When Financial Work Incentives Pay for Themselves: Evidence from a Randomized Social Experiment for Welfare Recipients

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Abstract

This paper summarizes early findings from a social experiment that provided financial incentives for new welfare recipients to leave welfare and work full-time. The financial incentive was essentially a negative income tax with a requirement that people work at least 30 hours per week. Early results show that the financial incentive increased full-time employment, earnings, and income, and reduced poverty. Furthermore, at the end of the period discussed in this paper, the program was paying for itself through increased tax revenues.

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Policy-makers have struggled for decades to design an income support program that provides an adequate safety net while promoting economic self-sufficiency. Versions of the Negative Income Tax (NIT) that were tested in the 1970s, for example, guaranteed families income above the poverty threshold, but they discouraged work and marriage (Robins, 1985; Hum and Simpson, 1991; Groenevald, Tuma, and Hannan, 1980). Enhanced earnings disregards that allow welfare recipients to keep more of their welfare benefits when they work have encouraged some people to work, but allowed others to cut back their work effort so that they have generated little or no effects on average hours of work and earnings (Moffitt, 1992; Michalopoulos and Berlin, Forthcoming). Likewise, the Earned Income Tax Credit (EITC) is thought to have encouraged many low-income parents to work but high marginal tax rates and income effects have raised concerns that some parents will cut back their work effort (Meyer and Rosenbaum, 2001; Hotz and Scholz, 2001).

This paper describes the results of an approach that was tested as a pilot program in two Canadian provinces in the 1990s. The Self-Sufficiency Project (SSP) provided a generous, time-limited earnings supplement available to single parents who had been on welfare for at least a year, and who subsequently left welfare and found full-time work. By targeting supplements at this somewhat narrow group of welfare recipients who were relatively unlikely to work on their own and by rewarding only full-time work, the designers of SSP hoped to raise the incomes of low-wage workers with little or no increase in government costs, and with few negative side-effects in the form of work cutbacks.

The SSP "applicant study," which is the focus of this paper, included about 3,000 single parents from Vancouver and lower mainland British Columbia who started a new welfare spell between February 1994 and February 1995. This paper describes the effects of the supplement offer for these new welfare recipients through 30 months after they were offered the earnings supplement. One objective of the applicant study was to ask whether new welfare recipients would stay on welfare longer in order to qualify for the supplement. An earlier paper found that there was a small "delayed exit effect" (Card, Robins, and Lin; 1998). The Self-Sufficiency Project also includes a separate study of long-term welfare recipients who were immediately eligible for the supplement. Results from this

"recipient study" have been published elsewhere (Card and Robins, 1998; Michalopoulos et al., 2000) and are summarized below.

The paper is organized as follows. Section I describes the applicant study, the earnings supplement, the data sources, and the sample used in the analysis. Section II outlines how the supplement offer was expected to affect behavior. Results from the study are summarized in Section III, which focuses on how many people took up the supplement offer, and Section IV, which describes its effects on employment, earnings, income, and public expenditures. In Section 5, the generalizability of the results to other samples are examined, by comparing them to results from the recipient study. The paper concludes with a short summary.

I. Description of SSP and the Applicant Study

A. The SSP Earnings Supplement

SSP's earnings supplement was broadly similar to the negative income tax (NIT) programs that were evaluated in the United States and Canada in the 1970s (Robins, 1985; Hum and Simpson, 1991). It differed in several key ways from a conventional NIT, however. First, eligibility for the SSP supplement was limited to single parents who had been on welfare for at least a year. This restriction targeted SSP benefits to a disadvantaged group that normally experiences difficulty in the labor market. At the same time, the requirement of a full year on welfare substantially reduced the incentive for people to enter the welfare system in order to receive the supplement. A second feature of SSP is that benefits were available only to people who worked 30 hours or more per week (which is considered to be "full time" in this paper) and who left welfare. This restriction was intended to limit the ability of parents to use income from the supplement to cut back their work effort, as occurred in the NIT experiments. In addition, unlike the conventional NIT, the SSP supplement varied with individual earnings rather than family income, and was therefore unaffected by family composition, other family members' earnings, or unearned income. Finally, supplement payments were available for a maximum of three years beginning with the first month the supplement was received, but only to sample members who initiated SSP payments within 12 months of their initial eligibility.

SSP's supplement offer was quite generous compared to the existing welfare system. It paid parents who worked 30 or more hours per week an amount equal to half the difference between their actual earnings and a target (or breakeven) level of earnings. At the beginning of the study, target earnings were set at $37,000 in British Columbia, and they have been adjusted slightly over time to reflect changes in the cost of living and in the generosity of welfare benefits. A participant in British Columbia who worked 35 hours per week at $7 per hour earned $12,740 per year and collected an earnings supplement of $12,130 per year (($37,000-$12,740)/2), for a total gross income of $24,870. In comparison, if that participant had two children and decided to receive welfare without working, her annual income would be only $17,111. If she worked 35 hours per week and continued to receive welfare, her income would be $19,511. When tax obligations and tax credits are taken into account, most families had incomes $3,000 to $7,000 per year higher with the earnings supplement than if they worked the same number of hours without the supplement.

