

# WORKING P A P E R

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## The Effects of Work- Conditioned Transfers on Marriage and Child Well- Being

### A Review

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LABOR AND POPULATION

**The Effects of Work-Conditioned Transfers on Marriage and Child Well-Being:  
A Review**

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**Abstract:** Transfer payments to poor families are increasingly conditioned on work, either via wage subsidies available only to workers or via work requirements in more traditional welfare programs. Although the effects of such programs on employment are fairly well understood, relatively little is known about their effects on marriage or child well-being. We review a small number of studies that provide such information here. Our discussion of marriage is couched in terms of a theoretical model that draws from the efficient-household literature. The model is consistent with the wide range of effects that we observe and suggests an explanation for some of the observed differences. The theoretical framework in which we couch our review of results on children is likewise consistent with the observed variation between programs and among children of different ages.

\*We thank Marco Francesconi and Paul Gregg for helpful comments. Any errors are our own.

## **I. Introduction**

Social insurance payments increasingly take the form of conditional cash transfers, requiring certain types of behavior from recipients in order to qualify for aid. In developed countries, the conditions generally take the form of work requirements. The American Temporary Aid to Needy Families (TANF) program requires most recipients to work at least part-time; benefits from the American Earned Income Tax Credit (EITC) are available only to consumers who work; the British Working Tax Credit (WTC) is available only to consumers who work at least 16 hours per week; and the Canadian Self-Sufficiency Program (SSP), which ran during the 1990s, provided an earnings supplement to welfare recipients who were willing to leave the dole and take a full-time job.

The objective of conditioning transfers on work is to increase the employment of low-wage workers. Not surprisingly, it is often effective. A large and growing body of research shows that conditioning welfare programs on work typically raises the employment, and sometimes the income, of welfare recipients (Grogger and Karoly 2005). The EITC and WTC have also been credited with increasing employment among low-wage workers (Hotz and Scholz 2003; Blundell and Hoynes 2004; Brewer, et al. 2004; Francesconi and van der Klaauw 2007).

Less well-understood are the effects of work-conditioned transfer programs on other aspects of behavior. Two elements of behavior with the potential for lasting consequences are marriage and child well-being. We review the limited evidence on these topics in this paper.

Work-conditioned transfers could influence marital incentives in at least two conflicting ways. On the one hand, they may improve single parents' options outside of marriage, in which case they might reduce marriage. On the other hand, they may increase marital surplus, which should increase marriage.

Changes in marital surplus may come about for two reasons. First, the transfer program may relax the budget constraint the couple would face if married, by subsidizing the wage of one or both spouses, for example. Second, program rules regarding who must satisfy the work requirement may influence the extent to which the couple can specialize efficiently between market work and home production. Programs which let the couple choose presumably promote efficient specialization, with the high-wage spouse devoting more time to work and the low-wage spouse devoting more time to home production. Greater specialization within marriage may increase marital surplus.

Work-conditioned transfer programs could affect children in multiple ways as well. If they increase parental income, then parents should have greater resources to devote to their children, which might favorably affect child development. At the same time, work requirements could reduce the time that parents have to spend with their children. Depending on the quality of substitute care, this could be either harmful or beneficial. Whether children gain or lose on balance is again an empirical matter.

We focus our attention on three North American programs: the Minnesota Family Investment Program (MFIP), the Incentives-Only version of MFIP (MFIP-IO), and Canada's SSP. All three of these transfer programs were designed to increase employment among welfare recipients. All three involved a wage incentive. In MFIP and MFIP-IO, the incentive involved a reduction in the rate at which recipient earnings

were implicitly taxed by the welfare system. SSP involved an explicit earnings supplement for recipients willing to work full-time. MFIP-IO was a pure financial incentive scheme; MFIP and SSP were conditioned on work. All three programs were implemented as social experiments. In this paper we review estimates from previous studies of their effects on marriage and children.

In the next section we discuss the three programs in more detail. We focus both on their work incentives and on other features of the programs that could have influenced marriage or child outcomes. In section III we begin with a theoretical analysis of how the programs might affect marriage. Our theoretical model is based on the efficient household framework of Chiappori (1992). To the best of our knowledge, our paper and the contribution by Francesconi, Rainer, and van der Klaauw (in this Symposium) represent the first efforts to use such models to study the effects of transfer programs on marriage. The efficient-household approach provides a natural way to model the structure of welfare programs as they apply to both single- and two-parent families. In contrast, previous research on marriage and welfare has focused on the incentives for marriage that arise from the structure of welfare programs as they apply to single-parent families (Hoffman and Duncan 1995; Hoynes 1997; Moffitt 1990, 1994; Schultz 1994; Bitler et al. 2004; Brewer et al. 2004; Francesconi and van der Klaauw 2007; Gregg, Harkness, and Smith in this Symposium). The efficient household approach proves to be consistent with a wide range of behavior. This is a virtue, since the programs that we review had widely differing effects on marriage. Our analysis suggests an explanation for some of those differences.

Section IV analyzes the effects of work-conditioned transfers on child well-being. As with the effects of such programs on marriage, we present a theoretical framework which acknowledges the multi-faceted effects that work-conditioned transfers might have on child well-being. The range of effects that we observe suggests different mechanisms by which welfare programs and earnings supplements might affect child outcomes.

## **II. The Programs**

All three of the programs we consider were designed to increase employment among welfare recipients. All three were implemented during the 1990s as social experiments, meaning that recipients (or families initially applying for welfare) were randomly assigned to either a treatment or control group. The control group was enrolled in the traditional welfare program, AFDC in the United States or Income Assistance (IA) in Canada.

### ***A. MFIP and MFIP-IO***

MFIP-IO involved a substantial financial incentive. Relative to AFDC, MFIP-IO imposed a much lower implicit tax on the earnings of recipients who worked. For a family of 3, the tax rate was zero for roughly the first \$200<sup>1</sup> of monthly earnings. For earnings above that threshold and below roughly 140 percent of the federal poverty line, the tax rate was roughly 62 percent. In the AFDC program, in contrast, the tax rate was 100 percent after the first four months of work.

