claimant)**

Variable	Short/Low	Short/High	Long/Low	Long/High
Change in earnings <sup>a</sup> (\$)	-269	133	166	175
Change in tax receipts <sup>b</sup> (\$)	-67	33	42	44
Change in UI benefit payments <sup>c</sup> (\$)	99	99	67	133
Administrative costs <sup>d</sup> (\$)	3	3	3	3
Bonus payments <sup>e</sup> (\$)	39	60	95	151
Net benefits <sup>f</sup> (\$)				
Society	-272	130	163	172
Government	-10	69	11	23
UI system	57	36	-31	-21
Benefit/cost ratio <sup>g</sup>				
Society	negative	44/1	55/1	15/1
Government	0.76/1	2.1/1	1.1/1	1.1/1
UI system	2.35/1	1.6/1	0.7/1	0.9/1

<sup>a</sup> Equivalent to earnings increase, calculated as follows: quarterly earnings reported for the treatment group in the quarter of filing plus the quarterly earnings in the subsequent three quarters.

<sup>b</sup> Estimated to be 25% of earnings.

<sup>c</sup> From Table 4.2, Chapter 4.

<sup>d</sup> From Table 7A.1. p. 247.

<sup>e</sup> From Corson et al. (1992), Tables IX/2–IX.5.

<sup>f</sup> The benefits and costs from the three perspectives are defined as follows:

    Society: benefits = increased earnings

          costs = administrative expenses

    Government: benefits = change in UI compensation + change in tax revenues

          costs = bonus payments + administrative expenses

    UI system: benefits = change in UI compensation

          costs = bonus payments + administrative expenses.

<sup>g</sup> The benefit/cost ratios from the three perspectives are calculated as follows:

    Society: ( $\Delta$ earnings)/admin. expense

    Government: ( $\Delta$ UI comp. +  $\Delta$ tax rev.)/(bonus pay + admin. expense)

    UI system: ( $\Delta$ UI comp.)/(bonus pay + admin. expense).

It was the substantial positive net benefits generated for the UI system in Illinois that encouraged the U.S. Department of Labor to undertake additional experiments with the goal of selecting an optimal program. The favorable Illinois results were not replicated in Pennsylvania or Washington, however, leaving us with the preponderance of evidence leaning to a conclusion that none of the observed levels of bonus offers are likely to generate net benefits to the UI system. However, the high bonus offers did generate positive societal benefits in both Pennsylvania and Washington, and overall governmental benefits in Pennsylvania. This opens the possibility of undertaking the program by either incurring some of the costs outside of the UI system (i.e., paying bonuses from general revenues) or by transferring funds into the UI system to partially pay the bonus costs.

These results are, however, likely to be optimistic, since they do not yet include the negative corrections for spillover effects as the experiment moves into a full program (see discussion in Chapter 6 and the benefit-cost corrections below).

### **Benefit-Cost Analysis for Four Hypothetical Programs**

Four hypothetical programs were tested using fixed dollar bonuses of \$500 and \$1000 and fixed qualification periods of 6 and 12 weeks. The combined data from the Pennsylvania and Washington experiments were used to determine the effects of these four programs (as reported in Decker and O'Leary 1992). These results provide a somewhat different perspective than the results of the tested treatments that use weekly benefit amount (WBA) multipliers to generate the bonus offer. As noted in the sections above and as seen in Tables 7.2 and 7.4, the high bonus multipliers generate the largest social benefits and usually the larger governmental benefits.

The striking result from combining the data from the two experiments is that all four options produce positive net social benefits. Furthermore, government as a whole benefits from three of the four treatment alternatives, and even the UI system benefits from the low bonus offer (Table 7.5). In the hypothetical treatment, it is still true that the high bonus treatments generated the highest social benefits—because bonus payments are not social costs and administrative costs are indifferent to the size of the bonus offer. However, net benefits to