B. The Applicant Study

Recruitment into the SSP applicant study began in February 1994 and was completed in February 1995. Each month, Statistics Canada used administrative records to identify all welfare recipients in selected geographic areas in British Columbia who were single parents 19 years of age or older, and who had not received welfare in the previous six months. Statistics Canada then selected a "fielding sample" to contact, interview, and invite to be part of SSP's applicant study.

A group of 3,316 single parents were selected according to these criteria and subsequently completed a baseline interview and signed an informed consent form agreeing to be part of the study.[1] Immediately after the baseline interview, each of these single parents was randomly assigned to either the program group, which was offered the opportunity to receive SSP supplement payments, or a

[1] An additional 67 people completed the baseline interview and were randomly assigned, but were later removed from the study either because they had not been off welfare for enough months or were already off welfare before they completed the baseline interview (59 people) or because they asked to be removed from the study (8 people). In addition, 832 applicants were selected by Statistics Canada but did not become part of the study because they did not complete a baseline interview or did not sign an informed consent form agreeing to be part of the study. According to interviewers, many people did not complete the baseline interview because they had already left welfare. Among people who were still receiving welfare but refused to participate, many felt that they would be off welfare very quickly (some were receiving welfare because they were waiting to receive unemployment insurance benefits) and were reluctant to take part in an experiment designed for welfare participants. The exclusion of these people from the sample is likely to have resulted in overstated estimates of impacts, because these short-termers would have been unlikely to respond to the SSP offer.

control group, which was not (1,677 were assigned to the program group and 1,706 were assigned to the control group). Those assigned to the program group were informed that if they stayed on welfare for a full year, they would become eligible for the SSP earnings supplement.[2]

Program group members who became eligible for SSP by staying on welfare for 12 of the 13 months after their spell began were informed by mail of their status and invited to attend an orientation session describing the SSP program in more detail. Ninety-four percent of them attended such a session. These "eligible applicants" were given one year in which to find a full-time job, leave welfare, and initiate SSP payments. Those who initiated the supplement during this window could then receive supplement payments during the next three years — beginning with the month in which they first received supplement payments — provided that they continued to work 30 or more hours per week. Program group members who took up the supplement could return to welfare at any time if they met the normal eligibility requirements of welfare, but they could not receive welfare and supplement payments simultaneously. Operational details of the supplement program are described Card and Robins (1998).

C. Data Sources and Sample Characteristics

Participants in the applicant study are being followed for a period of six years, with surveys at approximately 12, 30, 48, and 72 months after random assignment. This paper uses administrative data and information from the baseline, 12-month, and 30-month surveys of sample members to study the effects of SSP during the first two-and-a-half years of the study, or 18 months after most members of the program group could have begun receiving the supplement. Results from the 48-month and 72-month surveys were not yet available when this paper was written. Whereas administrative records provided information on welfare benefits and SSP supplement payments, all other information came from the survey and was not available from administrative records. This included information on

[2] Another group that could potentially become eligible for the SSP earnings supplement are people not on welfare, who could be induced by the supplement offer to begin receiving welfare to qualify for the supplement. This group was not enrolled in the SSP applicant study because it was assumed that their response would be small compared to the "delayed exit effect" of people already on welfare. However, in aggregate, this group could be large enough to significantly affect program costs. An estimate of its likely size is presented below.

employment, hours of work, hourly wages, earnings, and other sources of income.[3] The analysis in this paper is limited to the 2,852 participants who responded to the 30-month survey (1,430 control group members and 1,422 program group members).

Table 1 presents information about the survey respondents at the time of random assignment.[4] Reflecting the fact that the applicant sample was comprised of single parents on welfare, nearly all were female, most had one or two children, and a bit more than 20 percent had never been married.[5] In addition, virtually all had some work experience but had not worked in the recent past. Reflecting the fact that sample members had recently applied for welfare, they had spent only three months on welfare on average in the two years prior to entering the study.

Consistent with random assignment, the baseline characteristics of the program and control groups were generally quite similar. In particular, the employment and welfare history of the two groups were virtually the same: both program group and control group members had received welfare for about three months on average in the two years prior to random assignment, nearly all sample members had worked for pay prior to random assignment, and about one-fourth of both groups were working at the time of random assignment. In each case where the differences between the two groups were statistically significant, those differences were fairly small and were for secondary characteristics that were not the target of the intervention and are not analyzed in this paper. When differences between employment and earnings after random assignment were adjusted for pre-random assignment differences using least squares, the results were no more than about one-half a standard

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[3] The surveys also include a great deal of other information, including information on education, household composition, expenditures on a few basic necessities, child care, and attitudes toward welfare and work. Results on these outcomes are not discussed in the paper because they were not the primary focus of the program. Those that are more directly related to employment or income, such as expenditures and child care, changed in expected ways. Others, such as household composition and education, were generally not significantly affected by the program.

[4] Baseline characteristics for survey respondents were quite similar to characteristics of the full sample. Differences between respondents in the program and control groups that are statistically significant in Table 1 were also statistically significant for the entire applicant sample. In addition, the effects of the program on welfare and SSP supplement payments (which came from administrative records which were available for the full sample) were about the same whether they were calculated using survey respondents or the full applicant sample. See Appendix A of Michalopoulos, Robins, and Card (1999) for details.