MFIP employed the same tax schedule as MFIP-IO and added a work requirement. Single parents who had received aid for at least 24 months in any 36-month period were required to participate in a welfare-to-work program or work at least 30

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<sup>1</sup> All monetary amounts are expressed in terms of national currency, that is, in US dollars for MFIP and MFIP-IO and Canadian dollars for SSP. During most of the sample period, one Canadian dollar was worth about 75 US cents.

hours per week. In effect, this means that the program differed between two groups who took part in the experiment. For new applicants, that is, families who were randomly assigned when they first applied for aid, MFIP primarily provided a financial incentive. For most ongoing recipients, that is, families who were randomly assigned at the time of their regular biannual recertification interviews, MFIP involved both a financial incentive and the work requirement.

MFIP also involved a program for two-parent families. As in the rest of the United States, the vast majority of Minnesota welfare recipients were single parents, but about 10 percent of the caseload consisted of two-parent families that qualified for aid under the AFDC-Unemployed Parent (AFDC-UP) program. Two-parent MFIP families faced the same tax schedule as single parents. They became subject to the work requirement after receiving aid for 6 months in any 12-month period, but AFDC-UP families were subject to similar work requirements. Only one of the parents was required to satisfy the work requirement. The choice of who worked was left up to the couple.

The two-parent program relaxed eligibility rules as compared to AFDC-UP. Under AFDC-UP, the principal earner (usually the husband) had to demonstrate a recent work history in order for the family to qualify for benefits. While receiving benefits, he could work no more than 100 hours per month. MFIP eliminated the work-history requirement and the 100-hour rule.

In the event that the family split up while on aid, the custodial parent (most often the mother) became subject to MFIP's single-parent rules. Similarly, single-parent MFIP recipients became subject to the two-parent MFIP rules if they married during the experiment. In the control sample, single-parent AFDC recipients became subject to

AFDC-UP rules if they married, and if an AFDC-UP family broke up, the custodial parent became subject to AFDC rules.<sup>2</sup>

Random assignment for both MFIP and MFIP-IO began in April 1994 and continued through March 1996. The program was implemented in three urban counties and four rural counties. The single-parent program differed somewhat between the rural and urban areas; we focus here on the results from the urban counties. The two-parent program was the same in both settings; we focus on pooled results here in order to increase the sample size. Until 1998, the control group was subject to AFDC (or AFDC-UP) rules. In June 1998, both the control and the treatment group became subject to the rules of Minnesota's TANF program. Thus the experiment essentially ended roughly two to four years after random assignment.

Panels A and B of Table 1 report the effects of MFIP-IO and MFIP, respectively, on several key economic outcomes. Although these outcomes are not our main focus, they provide useful context for the results to follow. Standard analyses predict that the programs' financial incentives should have increased employment and welfare receipt (see, e.g., Grogger and Karoly 2005, ch. 3). At the same time, MFIP's work requirement should have reinforced the employment effect while counteracting the effect on welfare receipt. For the most part, the estimated impacts of the programs are consistent with these predictions.

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<sup>2</sup> One other MFIP feature, common to single-parent and two-parent families and available under both MFIP and MFIP-IO, pertained to parental use of child care providers. Specifically, under MFIP providers were directly reimbursed for child care services, whereas under AFDC the parent or parents paid providers and then were reimbursed. By reducing the need to finance child care costs up front, the intent was to provide an additional financial incentive to work.



Table 1 presents the programs' impacts during the third year after random assignment and for the sixth year after random assignment, after the experiments had ended. At each point in time, the table records the control group mean, followed by the impact estimate defined as the difference in mean outcomes between the treatment and control groups. Significance levels for the program impacts are shown as well. These data are drawn from Gennetian, Miller, and Smith (2005).<sup>3</sup>

Focusing on the impact estimates in the third year after random assignment, MFIP-IO had at most small positive effects on employment and no significant effect on earnings. It raised welfare receipt and welfare payments significantly for both recent applicants and ongoing recipients. It caused income, which for welfare recipients consists primarily of earnings and welfare payments, to rise, but the effect was significant only for ongoing recipients at the three-year mark.

MFIP increased the employment, earnings, welfare receipt, and welfare payments of both single-parent groups three years after random assignment. All of these effects are at least marginally significant, except for the earnings impact among recent applicants. Consistent with theoretical predictions, the employment impacts of MFIP are larger than those of MFIP-IO. MFIP also raised employment to a greater extent among recipients, who were subject to the work requirement for a greater portion of the sample period, than among applicants.

The impacts for two-parent families show that MFIP had essentially no effect on the likelihood that at least one parent was employed. However, it had a significant negative effect on the likelihood that both parents worked. Most of this effect stemmed from reductions in employment on the part of the mother (Miller et al. 2000). In the

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<sup>3</sup> See tables A2 and A3 in Gennetian, Miller, and Smith (2005).

context of Chiappori's (1992) model, this reduction in employment could be the result of intra-household bargaining, which should shift in the mother's favor if the single-parent component of MFIP improves her non-marital option. As we will see below, it could also be the result of efficient specialization stemming from the wage subsidy and work rules of MFIP's two-parent program. MFIP also caused earnings to fall and welfare receipt and payments to rise, although its effects on income were insignificant. For both MFIP-IO and MFIP, the impact estimates measured at the six-year mark show the program had little persistent effect after the experiment came to an end.

### ***B. SSP***

SSP provided a wage supplement to IA recipients randomly assigned to treatment who were willing to leave the IA program and work full-time, defined to mean at least 30 hours per week. The supplement was equal to one-half the difference between the participant's earnings and a target level of income. The implicit tax rate on earnings was thus 50 percent, which was substantially lower than the IA tax rate.

The program was carried out in two locations, British Columbia and New Brunswick. The target income level was \$37,000 per year in British Columbia and \$30,000 per year in New Brunswick, presumably reflecting differences in living costs between the two provinces. The IA tax rates varied between the provinces too, as well as over time. For at least part of the study period, implicit tax rates were as high as 100 percent in both locations.<sup>4</sup>

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<sup>4</sup> Until September 1995, the tax rate in New Brunswick was 100 percent for monthly earnings in excess of \$200. After September 1995 it fell as low as 65 percent. Until April 1996, the tax rate in British Columbia was 75 to 100 percent on earnings in excess of \$200 per month. After that it was 75 to 100 percent on all earnings.