**Table 7.5 Benefit-Cost Analysis for Hypothetical Treatments,  
Four Quarters of Earnings (\$ per eligible claimant)**

Variable	6 weeks		12 weeks	
	\$500	\$1,000	\$500	\$1,000
Change in earnings <sup>a</sup> (\$)	75	217	8	150
Change in tax receipts <sup>b</sup> (\$)	19	54	2	38
Change in UI benefit payments <sup>c</sup> (\$)	69	105	101	137
Administrative costs <sup>d</sup> (\$)	3	3	3	3
Bonus payments <sup>e</sup> (\$)	45	129	72	183
Net benefits <sup>f</sup> (\$)				
Society	72	214	5	147
Government	40	27	28	-11
UI system	21	-27	2	-49
Benefit/cost ratio <sup>g</sup>				
Society	24/1	71/1	1.7/1	49/1
Government	1.8/1	1.2/1	1.4/1	0.9/1
UI system	1.4/1	0.8/1	1.3/1	0.71/1

<sup>a</sup> Earning increase is positive. Earnings are the earnings in the quarter of filing plus the quarterly earnings in the subsequent three quarters. Source: Decker and O'Leary (1992), Table IV.7, p. 72.

<sup>b</sup> Estimated to be 25% of earnings.

<sup>c</sup> A reduction in UI benefit payments is positive. Source: Decker and O'Leary (1992), T.III.5, p. 52.

<sup>d</sup> From Spiegelman, O'Leary, and Kline (1992), Table 9-3.

<sup>e</sup> From Spiegelman, O'Leary, and Kline (1992), T.II.4, p. 32.

<sup>f</sup> The benefits and costs from the three perspectives are defined as follows:

    Society: benefits = increased earnings

            costs = administrative expenses

    Government: benefits = change in UI compensation + change in tax revenues

            costs = bonus payments + administrative expenses

    UI system: benefits = change in UI compensation

            costs = bonus payments + administrative expenses.

<sup>g</sup> The benefit/cost ratios from the three perspectives are calculated as follows:

    Society: ( $\Delta$ earnings)/admin. expense

    Government: ( $\Delta$ UI comp. +  $\Delta$ tax rev.)/(bonus pay + admin. expense)

    UI system: ( $\Delta$ UI comp.)/(bonus pay + admin. expense).

the government as a whole and to the UI system are larger for the low bonus offer treatments. The results are not particularly sensitive to the length of the qualification period. The low bonus offer dominates because the larger reduction in UI compensation payments caused by the higher bonus offer is totally negated by the higher cost of bonus payments. In fact, these results suggest that a bonus offer of about \$500, with a relatively short qualification period, is optimal from the governmental point of view, generating positive benefits to the government as a whole and to the UI system. The more socially beneficial high bonuses would require some transfer of funds (or additional taxes) to the UI system in order to compensate for their losses to government.

### **ADJUSTMENT TO BENEFIT-COST ESTIMATIONS IN THE MOVE FROM EXPERIMENT TO PROGRAM**

In Chapter 6, the issue of how the results of the bonus experiments can be transferred to an actual reemployment bonus program is discussed. Two of the issues addressed in that chapter are of particular importance to an estimate of the net benefits to be derived from the implementation of a bonus offer program. These are the take-up rates for both UI and the bonus, and secondly, the crowding-out effect of bonus participation.

The UI take-up rates refer to the proportion of unemployed eligible for UI benefits who actually file and receive such benefits. As noted in Chapter 6, this proportion in the three states conducting the experiments was about 65 percent. It may be expected that a bonus offer increases the utility of filing UI claims for eligibles who might not otherwise bother. We will attempt to estimate the effect on the net benefit calculation if the UI participation rate among eligible unemployed increases from 65 to 75 percent. A 15 percent increase in the UI take-up rate is consistent with the estimates by Meyer (1995) in his critique of the bonus experiments.<sup>3</sup> In addition, a 75 percent participation rate is on the high side for most government programs.

The second participation issue is that of the bonus program itself. In Chapter 3, it was estimated that only 55 percent of those eligible to

receive bonuses actually collect them. We attempt to determine the effect on net benefits if this proportion increases to 75 percent.