[5] The sample was much less diverse than the welfare population as a whole in British Columbia, where single individuals and two-parent families can also receive welfare under the same system as single-parent families. In 1995, for example, about 56,000 of the approximately 220,000 or so welfare cases were single-parent families. (Ministry of Social Development and Economic Security, 2001).

error different from the results presented in this paper (which are the raw differences in mean outcomes for the program and control groups). Moreover, impacts that were statistically significant in the tables shown below were also statistically significant when adjustments were made for pre-random assignment differences between the program and control groups.

II. Predicted Effects of the Supplement Offer

The design of the SSP supplement offer essentially divided people's decisions into two periods. In the year after random assignment, people could establish eligibility for the supplement by staying on welfare for 11 of the 12 months following their acceptance into the welfare system (or 12 of 13 months in total, including their first month on welfare). Those who established eligibility in this way could initiate supplement receipt by finding qualifying full-time work and leaving welfare in the next year. After that second year, the incentives under SSP remained constant. People who had initiated supplement payments could continue to receive them, but those who never established eligibility or never initiated supplement payments had no ongoing extra financial incentive to work.

The expected effects of the supplement offer are different during these two periods. During the first year, when people were establishing eligibility for the supplement, those who thought they might someday use the supplement had a clear incentive to stay on welfare to establish eligibility for the supplement. Thus, the main effect of SSP during the first year should have been an increase in welfare receipt. If maintaining welfare receipt discouraged people from working, there might have been an accompanying decrease in employment. If, on the other hand, the supplement offer encouraged people to work while on welfare in preparation for finding full-time employment later, the program could have increased employment during this first year.

During the second year, when people could initiate supplement receipt by leaving welfare and working full time, the program clearly increased the incentive to work at least 30 hours per week. To the extent that people who responded to the supplement offer by working 30 or more hours per week would not have worked, the program would have increased employment overall. To the extent that it encouraged people who would have otherwise worked fewer than 30 hours per week to work more hours, the program would have decreased part-time employment and increased full-time employment.

Although the expected effects on employment are clear, the effects on hours of work and earnings are not. People who would not have worked in the absence of the supplement would increase their hours of work and earnings. However, people receiving the SSP supplement lost 50 cents from the supplement with each additional dollar of earnings (up to the target level of earnings), and they faced a positive marginal tax rate from payroll and income taxes. Combined with the income effects stemming from increased income from the supplement, those who would have worked more than 30 hours per week may have been encouraged by the supplement to cut back their work effort (though never to fewer than 30 hours per week). Moreover, the income coming from the supplement may have allowed them to accept lower-wage jobs than they otherwise would have, either to speed their entry into work to take advantage of the supplement or as a pure income effect that allowed them to take jobs that had other advantages, such as being closer to home or involving less stressful or less dangerous work. For this group, therefore, SSP may have reduced work effort and reduced earnings.

The overall effect of SSP on hours of work, hourly wages, and earnings depends to some extent on the size of these two groups, and on the extent to which demand-side and institutional constraints allow individuals to cut back their hours of work. Because most welfare recipients were not working at the time of random assignment, however, the expected effects on hours of work and earnings are likely to be positive.

III. Supplement Receipt

A. Establishing Eligibility

Using administrative records, Figure 1 shows the proportions of program and control group members on welfare by month, starting one year before random assignment and continuing to 36 months after, or about six months past the 30-month interview. Also shown in the graph is the program impact, defined as the difference between the program and control groups in the proportion on welfare. The figure clearly shows the distinct periods of the SSP applicant study, and confirms that the program group acted according to its economic incentives.

Prior to random assignment (months –12 to –1), the two groups received welfare at nearly identical rates, as is to be expected because the groups were randomly assigned, and because individuals were chosen for the study because they had not been on welfare recently.[6]

In the year after random assignment, the program group was more likely to receive welfare, reflecting the notion that program group members delayed leaving welfare in order to establish eligibility for the supplement.[7] The difference in welfare receipt reached a peak in month 9 when about 69 percent of the program group and 64 percent of the control group received welfare. Looked at another way (not shown on the figure), about 60 percent of the program group and 56 percent of the control group remained on welfare long enough to satisfy the eligibility rule for SSP.

In the second year after random assignment, program group members who had established eligibility for the supplement had to leave welfare to receive the earnings supplement. As a result, they were less likely to receive welfare starting in about month 14 and continuing for the remainder of the follow-up period. By month 25, which corresponds to the end of the 12-month window for taking up the supplement, the welfare receipt rate of the program group is about 12.5 percentage points *below* the welfare receipt rate of the control group.

B. Supplement Take-Up by Eligible Applicants

Figure 2 shows the proportion of program group members who ever initiated supplement payments and the proportion who were receiving supplement payments in a given month, starting in the 12th month of the follow-up period. These supplement take-up rates are shown both as a proportion of the eligible program group (those who were on welfare for 12 of the 13 months following the beginning of their spell) and as a proportion of the overall program group. Over the

[6] Welfare receipt rates are not 0 in the months immediately before random assignment because finding people and enrolling them in the program took some time. Most program group members (72.4 percent of the sample) began their new welfare spell in the month before they were randomly assigned, but about 18 percent had received welfare for two months prior to random assignment, about two percent had been on welfare for three months prior to random assignment, and a handful of people were on welfare for more than three months prior to random assignment.