Eligibility for random assignment was restricted to single parents who had been receiving IA for at least one year. From the time of random assignment, they had one year to start working full-time and claim the supplement. From the time of the initial claim, recipients could continue to receive the supplement for up to three years, so long as they continued to work full-time. During that period, they were free to stop working and begin receiving IA again if they so chose.

Although initial eligibility was restricted to single parents, marriage (either statutory or common-law) did not disqualify recipients from continuing to receive the supplement. In fact, the SSP supplement was independent of the income received by other household members. On the one hand, this implies that SSP's tax treatment of couples was more generous than that of IA, which taxed all household members' income equally in determining benefits. On the other hand, it implies that eligibility for the supplement was conditioned on the mother's working at least 30 hours per week. The SSP earnings benefit was also independent of family size, unlike IA benefits, which were higher for larger families.

Random assignment for SSP began in November 1992 and extended through March 1995. Thus the last supplement payment would have been made in March 1999. The program was implemented in large parts of both British Columbia and New Brunswick.

Panel C of Table 1 shows how SSP affected employment, earnings, transfer receipt, transfer payments, and income in each of the provinces at the quarter 12 and quarter 18 follow-up.<sup>5</sup> Consistent with its primary intent, SSP raised full-time

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<sup>5</sup> All data for SSP are drawn from Michalopoulos et al. (2002). The figures in Table 1 are drawn from Tables C3 and C4.

employment significantly in both locations in the short term. It reduced traditional welfare receipt, but program take-up was high enough to raise the probability of receiving some sort of transfer payment, either welfare or the SSP supplement. By increasing both earnings and transfer payments, it increased income significantly. Despite the differences between British Columbia and New Brunswick, SSP had similar short-term effects in both provinces. By the 18th quarter after random assignment, SSP's effects had dwindled to zero in British Columbia, but they persisted in New Brunswick.

### **III. Work-Conditioned Transfers and Marriage: Theory and Evidence**

#### ***A. An Efficient Household Model of Marital Incentives***

Our model of marriage is motivated by models of efficient households along the lines of Chiappori (1992). Since most welfare recipients are single mothers, we discuss the model primarily from the perspective of a single parent deciding whether to marry a potential husband. The pool from which the potential husband is chosen, and the mechanism by which the choice is made, are outside the scope of the model. Furthermore, although our discussion of the model is cast primarily in terms of the single mothers' marriage decision, the logic of the model can also be used to analyze the divorce decision of an initially married couple. We illustrate this point explicitly toward the end of subsection 3.

Our marriage model has two key assumptions. The first is that consumers have egoistic preferences that are a function of their own leisure and their own consumption of a private consumption good. The second is that marriage is efficient. This means that a couple consisting of a single mother and her potential husband will marry if, as compared to remaining single, marriage would increase the utility of at least one of the parties

without reducing the utility of the other. Put differently, they will marry if the marriage would generate positive surplus. As in Becker (1981), positive surplus may arise due to gains from specialization within marriage, whereby one spouse specializes in market work and the other specializes in home production. A second implication of efficiency is that, if marriage takes place, the couple will allocate consumption and leisure so as to achieve a point on their marital utility-possibility frontier.

In this setting, transfer programs may affect marriage in two ways: they may affect the location of the marital utility-possibility frontier, which affects marital surplus, and they may affect the parties' non-marital alternatives. Under AFDC, benefits are available only to adults with children. Under IA, adults with children qualify for substantially higher benefits than adults without children. Since children in single-parent families overwhelmingly live with their mothers, this means that the transfer programs may affect the single mother's non-marital alternatives, but generally would have no effect on her prospective husband's alternatives outside of marriage.<sup>6</sup> Thus we begin our analysis by considering how our three transfer programs affect the non-marital utility of single mothers.

### 1. Single mothers

We assume that the single mother's utility  $U^m$  is an increasing function of her leisure and consumption, denoted by  $L^m$  and  $C^m$ , respectively. Given a wage  $w^m$  and non-labor income  $y$ , her maximized utility is given by  $V^m(w^m, y)$ . We assume that the welfare program for which she is eligible provides a maximum benefit of  $G_1$ , which is reduced proportionately at the tax rate  $\tau$  for each dollar of earnings. Assuming that the single

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<sup>6</sup> Francesconi, Rainer, and van der Klaauw (in this Symposium) propose an interesting alternative in which the husband is indirectly affected outside of marriage due to his concern for child quality, which is a function of the mother's non-market time.

mother has no other non-labor income, maximizing utility subject to the welfare-program budget constraint yields

$$V^m(w^m(1-\tau), G_1) = \max U^m(L^m, C^m)$$

$$s.t. C^m = w^m(1-\tau)h^m + G_1$$

where  $h^m = T - L^m$  denotes hours of work or labor supply and  $T$  denotes total time available.<sup>7</sup> We compare the single mother's maximized utility under the experimental transfer programs to her maximized utility under the traditional welfare programs.

*a. MFIP-IO*

MFIP-IO provided a financial incentive to work in the form of a lower tax rate on earnings. Whereas the AFDC tax rate was 100 percent after the first four months of employment, the marginal tax rate of MFIP never exceeded 62 percent. Since  $\tau^{MFIP} < \tau^{AFDC}$ , the MFIP-IO budget set was larger than the AFDC budget set, implying that  $V^m(w^m(1-\tau^{MFIP}), G_1) \geq V^m(w^m(1-\tau^{AFDC}), G_1)$ . In words, the single mother was (weakly) better off under MFIP-IO than under AFDC.

*b. MFIP*

The tax rate under MFIP was the same as that under MFIP-IO. The difference was that MFIP imposed a work requirement, or a floor on hours of work, on recipients who had received aid for 24 months or more. Maximized utility in the presence of an hours floor (denoted by  $\underline{h}$ ) is given by

$$V^m(w^m(1-\tau^{MFIP}), G_1; \underline{h}) = \max U^m(L^m, C^m)$$

$$s.t. C^m = w^m(1-\tau^{MFIP})h^m + G_1; \quad h^m \geq \underline{h}$$

$$= w^m h^m; \quad h^m < \underline{h}$$

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<sup>7</sup> Throughout the analysis, we assume implicitly that the single mother's earnings are low enough to make her income-eligible for welfare. In the simple setting here, this amounts to assuming that  $w_m h_m < G_1/\tau$ .