“Crowding out” is what we call the tendency for bonus program participants to take jobs that would otherwise be occupied by nonparticipants. This issue, addressed in Chapter 6, will increase the unemployment rate of these nonparticipants and therefore impose a cost on both society and the government that is not taken into account in the benefit calculation for the experiment. Using the crowding-out parameters estimated in Chapter 6, we will estimate the effect on net benefits.

### **The Effects on Net Benefits of Increased Take-Up**

Our estimates of the effect on net benefits of increasing the UI take-up rate from 65 to 75 percent is shown in column 2 of Table 7.6. We start with the assumption that this increase in UI take-up has no efficiency implications; that is, there is no change in employment or earnings. It is simply that unemployed persons file for benefits to which they are already entitled and do not change their job search behavior as a consequence. If such additional filing is accompanied by decreased exit or increased entry into unemployment, then there will be additional negative impacts on net benefits. However, considering only the additional UI take-up without efficiency changes, there is still a significant negative impact on net benefits derived by government or the UI system. As seen in Table 7.6, column 2, increasing the UI take-up rate from 65 to 75 percent reduces the positive changes in UI payments from \$69 to \$30 and increases the bonus payment costs from \$45 to \$52 per experimental participant (including nonresponders and responders who do not collect a bonus). The impact on UI payments from additional take-up is calculated using the formula derived by Meyer (1995, Table 7-6). As a result, the positive net benefits from a \$500 bonus offer with a six-week qualification period turn negative for the government as a whole and the UI system.

If the bonus take-up rate increases from 55 to 75 percent without any changes in the UI take-up rate, the bonus cost naturally increases, and the net benefits to government and the UI system decline (as shown in Table 7.6, column 3), but the net benefits to these two constituencies remain positive. Naturally, if both take-up rates increase to 75 percent, the negative effects are larger than either separately (see column 4) and

**Table 7.6 Benefit/Cost of Hypothetical Treatment (6 weeks/\$500) with Additional UI and Bonus Take-Up**

Parameter				
UI take-up rate (%)	65	75	65	75
Bonus take-up rate (%)	55	55	75	75
Variable				
Change in earnings <sup>a</sup> (\$)	75	75	75	75
Change in tax receipts <sup>b</sup> (\$)	19	19	19	19
Change in UI payment (\$)	69 <sup>c</sup>	30 <sup>d</sup>	69	30
Administrative cost <sup>e</sup> (\$)	3	4	3	4
Bonus payments (\$)	45 <sup>f</sup>	52 <sup>g</sup>	61 <sup>h</sup>	70 <sup>i</sup>
Net benefits <sup>j</sup> (\$)				
Society	72	71	72	71
Government	40	-7	24	-25
UI system	21	-26	5	-40

<sup>a</sup> The positive change in earnings is the same as in Table 7.5. It is the earnings change generated by the response to the bonus offer. Source: Decker and O'Leary (1992), Table IV.7, p. 72.

<sup>b</sup> As in Table 7.5, tax receipts to all government is estimated at 25% of earnings gain.

<sup>c</sup> Positive change in UI payment for columns 1 and 3 are the same as in Table 7.5. Source: Decker and O'Leary (1992), T.III.5, p. 52.

<sup>d</sup> Positive change in UI payments for columns 2 and 4, responding to the projected increase in UI take-up rate, is calculated using the formula in Meyer (1995). The formula is change in UI payment (new) = change in UI payment (old) - (av. WBA × av. weeks of benefit receipt for recipients terminating benefits before 6 weeks × change in ratio of new to old UI take-up rate). The average WBA is calculated as the average for the control group in the three states of the ratio of dollars of UI compensation to insured weeks shown in Table 4.1. The average weeks of benefit receipt for recipients terminating benefits is derived using the average of the UI hazard rates for spell lengths less than 6 weeks for the controls in the three states shown in Table 4.5. The calculation is:  $69 - (\$145 \times 1.75 \times 0.154) = 30$ .

<sup>e</sup> From Spiegelman, O'Leary, and Kline (1992), Table 9.3.

<sup>f</sup> From Table 7.5, column 1.

<sup>g</sup>  $\$45 \times \text{ratio of new to old UI take-up rate (i.e., } \$45 \times 75\%/65\% = \$45 \times 1.154 = \$52)$ .