[7] Although SSP was designed to estimate this delayed exit effect, it was not designed to estimate an entry effect resulting form people coming onto welfare in order to receive the supplement offer. The small delayed exit effect implies that this entry effect would be extremely small, although potentially a large number of people could be involved, depending on how many single parents do not typically receive welfare and on their knowledge of the programs. For a discussion of entry effects in welfare programs, see Moffitt (1992), Moffitt (1996). Meyer (1995, 1996) also discusses entry effects in the context of a reemployment bonus program under unemployment insurance.

year following notification of supplement eligibility, the proportion of applicants who ever received the supplement gradually increased, reaching a plateau of about 26 percent of the overall program group (or 44 percent of the eligible program group) in month 27.[8] The proportion of the program group receiving SSP each month also rose through the second year, reaching a peak in month 26. At the peak, substantially fewer eligible program group members were receiving SSP than had *ever received* SSP. The gap between the proportion who ever received SSP and those who received payments at the end of the follow-up period represents the proportion of people who started and then left full-time jobs. These participants could receive SSP supplement payments in later months, if they returned to full-time employment.

IV. Impacts of SSP on Employment, Income, and Net Public Expenditures

Although a sizable proportion of the program group received SSP payments, a key issue is whether supplement takers would have worked full time in the absence of the program. If so, the supplement was essentially a "windfall" income gain that rewarded people who did not change their behavior. In this case, there would be no differences in full-time employment between program and control group members. The alternative is that some, or even most, supplement takers would not have left welfare and worked full time without the availability of the supplement, in which case full-time employment would be different between program and control group members.

A. Impacts on Employment and Earnings

Table 2 shows the effects of SSP on employment, hours, and earnings using data collected in the 30-month follow-up survey. As can be seen in the table, SSP increased full-time employment by roughly 12 percentage points in quarter 9. Moreover, the increase in full-time employment was about equal to the increase in total employment, indicating that the supplement offer had little effect on part-time employment. In other words, virtually all of the program's effect on employment resulted from the fact that people who would not otherwise have worked were persuaded to work full time.

[8] Although program group members had only 12 months to initiate an SSP payment after being informed of their eligibility status, and most members of the program group were informed of their eligibility status in month 12 or 13, the fraction who ever received SSP continues to rise until month 27. This discrepancy reflects delays in verifying jobs and processing SSP cheques, as well as the fact that few individuals accepted full-time jobs in the last few weeks of their SSP eligibility window.

In quarter 9, SSP also increased hours worked by 20 per month. If the increase in hours of work were due only to people who otherwise not have worked, then new workers averaged about 165 hours of work per month (20/0.121), which is consistent with the expectation that people who began to work because of SSP worked full time.

Perhaps the most striking result shown in Table 2 is the relatively large estimated program effect on earnings. The impact on earnings rose throughout the follow-up period, reaching a peak of $242 per month in quarter 9, or about $2,000 dollar per month for every person who went to work because of the supplement offer ($242/0.121). This implies that new workers earned an average hourly wage of about $12 ($242/20 hours), considerably above the British Columbia statutory minimum wage of $7.

B. Estimated Windfall

As indicated above, SSP provided a "windfall" to people who would have worked full time without the supplement offer but who are nevertheless receiving supplement payments. An estimate of this windfall is the difference between the percentage receiving supplement payments and the impact on full-time employment. In quarter 9, 18.3 percent of the applicant sample received supplement payments, while SSP increased full-time employment by 12.5 percentage points. These figures suggest that 5.8 percent of the applicant sample, or about 30 percent of all supplement takers, were windfall cases who would have worked full time without the supplement offer near the end of the first year.

This estimated windfall is much lower than for some other programs that have supplemented earnings to encourage work. For example, an enhanced earnings disregard in a random assignment study in Minnesota did not affect employment among welfare applicants, but increased the number of people who combined work and welfare and thereby received the program's earnings supplement (Miller et al (1997), Table 4.11.).[9] Likewise, a random assignment study of a time-limited welfare program in Connecticut that allowed welfare recipients to keep their entire welfare check when they

[9] The Minnesota study included tests of two related programs. One program, which is referred to as "incentives only" in Miller et al. (1997), contained the enhanced earnings disregard. A second program contained the enhanced disregard, but

went to work did not increase employment among welfare applicants, but did increase the number of applicants who received welfare (Bloom et al (2000), Table 4.9). In contrast, both programs increased employment of long-term welfare recipients. One interpretation of these findings is that welfare applicants in Minnesota and Connecticut who received the earnings supplements would have worked without the supplements, and therefore were all windfall recipients.