Whether MFIP increases the single mother's utility in comparison to AFDC is ambiguous. By itself, the higher tax rate increases maximized utility, but by itself, the hours floor tends to reduce it. The net effect will depend on the single mother's preferences.

*c. SSP*

Like MFIP, SSP involved an hours floor as well as a tax rate that was lower than that of the traditional welfare program. One difference between SSP and MFIP is that SSP was voluntary. This difference is important because it implies that a single mother could never be worse off in the SSP treatment group than in the IA control group, because she always had the option to remain on IA.

Under IA, with maximum benefit  $G_1$  and tax rate  $\tau^{IA}$ , the consumer's maximized utility is given by  $V^m(w^m(1-\tau^{IA}), G_1)$ . SSP provided workers with a supplement equal to one-half the difference between the worker's earnings and a target earnings level denoted by  $E$ . For consumers who worked in excess of the hours floor  $\underline{h}$ , the budget constraint can be written as

$$\begin{aligned} C^m &= w^m h^m + \tau^{SSP} (E - w^m h^m) \\ &= w^m (1 - \tau^{SSP}) h^m + \tau^{SSP} E \end{aligned}$$

where  $\tau^{SSP} = 1/2$ . This takes the same form as the IA budget constraint, where the "virtual benefit"  $\tau^{SSP} E$  plays the same role as  $G_1$ . Because SSP is voluntary, the single mother's maximized utility under SSP is given by the greater of  $V^m(w^m(1-\tau^{IA}), G_1)$  and  $V^m(w^m(1-\tau^{SSP}), \tau^{SSP} E; \underline{h})$ .

## 2. Two-parent families

Two-parent families consist of the mother and her husband, whose quantities are denoted with  $s$  superscripts (for *spouse*). The assumption of egoistic preferences means that the mother and her husband derive utility only from their own leisure and consumption. The assumption of efficiency in intrahousehold allocations means that a family with wages  $w^m$ ,  $w^s$  and non-labor income  $y$  will solve a problem of the form

$$\begin{aligned} \max U^m(L^m, C^m) \\ \text{s.t. } U^s(L^s, C^s) = \bar{u}^s \\ C^m + C^s = w^m h^m + w^s h^s + y \end{aligned}$$

for some value of the husband's utility  $\bar{u}^s$ . Varying  $\bar{u}^s$  traces out the marital utility-possibility frontier. Transfer programs affect the location of the marital frontier by affecting after-tax wages, non-labor income, and by the conditions they impose on hours of work. The particular value of  $\bar{u}^s$  at the family's solution will generally depend on  $w^m$ ,  $w^s$ , and  $y$ .

A critical point of our approach is that the efficiency of marriage and the range of feasible efficient allocations within marriage are determined by each party's best alternative outside of marriage. If the location of the marital frontier is such that at least one party could be made better off by marrying, without making the other party worse off, then the couple will marry. Otherwise, they remain unmarried. Thus transfer programs influence marriage both by affecting the single mother's non-marital alternative and by affecting the couple's marital frontier. Relative to the traditional two-parent welfare programs faced by the control groups, MFIP and SSP (weakly) expand the marital frontier, as we discuss next.



*a. AFDC-UP and IA in two-parent families*

Like their corresponding single-parent counterparts, both AFDC-UP and IA tax earnings. IA taxes both adults' earnings at the same rate; AFDC-UP may tax the mother's earnings at a different rate than her husband's, depending on his paternity status.<sup>8</sup> Denote the tax rate on the single mother's earnings by  $\tau^m$  and the tax rate on the spouse's earnings by  $\tau^s$ .

In addition to taxing earnings, AFDC-UP imposes work requirement and a ceiling on the labor supply of the principal earner. We assume that these constraints apply to the husband, since the principal earner is defined as the spouse whose recent labor force attachment was used to satisfy the work-history requirement (Hoynes 1996). IA imposes no such hours limits.

Denote the work requirement by  $h'$ , the hours ceiling by  $\bar{h}$ , and benefits paid to two-parent families by  $G_2$ . The family solves

$$\begin{aligned}
 (1) \quad & \max U^m(L^m, C^m) \\
 & s.t. U^s(L^s, C^s) = \bar{u}^s \\
 & C^m + C^s = w^m(1 - \tau^m)h^m + w^s(1 - \tau^s)h^s + G_2 \\
 & h' \leq h^s \leq \bar{h}
 \end{aligned}$$

where  $h' > 0$  and  $\bar{h} = 100$  for AFDC-UP, and  $h' = 0$  and  $\bar{h} = T$  for IA.

*b. MFIP*

There are three key differences between MFIP and AFDC-UP. First, two-parent families faced the lower MFIP tax rate rather than the higher AFDC tax rate. Second, MFIP allowed either parent to satisfy the work requirement. Third, MFIP eliminated the

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<sup>8</sup> AFDC and MFIP generally tax the co-resident father's earnings at the same rate as the mother's, independent of his marital status. If the mother's husband is not the father of her children, his tax rate will depend on whether or not he is included in the assistance unit. IA treats co-residing partner's income the same independent of marital or paternity status.

100 hour rule, that is, it raised  $\bar{h}$  from 100 to  $T$ . These changes expand the family's budget set, implying that the family's marital utility-possibility frontier under MFIP (weakly) dominates its marital frontier under AFDC-UP.

*c. SSP*

Unlike IA benefits, the IA earnings supplement is only a function of the mother's earnings. In terms of (1), this means that  $\tau^s = 0$ . Furthermore, the mother's earnings were taxed at  $\tau^{SSP} = .5$ , rather than the higher rate  $\tau^{IA}$ . All else equal, these two features imply that the marital frontier under SSP (weakly) dominates the marital frontier under IA, assuming that the virtual SSP benefit  $\tau^{SSP} E$  at least equals the IA benefit  $G_2$ . For most families, the virtual SSP benefit exceeds the IA benefit. However, for large families, we could have  $G_2 > \tau^{SSP} E$ , since IA benefits grow with family size whereas the SSP supplement does not. Nevertheless, since the families in the SSP group were always free to receive IA, it follows that the budget set facing the SSP group was never smaller than that facing the IA group. Thus the marital frontier facing the SSP group (weakly) dominates the marital frontier facing the IA group.