<sup>h</sup>  $\$45 \times \text{ratio of new to old bonus take-up rate (i.e., } \$45 \times 75\%/55\% = \$45 \times 1.36 = \$61)$ .

<sup>i</sup>  $\$45 \times \text{ratio of new to old UI take-up rate} \times \text{ratio of new to old bonus take-up rate (i.e., } \$45 \times 1.154 \times 1.36 = \$70)$ .

<sup>j</sup> Formulas for calculating net benefits are shown in footnote to Table 7.5.

result in negative net benefits to government and the UI system. However, none of these changes in take-up affect benefits to society, since we have hypothesized that these changes would take place without any changes in unemployment and therefore without any earnings impacts. Thus, it is still true that by raising additional taxes to pay the bonuses, society would be better off, even if both UI and bonus take-up rates increase as shown in Table 7.6.

### **The Effects on Net Benefits of Crowding Out**

Crowding out is the term used in Chapter 6 to describe the reduced employment probabilities of unemployed workers who do not respond to the bonus offer. They are either claimants who ignore the bonus offer or nonclaimants who may or may not be eligible for UI. Using column 4 in Table 6.2, we estimate the effect on earnings of crowding out. For the BCA, we estimate the crowding out ratio differently from that in Table 6.2. Since the negative effect on earnings of those UI claimants who do not respond to the bonus have already been included in the earnings impacts reported in Chapter 5 and the previous sections of Chapter 7, the numerator of the crowding-out ratio need only include those workers who are not in the experimental population (i.e., the UI eligible nonclaimants and the UI-ineligibles). Thus, the corrected crowding-out ratio (based on the numbers reported on line 3 of Table 6.2) is  $(103 + 94)/297 = 0.65$ . Since this ratio is based on changes in employment, it is necessary to weight each of the employment impact numbers by appropriate rate of annual earnings. We see below that this correction causes the ratio to fall to 0.5, calculated as follows:

$$(103 \times 5100 + 94 \times 7000)/(415 \times 8200 - 118 \times 8800) = 0.50.$$

The increased earnings of \$75 in column 1 of Tables 7.5 and 7.6 is reduced to \$37.50 due to crowding out. The change in tax receipts is appropriately changed for Table 7.7. Otherwise, the change in UI payments, administrative costs and bonus payments are as shown in Table 7.6. As a result of crowding out, all the net benefits are lower than reported in Table 7.6 due to the reduced positive effects on earnings.

**Table 7.7 Benefit/Cost of Hypothetical Treatment (6 weeks/\$500) with Additional UI and Bonus Take-Up and Crowding Out**

Parameter		
UI take-up rate (%)	65	75
Bonus take-up rate (%)	55	75
Variable		
Benefits (\$)		
Increased earnings <sup>a</sup>	37.50	37.50
Tax receipts	9.38	9.38
UI benefit payments	69	30
Costs (\$)		
Administrative costs	3	4
Bonus payments <sup>b</sup>	45	70
Net benefits (\$)		
Society	34.50	33.50
Government	30.38	-34.62
UI system	0	-44

<sup>a</sup> See text for the calculations. The earnings impact from Table 7.6, \$75, is multiplied by 1 minus the crowding-out ratio of 0.50.

<sup>b</sup> Bonus payment from columns 1 and 4, Table 7.6.

## CONCLUSIONS

The benefit-cost analysis certainly does not provide unambiguous support for a bonus offer program. Based on the Washington and Pennsylvania results, societal benefits are strongly positive for the high bonus program. This finding is influenced by the very low costs of administering the program, and these are the only costs that effect society as a whole. The changes in UI compensation and the bonus payments represent transfer payments and do not enter the benefit-cost calculation for society as a whole. These benefits and costs do enter the calculus for governmental benefits and, in that arena, the bonus offer rarely generates positive benefits to the UI system, as the decreases in UI compensation are usually outgunned by higher bonus

costs. This undoubtedly reflects the payments of bonuses to a large number of UI recipients who would return to work quickly without the incentive of a bonus offer. However, the addition of tax revenues from increased earnings does bring about positive overall governmental benefits in 6 of the 11 program offers (6 in Washington, 4 in Pennsylvania and 1 in Illinois).