Programs like the EITC also appear to have many windfall recipients. Estimates from Meyer and Rosenbaum (Forthcoming) imply that expansions of the EITC since the early 1980s encouraged about 800,000 single parents to work; other research indicates little or no increase in work by married parents (Eissa and Hoynes (1998)). According to Hotz and Scholz (2001), the number of families claiming the EITC increased by about 13 million between 1984 and 1996, and nearly 20 million families received the EITC in 1996. Since about 3 million workers without children currently receive the EITC, this suggests that the expansion increased the number of families receiving it by 10 million, many times more than the number who began working in response to the expansion.

Differences in the policies may explain the apparently smaller amount of windfall in SSP. SSP required people to be on welfare for a year before receiving its earnings supplements, but neither the welfare earnings disregards nor the EITC had such a requirement. As a result, people who left welfare quickly were ineligible for SSP's supplement, but would have been eligible for the welfare earnings disregard, and all working poor families are eligible for the EITC. SSP also required people to find full time work within a year of establishing eligibility, but someone in Minnesota or Connecticut could have received the enhanced disregard whenever they found employment, as long as they stayed on welfare and had low enough earnings to qualify for welfare. As a result, some people who could not find work within a year did not receive the earnings supplement in SSP but might have been windfall recipients in the U.S. welfare studies. SSP required people to work 30 hours or more per week, but the EITC and welfare programs in Minnesota and Canada rewarded both part-time and full-time work. Thus, some people who would have worked part time without the

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also required people to look for work or enroll in education or training to receive their full welfare benefits. Windfall results presented here are for the incentives only program since it was a test of an earnings supplement by itself.

supplement and who did not change their work behavior were windfall recipients in the U.S. welfare studies but not in SSP. Other policies may also help explain the difference. For example, the EITC may have encouraged control group members in the U.S. studies to work — thus increasing the number of windfall recipients in those studies — but the EITC does not exist in Canada.

C. Impacts on Hourly Wage Rates and Weekly Hours Worked

As mentioned above, SSP's effects on earnings and hours of work are consistent with the notion that people who went to work because of the program earned $12 per hour on average and worked full time. Table 3 explicitly explores the question of how SSP affected hourly wages and hours worked by showing the distributions of wages and hours in the 25th month of the follow-up period, which was the latest month for which information was available for all 30-month respondents.[10]

In the 25th month, 12.5 percent more program group members than control group members were working. SSP's impact on jobs that paid wages between $7 and $8 per hour was nearly 40 percent of the impact on employment (4.8/12.5 = 38 percent). An equally large proportion of the impact on wages occurred at wages of $10 or more per hour (4.7/12.5 = 37 percent), or $3 or more above the minimum wage. Thus, SSP resulted in increases in both low-wage jobs and relatively high-wage jobs.

The second panel of Table 3 shows that the impact on the number of people working the minimum level of 30 hours per week was about 20 percent of the total employment impact (2.5/12.5). Similar calculations reveal that the impact on working 31–39 hours is between 35 and 40 percent of the total employment impact (4.8/12.5), as is the impact on working 40 or more hours per week (4.4/12.5). The last finding is worth noting: even though SSP provided little incentive to work more than 30 hours per week, it increased the number of people who worked at least 40 hours per week.

[10] Measures of wages and hours worked were derived from survey responses. The surveys asked each individual to indicate the number of hours they worked and how much they were paid for each spell of each job they held. Individuals were allowed to indicate an hourly wage or a weekly, monthly, semi-monthly, or annual salary. They were also allowed to specify the hours they worked per day, week, or month. For individuals who indicated a pay period other than hourly, the hourly wage was calculated as earnings divided by hours worked.

This may imply that demand-side and institutional constraints prevented those who took up the supplement from working the minimum of 30 hours per week.

Program group members who would have worked without the supplement offer may have taken advantage of the income provided by the supplement to accept lower wage jobs than they otherwise would have. These jobs might have provided other advantages, such as being close to home or involving less stressful work. Likewise, income and substitution effects may have encouraged those who would have worked more than 30 hours per week in the absence of the supplement to cut back their hours of work in response to the supplement offer. While it is not possible to use differences between the program and control groups to learn how any one individual changed her behavior in response to the supplement offer (Manski, 1996), the distribution of wages and hours worked can provide some relevant information. Specifically, if fewer people earned high wages in the program group than in the control group, this implies that some people took lower wage jobs than they would have. Likewise, if fewer people worked many hours in the program group than in the control group, this implies that the supplement offer encouraged people to work fewer hours.

Table 3 provides no evidence that either effect occurred. More people in the program group than in the control group were earning at least $15 per hour, which is the highest wage category shown in the table, and SSP increased employment at all levels of work effort that would qualify a program group member for supplement payments.

Of course, this is not definitive evidence that SSP did not encourage work cutbacks or lower-wage employment. It is possible, for example, that some people accepted lower wage jobs than they otherwise would have, but that other people went to work at relatively high wages because of the supplement. Likewise, it is possible that some people who went to work because of the supplement worked more than 40 hours per week while others who would have worked more than 40 hours per week cut back their work effort. Table 3 shows only that the number of people who cut back their work effort or took lower-wage jobs is smaller than the number who took relatively high-wage jobs or worked relatively long hours because of the supplement offer.