Before employing the model to analyze marriage decisions, we note one important distinction between MFIP and SSP as relates to married couples. MFIP imposed a work requirement which could be satisfied by either parent, reduced the tax rate on both parents' earnings, and eliminated the hours ceiling on the principal earner. It thus promoted efficient specialization within marriage as between the market and home production. The high-wage parent could simultaneously satisfy the work requirement and earn a higher after-tax wage without being bound by the 100-hour rule. The low-wage spouse could specialize to a greater extent in home production.

In SSP, the mother had to satisfy the work requirement. In other words, the only way for her family to benefit from the wage supplement and the lower tax rate on other worker's earnings was for the mother to work 30 hours per week. In families where the mother was the low-wage worker, this feature of the program worked against efficient specialization. Tying eligibility for benefits to the mother's labor supply likely reduced the extent to which the other features of the program could increase marital surplus.

### 3. Marriage decisions

In our model, transfer programs affect marriage incentives both by affecting the location of the marital frontier and by affecting the value of the mother's non-marital option. However, the potential husband's non-marital options are not affected by changes in the program, since non-custodial fathers are eligible for little if any assistance. Figure 1 illustrates the potentially conflicting incentives for marriage that arise.

The figure plots the utility of a single mother receiving AFDC on the y-axis and the utility of her prospective husband on the x-axis. The point  $(V^s(w^s, 0), V^m(w^m(1-\tau^{AFDC}), G_1))$  represents the parties' non-marital alternatives, that is, their maximized utilities outside of marriage. The solid curve represents their marital utility-possibility frontier under the rules of the AFDC-UP program.

The location of the marital frontier in relation to the non-marital alternatives depends on the surplus generated by the marriage. The magnitude of the surplus, in turn, is influenced by the potential for gains from specialization within marriage (Becker 1973). As illustrated, the couple is unmarried because there is no point along the marital frontier at which, as compared to their non-marital alternatives, at least one party can be made better off by marrying without the other party being made worse off. This happens

because the parties would enjoy insufficient gains from specialization if they were to marry, possibly because of the high tax rate and low hours ceiling of the AFDC-UP program. In other words, program rules that heavily tax earnings or impose restrictive hours constraints may limit the scope for specialization and thus reduce the benefits of marriage.

MFIP changes the situation in two ways. By eliminating the hours ceiling and reducing tax rates, MFIP expands the resources potentially available to the couple. It thus improves the marital frontier, shifting it out to the dotted curve. If MFIP caused no other changes, this would be enough to induce the couple to marry, since at all points on the new marital frontier between  $X$  and  $Y$ , at least one party is better off married than single, and the other party is no worse off.

Of course, MFIP also changes the single mother's non-marital alternative. As discussed above, MFIP could either improve it or worsen it. The lower tax rate would tend to raise the single mother's non-marital utility, whereas the hours floor would tend to reduce it. If the net effect of MFIP on the single mother's non-marital utility were not too positive, then the improvement in the marital frontier would induce the couple to marry. If MFIP left the single mother with non-marital utility in excess of

$\tilde{V}^m(w^m(1-\tau^{MFIP}), G_1)$ , however, the couple would remain unmarried, despite the expansion of the marital frontier.

The analysis of SSP proceeds similarly. Under IA, couples remain unmarried if their non-marital utility is such that neither party can be made better off by marrying without making the other party worse off. SSP's lower tax rates tend to improve the marital frontier, and since take-up of SSP is voluntary, the marital frontier for the SSP

group (weakly) dominates the marital frontier for the IA group. At the same time, SSP improves the single mother's utility outside of marriage. If the relative gains in marital and non-marital utility are such that non-marital utilities fall within the marital frontier, then the couple will marry. Otherwise, they remain unmarried.

Although we have cast the discussion to this point in terms of the decision problem facing a single mother, the logic of the model extends to initially-married couples as well, as illustrated in Figure 2. Under AFDC, the couple's non-marital alternatives are given by  $V^s(w^s, 0)$  and  $V^m(w^m(1-\tau^{AFDC}), G_1)$ . The couple is married since their non-marital alternatives are dominated by the marital utility-possibility frontier under AFDC-UP (the solid curve). Despite the high tax rate and restrictive hours ceiling, the couple is married, due to strong gains from specialization within marriage.

MFIP changes the couple's marital frontier and the mother's non-marital alternative. By reducing the tax rate and eliminating the hours ceiling, MFIP expands the marital frontier, shifting it out to the dotted curve. By itself, the improvement in the couple's marital frontier would tend to preserve their marriage. However, the program's lower tax rate also improves the mother's non-marital alternative, although the work requirement for single parents tends to worsen it. So long as the net effect on the mother's non-marital option leaves her with non-marital utility less than

$\tilde{V}^m(w^m(1-\tau^{MFIP}), G_1)$ , the couple will remain married. However, if the mother's non-marital utility under MFIP exceeds  $\tilde{V}^m(w^m(1-\tau^{MFIP}), G_1)$ , then the couple will divorce, despite the improvement in their marital frontier.

Our model thus shows that transfer programs can either increase or decrease marriage. Furthermore, it shows that such an effect can arise either from changes in entry

into marriage or from changes in divorce. The net effect depends on how program rules affect the couple's utility under marriage and on how the rules affect the mother's utility outside of marriage.

## **B. Evidence**

### **1. Data**

Although the MFIP evaluation relied on administrative data to measure employment and welfare receipt, it relied on survey data to measure marriage. Roughly 40 percent of the administrative-data sample was randomly selected to participate in a 36-month survey, to which 81 percent of those sampled responded. The 36-month interview collected data on marital status and living arrangements.

Starting several years later, further data on the entire administrative-data sample were collected from administrative records. Public records were searched for information about marriages and divorces; these enable a longer-term analysis of MFIP's effect on legal marital status, but provide no information about separations or informal cohabiting arrangements. These data can be used to corroborate the three-year results based on survey data and to estimate the effect of MFIP on legal marital status roughly six years after random assignment.

The SSP evaluation primarily made use of survey data collected at the time of random assignment and at 18-month intervals thereafter. Survey data provide information on demographic characteristics of study participants and their households as well as data about marriage.