By combining all the data in the construction of hypothetical treatments (namely 6- and 12-week qualification periods and \$500 and \$1000 bonuses), the results show large social benefits to high bonuses, and positive benefits to government in three out of four programs, and to the UI system in two of the four programs. This is more encouraging.

A problem arises, however, when we recognize that only half of claimants eligible to receive bonuses actually collect them and when we attempt to correct for entry and crowding-out effects. These effects clearly reduce any net positive benefits from the offer program. However, encouragement might be taken from the fact that, using the combined data and one hypothetical treatment (six-week qualification period and \$500 bonus), even allowing for a 50 percent increase in bonus take-up, 15 percent increase in entry into UI, and a crowding-out effect due to the reduced employment of those not offered or eligible for a bonus, there is still positive net benefits to society as a whole for this bonus offer program.

## Notes

1. This estimate compares with a cost of \$31 per claimant estimated in Pennsylvania. This large difference arises for several reasons. First, while the Pennsylvania estimate deducted costs associated solely with experimental operations, all other demonstration costs were included in the estimates. Second, these costs included sizable costs for central and local office Job Service personnel who were used to make the bonus offer. Third, all costs were also assumed to be variable and no assumptions concerning economies of scale were imposed on the estimates. If, instead, it is assumed that UI staff rather than Job Service staff will provide information on the bonus offer as part of the claims process and if it is assumed that central office supervisory costs are fixed, administrative costs in Pennsylvania equal approximately \$11 per claimant.
2. In order to add together and compare benefits and costs that occur over time, or that occur in different years, it is necessary to discount future effects. In the BCA for a bonus offer, most, if not all, the benefits and costs occur in a single year. A

possible exception would be the longer run earnings effects of accepting less than optimal jobs in order to become reemployed sooner. It might take several years to regain full earning potential. A key issue in discounting is the selection of the discount rate. The long-term Treasury Bond rate is often used and is certainly appropriate for three perspectives considered in this analysis.

3. Meyer (1995) estimated that a \$500 bonus offer with a 10-week qualification period could be expected to increase UI take-up by at least 7 to 12 percent. He claimed that this is an underestimate, making our 15 percent increase reasonable.

## References

- Corson, Walter, Paul Decker, Shari Dunstan, and Stuart Kerachsky. 1992. *Pennsylvania Reemployment Bonus Demonstration: Final Report*. Unemployment Insurance Occasional Paper 92-1, Washington, D.C.: U.S. Department of Labor, Employment and Training Administration.
- Davidson, Carl, and Stephen A. Woodbury. 1991. "Effects of a Reemployment Bonus under Differing Benefit Entitlements, or Why the Illinois Experiment Worked." Unpublished manuscript, Department of Economics, Michigan State University, and W.E. Upjohn Institute for Employment Research.
- Decker, Paul T., and Christopher J. O'Leary. 1992. *An Analysis of Pooled Evidence from the Pennsylvania and Washington Reemployment Bonus Demonstrations*. Unemployment Insurance Occasional Paper 92-7, Washington, D.C.: U.S. Department of Labor.
- Gordon, Robert J. 1973. "The Welfare Cost of Higher Unemployment." *Brookings Papers on Economic Activity* no. 1, Table A-1, p. 181.
- Kaldor, N. 1939. "Welfare Propositions in Economics." *Economic Journal* 49: 549-552.
- Meyer, Bruce. 1995. "Lessons from the U.S. Unemployment Insurance Experiments." *Journal of Economic Literature* 33: 108-109.
- Okun, Arthur. 1981. *Prices and Quantities: A Macroeconomic Analysis*. Washington, D.C.: The Brookings Institution
- Spiegelman, Robert G., and Stephen A. Woodbury. 1987. *The Illinois Unemployment Insurance Incentive Experiments: Final Report*. Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, February.
- Spiegelman, Robert G., Christopher J. O'Leary, and Kenneth J. Kline. 1992. *The Washington Reemployment Bonus Experiment: Final Report*. Unemployment Insurance Occasional Paper 92-6, Washington, D.C.: U.S. Department of Labor.