D. Impacts on Income, Poverty, and Net Public Expenditures

Programs that supplement earnings typically increase the amount of cash transfers that are paid out. This was true of the NIT (Robins, 1985), and it appears to be true of welfare earnings disregards (Moffitt, 1992; Michalopoulos and Berlin, Forthcoming). Table 4 shows evidence on this issue for SSP by summarizing the effect of the program on cash payments, income, and projected taxes. All income amounts shown in Table 4 are monthly averages over the six-month period prior to the 30-month survey. Taxes and tax credits were imputed for each participant on the basis of income data for this six-month period.

On average over this period, SSP increased earnings by $223 per month and increased cash transfer payments by $57 per month ($154 more in supplement payments, offset by $97 less in welfare payments). However, SSP supplement takers paid payroll taxes on their earnings and income taxes on their earnings and supplement payments. On average, in fact, program group members paid $78 more in taxes than did control group members. On balance, then, SSP generated a small but statistically insignificant savings in net transfer payments. Even though increases in taxes and reductions in welfare payments more than offset SSP supplement payments, participants gained $174 per month in after-tax income. As a consequence, SSP reduced the proportion of families in poverty (income below Statistics Canada's low income cut-off) by more than 11 percentage points.

Of course, the cost calculations shown in Table 4 apply only to the six-month period preceding the interview. They also understate the cost of the program because they ignore other elements of government expenditures, such as administrative costs and the costs of child-care subsidies. They may also understate the cost of an ongoing program if knowledge of the program increased over time, causing more people to take advantage of the program or making them more able to take advantage of the program by finding full-time work.

Table 4 also understates the cost of the program because it ignores the possibility that people might begin receiving welfare in the hope of eventually receiving the supplement. Although it is impossible to say how many people would respond in this way, it seems likely that the number would be small. Only about four percent of the applicant sample prolonged their stay on welfare to become eligible for the supplement, even though they had already begun receiving welfare (Card, Robins, and

Lin; 1998). The incentive for someone who is not in the welfare system to begin receiving welfare, then to stay on welfare a year, and then to takeup the supplement should be considerably lower.

During the mid 1990s, about 40 percent of single parents in British Columbia were not on welfare (Ministry of Human Resources, 1996). If 1 percent of them began receiving welfare to qualify for the supplement, this would increase the welfare caseload by 0.67 percent (40*0.01/60). This would have added about 10 people to the SSP applicant study (0.67 percent added to the caseload of about 1,500 program group members on welfare at the time of random assignment). If each of the additional 10 people would have received the supplement by working 35 hours per week for $12 per hour — typical numbers as shown in Table 3 — they would have received supplement payments of $700 per month, which would have added less than $5 to the monthly cost of the program per program group member during the six months prior to the end of the follow-up period.[11]

V. Can the Results Be Generalized?

Results in the SSP applicant study were remarkable in some respects. In particular, many people who responded to the supplement offer earned relatively high wages considering that they had been on welfare, and the program did not appear to increase after-tax cash transfer payments. An important policy question is whether the results can be generalized to other samples. This section addresses this issue by comparing results from the applicant study to a second SSP study that was targeted at long-term welfare recipients.

In the SSP recipient study, a group of about 6,000 single parents in British Columbia and New Brunswick who had been on welfare for at least a year were selected at random from the welfare rolls between November 1992 and March 1995. One-half of these people were randomly assigned to a program group, which was offered the SSP supplement, while the remainder formed a control group. The primary difference between the applicant and recipient studies was that program group members in the applicant study had to stay on welfare a year to become eligible for the supplement offer after they entered the study, but program group members in the recipient study were eligible for

the supplement when they entered the study. Another difference between the two studies is that in the applicant study all sample members were from British Columbia, whereas in the recipient study some sample members were from New Brunswick as well as British Columbia. The supplement payment formula was the same in the applicant and recipient studies.

There is no reason to expect results from the two studies to be similar because the applicant and recipients samples were quite different. For one thing, only about 60 percent of applicant program group members remained on welfare an entire year whereas all members of the recipient study were on welfare at least a year (and many were on welfare for much more than a year when they entered the study).[12]

To account for the fact that many members of the applicant sample left welfare quickly, we construct impacts *per eligible program group member* for the applicant study by dividing the program's impacts by the proportion of the program group eligible for SSP (59.4 percent).[13] This method provides an estimate of the effect of the program among those who established eligibility for the supplement under the assumption that the supplement offer had no effect on the behavior of the 40 percent of applicants who left welfare quickly and were therefore never eligible to receive it. Although this assumption seems plausible, it may have been violated if program group members who left welfare in the first year changed their decisions during that first year. For example, someone may have turned down a job offer in the month after random assignment in anticipation of establishing eligibility for the supplement, but later in the year received and accepted a better offer.[14]

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[11] This calculation assumes that an ongoing program would require people to be on welfare for a year as a single parent to qualify for the earnings supplement. If single individuals could receive welfare for a year, then have a child, and immediately become eligible for the supplement, the entry effects would be larger.