## 2. The Impacts of Work-Conditioned Transfers on Marriage and Divorce

Panels A and B of Table 2 present the estimated impacts of MFIP-IO and MFIP, respectively, on marriage and divorce at the three-year and six-year follow-ups. The format of Table 2 is the same as that of Table 1. The main dependent variables are dichotomous. The main survey-based measure equals one if the respondent said that she was married and living with her spouse at the time of the 36-month interview. The marriage measures based on administrative data equal one if records showed that a single-parent recipient married during the first three years after random assignment (or during the first six years for the measures at the longer-term follow-up).

Considering first the results for single parents, we see that all but one of the estimated impacts for both MFIP and MFIP-IO are positive. This is true for both the three-year and the six-year measures. In terms of our model, this suggests that the effect of these programs on the marital possibility frontier was sufficiently positive to outweigh the effects of any potential improvement in the single mother's non-marital alternative. However, only one of the estimates is statistically significant.

The results for two-parent families show that MFIP had a large and significant positive effect on marriage. At the three-year mark, the marriage rate for the MFIP controls was 48.3 percent. The marriage rate for the MFIP group was a whopping 19.1 percentage points higher. In the context of our model, this suggests that MFIP's salutary effect on the marital utility-possibility frontier was more than enough to outweigh any potential negative effect arising from improvements in the mother's non-marital alternative.

The next two rows of the table shed some light on the nature of the positive marriage effect. Part of it stemmed from a relatively small and insignificant reduction in divorce. The larger effect involved a 9.5 percentage point reduction in separations. MFIP apparently was more successful in keeping families from separating than in keeping them from divorcing once separated. The importance of separations is reinforced by the next line of the table, which shows that MFIP had small effects on divorce as measured by public records. At the six-year mark, however, the divorce effect becomes larger and significant, suggesting that MFIP's initial success in reducing separations manifested itself over time as a reduction in divorces.

SSP, with its larger sample sizes, generated significant effects on marriage in both provinces. Surprisingly, however, the program had opposite effects in the two sites. At the 36-month interview, SSP reduced marriage by 2.8 percentage points in British Columbia, but raised it by 3.8 percentage points in New Brunswick. The estimates from the 54-month interview are not significantly different from zero, but neither are they significantly different from the 36-month estimates.

Of course, these results are logically consistent with our model. They indicate that, in British Columbia, SSP's effect on the single-mother's non-marital alternative exceeded its effect on her marital frontier, whereas in New Brunswick, its effects were just the opposite. In this sense, it is a virtue that our model is consistent with such a broad range of behavior. At the same time, it would be desirable to more concretely explain why the same program had different effects in different locations.

A natural first step is to ask whether SSP had different effects on other aspects of behavior which might explain its different effects on marriage. This line of inquiry only



deepens the puzzle. As seen in Panel C of Table 1, the program's effects on employment, welfare receipt, and income--the primary outcomes that the program was intended to affect--were similar across provinces.

Harknett and Gennetian (2003) attempt to explain the puzzle by asking whether province-level differences in SSP participants' characteristics could explain why the effects of the program on marriage differ by province. To do this, they regressed a marital-status dummy on a treatment-group dummy, a vector of participant characteristics, and interactions between the treatment-group dummy and those characteristics. The interaction terms failed to explain the difference in marriage effects between provinces. Harknett and Gennetian suggest that differences in culture between the two provinces might play a role.

An alternative explanation suggested by our model hinges on differences in the scope for specialization owing to differences in the state of the labor market between the two provinces. Recall that gains from specialization within marriage affect the location of the marital utility-possibility frontier. The greater the scope for such gains, the greater is the extent to which the program encourages marriage. Recall also that the structure of SSP limits the scope for efficient specialization in cases where the mother is the low-wage worker. Since SSP benefits depend on the mother's labor supply, the program largely eliminates the possibility of what we might refer to as traditional specialization, whereby the husband specializes in market work and the mother specializes in home production. To the extent married couples specialize under SSP, it would involve non-traditional specialization, with the mother working and the husband engaging in home production.

The attractiveness of non-traditional specialization, in turn, should depend on the state of the labor market for men. In strong labor markets, the opportunity cost of the husband's specializing in home production would be relatively high, whereas in weak labor markets, it would be relatively low. When SSP was operating, labor markets in British Columbia were strong relative to those in New Brunswick. Among high-school educated men between the ages of 20 and 44, who would likely participate in the same marriage markets as SSP recipients, unemployment rates were 10.5 percent in British Columbia and 17.9 percent in New Brunswick. Among high school dropouts, the respective unemployment rates were 16.8 and 27.6 percent (Harknett and Gennetian 2003). Thus the structure of SSP interacted with the state of the labor market may have limited gains to specialization in British Columbia to a greater extent than in New Brunswick. This may explain why SSP's effect on the mother's non-marital option dominated its effect on the marital frontier in British Columbia, but had the opposite effect in New Brunswick.

Of course, it would be desirable to bolster this argument with empirical evidence. Since there are no data on husbands' time allocation or employment to provide any direct evidence, we appeal instead to indirect evidence that appears in the analysis of Harknett and Gennetian (2003). If potential husbands' opportunity costs play an important role in explaining the marriage effects, then they should play a role within province as well as between provinces. Thus within New Brunswick, the largest positive effects on marriage should obtain for groups with the lowest opportunity costs, and within British Columbia, the largest negative effects should obtain for groups with the highest opportunity costs.

Indeed we find such a pattern in the data. In New Brunswick, the largest positive effect obtains for 19-to 24-year-olds. In British Columbia, the largest negative effects obtain for 40-to-49-year-olds. Since men's wages rise with age, this pattern is consistent with the notion that the opportunity cost of home production among men plays a role in explaining the effects of SSP on marriage.

#### **IV. The Effects of Work-Conditioned Transfers on Child Well-Being**

##### **A. Theoretical Framework**

The efficient household model predicts that, within two-parent households, changes in one spouse's non-marital alternative should influence the intra-household allocation of resources (Chiappori 1992). Such changes could affect child well-being. However, since marriage rates are low in most of the studies we consider, it seems doubtful that the primary effects of these transfer programs on child well-being would operate through intra-marital bargaining.