**Appendix Table 7A.1 Administrative Costs for an Ongoing Bonus Offer Program**

Central office cost (1988 \$)			
1 program administrator and 1 clerical assistant			45,900
Fringe benefits at 28.3%			12,990
Nonpersonnel services at 16% of salary			7,344
Administrative, staff and technical cost at 16.35%			<u>7,505</u>
			73,739
Total new intra-state claims, FY90			227,484
Central office cost per new claim			0.32
Job service center costs <sup>a</sup>			
	<u>Time per operation</u>	<u>Units per claim</u>	<u>\$ per claim</u>
Additional time for the initial claim	2 minutes	1	0.64
Processing bonus payments	4.5 minutes <sup>b</sup>	0.129 <sup>c</sup>	0.19
Allowance	27 minutes <sup>d</sup>	0.129 <sup>c</sup>	1.11
Denials	27 minutes <sup>d</sup>	0.029 <sup>e</sup>	0.25
Appeals			
Lower level	34 minutes		
Higher level	20 minutes <sup>f</sup>	0.002 <sup>g</sup>	<u>0.01</u>
			2.20
Total cost per claimant			2.52
Total cost per eligible claimant (add 16%)			2.92

<sup>a</sup> Costs per minute: JSC Specialist II at 1,776 per month, plus fringe benefits at 28.3%, nonpersonnel services at 16%, and AST costs at 16.35% of salary =  $\$1,776 \times 1.6065 = \$3,705$  per month/9600 minutes per month = \$0.32 per minute.

<sup>b</sup> Allowed time for processing a Continued Claim Form.

<sup>c</sup> Ratio of total bonuses to initial claims in experiment, i.e., 1,816/14,080 (see Table 3.1, Chapter 3).

<sup>d</sup> Time allowed for a nonseparation denial or allowance.

<sup>e</sup> Ratio of NOH and bonus denials to initial claims in experiment, i.e.,  $(278 + 130) \div 14,080$  (see Table 3.1, Chapter 3).

<sup>f</sup> Time allowed for lower and higher level appeals.

<sup>g</sup> Proportion of nonseparation appeals to initial claims:  $0.06 \times 0.029$  (lower) +  $0.01 \times 0.029$  (higher) =  $0.07 \times 0.029 = 0.002$ .



# **Reemployment Bonuses in the Unemployment Insurance System**

**Evidence from Three Field Experiments**

Philip K. Robins and Robert G. Spiegelman  
Editors

2001

W.E. Upjohn Institute for Employment Research  
Kalamazoo, Michigan

**Library of Congress Cataloging-in-Publication Data**

Reemployment bonuses in the unemployment insurance system : evidence from three field experiments / Philip K. Robins and Robert G. Spiegelman, editors.

p. cm.

Includes bibliographical references and index.

ISBN 0-88099-225-5 (pbk. : alk. paper)—ISBN 0-88099-226-3 (cloth : alk. paper)

1. Insurance, Unemployment—United States—States—Case studies. 2. Welfare recipients—United States—States—Case studies. 3. Bonus system—United States—States—Case studies. 4. Insurance, Unemployment—Illinois. 5. Insurance, Unemployment—Pennsylvania. 6. Insurance, Unemployment—Washington (State). I. Robins, Philip K. II. Spiegelman, Robert G.

HD7096.U5 R35 2001

331.13'77—dc21

2001026848

© 2001 by the  
W.E. Upjohn Institute for Employment Research  
300 S. Westnedge Avenue  
Kalamazoo, Michigan 49007-4686  
All rights reserved.

The facts presented in this study and the observations and viewpoints expressed are the sole responsibility of the authors. They do not necessarily represent positions of the W.E. Upjohn Institute for Employment Research.

Cover design by J.R. Underhill.  
Index prepared by Leoni Z. McVey.  
Printed in the United States of America.

01 02 03 04 05 06 8 7 6 5 4 3 2 1