[12] The two samples also differed considerably in their baseline characteristics. Members of the applicant sample were more likely to have a high school diploma than members of the recipient sample, were more likely to have worked in the month prior to random assignment, and were less likely to have reported physical or emotional problems that limited their work readiness. The applicant sample's higher level of educational attainment, greater recent work experience, and lower levels of physical and emotional problems all suggest that they would have an easier time finding work than members of the recipient sample and an easier time finding high-wage jobs.

[13] Calculating impacts per eligible applicant program group member is borrowed from the evaluation of the *Job Training and Partnership Act* (JTPA), which reported "impacts per enrollee" (Bloom, 1984).

[14] An alternative to calculating impacts per eligible applicant is to compare outcomes for program and control group members who remained on welfare for a year or more. This method rests on the assumption that individuals who delayed leaving welfare to become eligible for the supplement were not fundamentally different from other eligible applicant control group members. Analyses in Michalopoulos, Robins, and Card (1999) show that eligible program group members

To make the recipient sample comparable to eligible applicants, it was limited to people in British Columbia who had been on welfare for only about a year at the time of random assignment. To be precise, the recipient sample was limited to people in British Columbia who had not received welfare in the 14th through 17th months prior to random assignment, in the 15th through 18th months prior to random assignment, or in the 16th through 19th months prior to random assignment. A total of 352 "short-term" recipients were identified using this criterion.[15]

To see whether these adjustments helped create more comparable groups, Figure 3 shows welfare receipt rates for control group members of the full recipient sample, the short-term recipient sample, the full applicant sample, and the eligible applicant sample. For applicants, the time interval covered in the figure begins 12 months prior to random assignment and runs to 36 months after random assignment. A comparable time interval for the recipient sample begins 23 months prior to random assignment and runs to 25 months after.

Figure 3 verifies that the overall recipient control group was much more likely than the overall applicant control group to have received welfare in the recent past. For example, some 70 percent of the overall recipient control group was receiving welfare 23 months prior to random assignment (month -12 in Figure 3), while virtually no member of the applicant sample was receiving benefits at a comparable time. Figure 3 also indicates that the attempt to choose a recipient group comparable with the eligible applicant control group was fairly successful. The proportion receiving welfare is strikingly similar through month -5. Subsequently, there is a steep rise in the proportion receiving welfare in both groups, culminating in a period between months 1 and 12 in which virtually 100 percent of both groups were on welfare. After month 12 (the month of random assignment for recipients), the two groups show similar declines in welfare receipt. Employment and earnings levels

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and control group members were different from one another prior to random assignment in ways that could affect their later employment and other economic outcomes. For example, eligible applicant program group members were significantly more likely to be working at the time of random assignment, and they were more likely to have graduated from high school than were eligible applicant control group members. Moreover, as noted in footnote 16 below, the two methods provide similar results.

[15]Recent research on sample selectivity models has underscored the importance of making comparisons based on the probability of satisfying the appropriate selection criteria (see, for example, Heckman et al., 1998, and Rosenbaum and Rubin, 1983). Although the rule used to select the comparison sample of short-term recipients was not exactly the same as the rule used to select the applicant sample, the differences are relatively minor.

for eligible applicant control group members and short-term recipient control group members were also similar (not shown in the figure; see Michalopoulos, Robins, and Card, 1999).

Table 5 shows the effects of SSP per eligible applicant and among short-term recipients, as well as the differences between the two. Overall, the impacts per eligible applicant tended to be larger in magnitude than impacts for short-term recipients, and half of the differences in impacts are statistically significant. Perhaps the most important differences are in earnings and net transfer payments. SSP's impact on monthly earnings per eligible applicant program group member is more than three times as high as the impact on monthly earnings for short-term recipients ($376 versus $118). Moreover, the impact per eligible applicant program group member on monthly payments from either welfare or SSP supplements is $108 less than the comparable impact among short-term recipients. The combination of modest impact on total welfare and SSP supplement payments and large impact on earnings in the applicant study resulted in lower net public expenditures per eligible applicant program group member. Among short-term recipients, in contrast, estimated tax collections fall well short of the increased transfer costs, leading to a $126 per month increase in average net transfers.[16]

These results imply that the applicant sample may be unusual, and that the results may not be generalized to other samples. The differences between results per eligible applicant and results for short-term recipients could be attributed to the higher wages among eligible applicants compared to short-term recipients. As a consequence, the program's impact on earnings per eligible applicant was greater than among short-term recipients, the impact on cash transfers was smaller per eligible applicant than among short-term recipients, and the supplement offer increased tax payments more per eligible applicant than among short-term recipients. There are a number of possible explanations

[16] In should be noted that impacts per eligible applicant were about the same as the difference in outcomes between eligible program group members and eligible control group members. In the six months prior to the 30-month interview, the difference in employment rates between eligible sample members in the two groups was 19.9 percentage points (compared to 20.5 percentage points per eligible applicant shown in Table 6), the difference in average monthly earnings is $325 (compared to $376 per eligible applicant), and the difference in average net transfers is -$48 (the same as the impact per eligible applicant). By contrast, when ineligible applicant program group members were compared with ineligible applicant control group members, the differences were almost all close to zero, and only of the outcomes shown in Table 6 was significantly different between the two groups (at the 10 percent significance level). Thus, the two methods, while resting on somewhat different assumptions, lead to the same general conclusions.

for the higher wage rates in the applicant study, including the structure of the program for the two groups and policy changes that occurred in British Columbia during this period.