Since most children reside in single-mother households, we think about child well-being in terms of a variant of Becker's (1965, 1981) model of household production in which a single mother seeks to maximize a utility function that includes her own utility and the utility of her children.<sup>9</sup> Her optimization problem is subject to a budget constraint that differentiates adult- versus child-specific consumption and to a production function that governs how inputs such as parental time and other purchased goods and services produce child outcomes (e.g., cognitive development, schooling attainment, or health status). The mother makes decisions about how to allocate her time between work, time spent with children or in other home production activities, and leisure. She also makes decisions about how her children's time is allocated between activities such as

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<sup>9</sup> This section draws on Grogger and Karoly (2005), Chapter 9.

schooling or non-schooling activities (e.g., leisure time or, for older children, time spent working, helping with household chores, or caring for younger siblings). Choices are also made regarding other resources that foster children's development, such as learning resources in the home, the quality of child care or schools attended, and the neighborhood where the family lives.

Within this framework, work-conditioned transfer programs may affect family decisionmaking in ways that could have either favorable or unfavorable effects on child outcomes, and those effects may vary with the age of the child (Duncan and Chase-Lansdale 2001; Zaslow et al. 2002). First, as noted above, a primary objective of the work-conditioned transfer programs we examine is to increase parental work effort. Prior research indicates that increased maternal work effort affects child health and development, although the findings suggests that the direction of the effect depends upon such factors as the nature of the mother's job, the change in family income, the quality of child care for younger children and changes in time use for older children, and the mother's mental health (Morris et al. 2001; Brooks-Gunn et al. 2001).

In single-parent families, the substitution of maternal care for non-maternal care is likely to be greatest for preschool-age children as opposed to older children who are already in school. Experimental evaluations of high-quality center-based preschool programs have been shown to improve behavioral and cognitive outcomes for disadvantaged children (see Karoly, Kilburn and Cannon, 2005, for a recent review). Other research has demonstrated a linkage between the quality of child care and after-school care environments and children's developmental outcomes and school success (Vandell and Shumow, 1999; and Vandell and Wolfe, 2000; Vandell and Pierce, 2003).

The effect of work-conditioned transfer programs will thus depend upon choices the mother makes with respect to substitute care for her children and those choices will be constrained by the price and quality of care options available to her.

Changes in family income that accompany conditional cash transfer programs can also affect child well-being. Increases in family income may lead families to increase investments in their children such as higher quality child care, better schools or other educational inputs, or improved residential location. Indeed, an extensive body of research documents linkages between family income and child development, although the favorable effects appear to be stronger for younger children and families starting from low income levels (Duncan and Brooks-Gunn, 1997; NICHD Early Child Care Research Network, 2006). To the extent that work-conditioned transfer programs raise family income, we might expect to see favorable effects on child outcomes, especially for younger children.

Child outcomes may also be affected by other areas of family decisionmaking such as family formation and child bearing. If work-conditioned transfer programs raise marriage or reduce divorce, children may gain if two-parent household devote greater time and financial resources to child-rearing. Evidence suggests that two-parent households may be beneficial for children, although the research is not definitive (Amato, 2005). Likewise, if work-conditioned transfer programs reduce subsequent childbearing, children may benefit because existing resources in the family can be invested in a smaller number of children—the so-called “quality-quantity” tradeoff (Becker and Tomes, 1976).

In sum, work-conditioned transfer programs may affect child well-being based on the tradeoffs parents make between time spent working and time spent with children and

between the consumption of goods and services that benefit adults versus those that directly benefit children. The effects on children may operate through a number of different pathways. The most important such pathways are likely to include changes in parental employment and family income, since the changes in marriage that we observe are mostly small. Other intermediate behaviors that can affect child outcomes include choices about child care and childbearing. As children transition to adolescence and young adulthood, they begin to make their own choices about their time allocation such as time spent in school, on homework, or in delinquent activities. They also have more control over the inputs that contribute to their own human capital production such as attitudes toward school and work or other decisions that affect their life course such as teen childbearing. Overall, this discussion suggests that work-conditioned transfer programs may generate positive, negative or neutral effects on children, and the impacts may vary with the child outcome considered such as cognitive, social or emotional development, school achievement or attainment, delinquent behavior, or health. The effects may also vary with the age of the child.

## **B. Evidence**

### **1. Data**

The MFIP, MFIP-IO and SSP evaluations collected an array of data on children in the experiments from a variety of sources. Although child well-being can be conceptualized and measured in numerous ways, there were efforts to collect common measures in several key domains between these evaluations. In the discussion that follows, we focus on education and behavior outcomes, where the former include school achievement measures and measures of educational progress (e.g., grade repetition,

special education use, dropping out of school, attending college) and the latter include measures of behavior problems or, for older youth, the incidence of arrests. We also consider labor market and fertility outcomes among older youth. Measures may be based on standardized test instruments, parent or teacher reports, or child self-reports (in the case of older youth).<sup>10</sup>

In MFIP and MFIP-IO, in-depth information on child outcomes was collected for only a subset of the full evaluation sample. At the 36-month follow-up, the full range of child-specific data were collected for treatment and control group families with at least one child age 2 to 9 at the time of randomization and who were enrolled in the first seven months of the study (April to October 1994) (Gennetian and Miller, 2000). One child in the eligible age range was selected at random and information was collected from maternal reports on the focal child's school performance (parental report on achievement, grade repetition and expulsions/suspensions), and behavior problems (Behavior Problems Index, Positive Behavior Scale). Since some information was collected for all children age 5 to 18 at the time of follow-up, results were also reported for a subset of the outcomes for all children age 10 to 13 at the time of random assignment. At the 36-month follow-up, outcomes are reported separately for children of single-parent recent applicants and ongoing recipients in urban areas.

The most recent MFIP follow-up matched children in the study sample to 3<sup>rd</sup> and 5<sup>th</sup> grade reading and math achievement test scores based on school records for 2001 to

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<sup>10</sup> We do not discuss results for measures of child health collected in MFIP and SSP. Generally, these measures were not significant and when they were, they would not materially affect our conclusions.

2003 (Gennetian, Miller and Smith 2005).<sup>11</sup> Children with 3<sup>rd</sup> grade scores were approximately age 0 to 3 at the time of randomization, while those with 5<sup>th</sup> grade scores were ages 2 to 5. The follow-up period ranged from five to nine years depending upon whether families were enrolled later or earlier in the two-year randomization period. Results were reported only for MFIP urban single-parent applicants and recipients and for two-parent families; no results were reported for MFIP-IO.