As discussed earlier, the short-term recipient group entered the SSP study eligible to receive the supplement and had to find full-time work within a year. By contrast, applicants had essentially two years to find full-time work — one year in which they had to remain on welfare and one in which they had to begin working full time. The extra year may have allowed applicants to conduct a more effective job search, or may have allowed them to prepare in other ways for work, such as by getting additional education or training.

The small delayed exit effect in the applicant study meant that the applicant study had a group of eligible sample members with no counterpart in the short-term recipient study. Since these people were on the margin between leaving welfare within a year and staying on for an entire year, they were likely to have some advantages over the short-term recipient group, such as having more education or more work experience. This may also explain the impacts on relatively high wages in the applicant study.

Policy changes in British Columbia may also have affected the comparison between eligible applicants and short-term recipients because of the timing of the two studies. Applicants were randomly assigned between February 1994 and February 1995. They could therefore initiate supplement receipt between February 1996 and February 1997, and potentially receive the supplement as late as February 2000. The recipient sample, in contrast, was randomly assigned between November 1992 and March 1995, which means they had to initiate supplement receipt before March 1996. Although some could have received the supplement as late as February 1999, people who were randomly assigned at the beginning of the study would have stopped receiving supplements by the end of 1996.

Economic conditions and minimum wage policy in British Columbia changed during this period. The Vancouver area labor market did not undergo huge changes in the mid-1990s, but its economy gradually improved, with unemployment falling from 9.3 percent in 1993 to 8.1 percent in 1996. During this same period the minimum wage in British Columbia increased from $5.50 per hour

in January 1993 to $6.00 in April 1993, $6.50 in March 1995, and $7.00 in October 1995. The rise in the minimum wage and the strengthening economy may have been the reason that the extra work generated by SSP in the applicant study tended to be at higher wage rates than the extra work generated among short-term recipients. These higher wages may also explain why the program's impacts on earnings were much greater per eligible applicant than among short-term recipients, and why the program's cost was much less per eligible applicant than among short-term recipients. Although a higher minimum wage may have diminished the impacts of the applicant study by making it harder for people to find work, recent research on the minimum wage in the U.S. and U.K. has found that the employment effects of relatively modest minimum wage increases are quite small (see, for example, Card and Krueger, 1995).

Provincial welfare policy also changed during this period. In January 1996, sanctions were introduced that prohibited anyone who quit a job without just cause from receiving welfare for six months. Thus, program group members who found full-time jobs and initiated supplement payments might not be allowed to return to welfare if they voluntarily left those jobs (contrary to the original design of SSP). Later in 1996, the process of applying for welfare was made considerably harder. For example, applicants were required to make advance appointments and to bring various documents to their appointments, and the issuance of on-the-spot checks was eliminated. These changes would be expected to reinforce the effects of sanctions, potentially decreasing receipt of welfare by supplement takers who quit (or lost) full-time jobs, and providing further encouragement for them to keep their full-time work or find new full-time employment. Since individuals in the applicant study would have qualified for and received the supplement in a later period than individuals in the recipient study, these changes may have had a greater effect for applicants than for recipients.

VI. Conclusion

The applicant study of the Self-Sufficiency Project (SSP) tested a generous financial incentive for new welfare recipients in British Columbia. According to the analysis in this paper, SSP is having substantial effects. Despite a small increase in the number of people who extend their length of stay on welfare to become eligible for the program's earnings supplement, the financial incentive

provided by the SSP supplement reduced welfare benefits and increased tax payments by enough to keep total public expenditures at about the same level. Furthermore, the increased earnings resulting from increased full-time employment generated a large increase in total family income and a large reduction in poverty levels.

The results are important for several reasons. First, they show that welfare recipients do respond to financial incentives to work and many of them begin to work full time if the incentives are great enough. Nevertheless, most people in the applicant study did not work full time despite the availability of a generous earnings supplement and despite the fact that the economy in British Columbia was relatively strong when the study was conducted. Thus, financial incentives alone may not be enough for some people.

The results are also important because the SSP applicant study may be the first financial incentive program that has increased household income and paid for itself. This remarkable result may be due in part to the parameters of the financial incentive offer: people had to stay on welfare a year to become eligible, had to work 30 or more hours per week to receive the earnings supplement, and had to find full-time work within a year. However, the result may also be due to the group of people who were studied. A similar study of longer-term welfare recipients in British Columbia, while also generating sizable increases in full-time employment and earnings, did not pay for itself.

All the results presented in this paper apply to the first two-and-a-half years of the applicant study, when participants were still eligible for supplement payments. After the fifth year of the study, the supplement was no longer available. Although the consequences of this change on individual behavior are yet unknown, it is possible that the impacts will persist as the work experience gained by program group members helps them to continue to maintain their economic self-sufficiency. On the other hand, the sudden loss in income due to the expiration of the supplement might force many people back on welfare. The impacts on long-run individual behavior and the long-run cost effectiveness of SSP will be the subject of future studies.

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