In SSP, information on children was collected at the 36- and 54-month follow-up interviews and the information collected varied with the age of the child. Results reported in Michalopoulos et al. (2002) stratify results for children who were 1 or 2 years of age at random assignment (and therefore 4 or 5 years of age at the 36-month follow-up and 5.5 to 7.5 years of age at the 54-month follow-up), those who were 3 or 4 years of age at random assignment (6 or 7 and the first follow-up and 7.5 to 9.5 at the second follow-up), those who were 13-15 at random assignment (16 to 18 and 17.5 to 20.5 at the two follow-ups) and those age 16 or 17 at random assignment (outcomes measured only when ages 20.5 to 22.5 at the 54-month follow-up).<sup>12</sup>

At the first follow-up, the school achievement data included the Peabody Picture Vocabulary Test-Revised (PPVT-R) for children age 15 and under at the time of random assignment. A math score was also collected for those age 3 to 4 at random assignment and average achievement was rated by parents of all sampled children. Other educational measures included parent reports of grade repetition, special education use and behavior

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<sup>11</sup> We focus on the results for reading and math scale scores. The findings are similar for a proficiency score measure which is a dichotomous indicator as to whether or not the child had met grade-level expectations in the subject.

<sup>12</sup> The 54-month SSP follow-up did not include children who were age 5 to 12 at random assignment. This age group was included in the 36-month follow-up, although results were reported for those age 3 to 8 and 9 to 15 at random assignment. For the younger age group, significant favorable effects were found for school achievement and health measures, while significant unfavorable effects were found for the older age group in behavior and school achievement outcomes (Morris and Michalopoulos, 2000).



problems. At older ages, youth and young adults self-reported employment status, and whether they had ever had a baby or been arrested. Results are reported separately for the British Columbia and New Brunswick samples. However, we focus on results for the pooled sample given the similarity in the results by province and the smaller sample sizes that result when the data are stratified.

## 2. The Impacts of Work-Conditioned Transfers on Child Outcomes

Table 3 presents the effects of MFIP-IO and MFIP on child outcomes, while Table 4 provides parallel results for SSP. Both tables follow a similar format as Tables 1 and 2, although we also include a measure of the reported effect size for the study impacts for MFIP.<sup>13</sup>

As of the 36-month follow-up, MFIP-IO had one significant effect among applicant children age 2 to 9 at study entry, namely a reduction in school performance with a modest effect size (0.2). For the same age group, MFIP had no significant effect on applicants, but it had unfavorable effects on children age 10 to 13 at enrollment, specifically a drop in school performance and an increase in the rate at which parents were contacted by their child's school about problem behavior. Among the other outcomes shown in Table 3 measured at 36-months, while not significant, the effects of MFIP-IO and MFIP on children of urban applicants are also, for the most part, in an unfavorable direction. Likewise, MFIP's longer-term effects on 3<sup>rd</sup> and 5<sup>th</sup> grade achievement scores are all unfavorable for children of applicants, although only the effect on 3<sup>rd</sup> grade reading is significant.

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<sup>13</sup> The effect size is a standardized measure of impact and is defined as the program impact (treatment minus control group difference) divided by the standard deviation of the outcome for treatment and control groups combined. In Table 3, we show the absolute value of the effect size where it was reported in the MFIP evaluation. Effect sizes were not reported in the SSP evaluation.

Among single-parent ongoing recipients, the results are more favorable, especially in the short-term. As of the 36-month follow-up, MFIP-IO raised school performance and reduced behavior problems (as measured by both the Behavior Problems Index and Positive Behavior Scale). MFIP had a similar effect (with the exception of no change in the Positive Behavior Scale). In both cases, the effect sizes are modest (between 0.1 and 0.2). Among ongoing recipients, MFIP had no significant effect on children age 10 to 13 at random assignment. Long-term results are available only for the MFIP. For both younger and older age cohorts, the effect of MFIP on reading and math scores was positive although, only the effect on the 3<sup>rd</sup> grade reading score was significant.

For MFIP children in two-parent families, only longer-term results are available. As seen in Table 3, the program had no significant effects on either reading or math scores for children of two-parent ongoing recipients. Moreover, the signs of the estimates differ between 3<sup>rd</sup> and 5<sup>th</sup> graders.

The differential effect of MFIP-IO and MFIP as between single-parent applicants and recipients may be attributable to the differential effect of the reforms on employment and income in the two groups, at least in the short-term. Recall from Table 1 that, as of the 36-month follow-up, MFIP-IO and MFIP raised employment and income for recipients but not for applicants. These differences suggest that children in single-parent recipient families benefited from the increase in family income that resulted from the greater work effort combined with the financial work incentive.<sup>14</sup>

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<sup>14</sup> This inference is consistent with the findings reported in Clark-Kauffman, Duncan, and Morris (2003) for a larger set of welfare experiments. Based on measures of child achievement assessed two to five years after program entry, they conclude that the effects on children are more favorable when programs raise

Overall, for single-parent recipients, there does not appear to have been a detrimental effect of increased employment. Indeed, other data from the evaluation show that single-parent recipients significantly increased their use of child care, with a significant gain in both the fraction using formal child care (i.e., center-based care) and informal child care (Gennetian and Miller, 2000).<sup>15</sup> Children in single-parent recipient families may have also benefited from the improved marriage outcomes discussed in the prior section. On the other hand, the lack of any significant effect on achievement scores for children in two-parent recipient families suggests that the greater marital stability for the two-parent MFIP group did not translate into improved academic outcomes for the children who were under age 5 at the time of randomization.

The results for SSP, presented in Table 4, suggest further that the favorable effects of increased income in single-parent families may be most beneficial for children who were preschool-age at the time of the income supplement. As indicated in Table 1, through the period of eligibility, SSP increased monthly income for single-parent recipients in both provinces by a magnitude that was comparable to the gain experienced by MFIP single-parent recipients. Focusing on the results disaggregated by age group but pooled across the two provinces, SSP had no significant effects on a range of outcomes, either for children age 1 to 2 at random assignment or for those age 13 to 15.<sup>16</sup>

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family income through generous earnings supplements compared with those that only mandate increased work effort.

<sup>15</sup> There was no significant change in the overall use of child care or in the type of care used for single-parent applicants despite the policy change in provider reimbursement incorporated into the MFIP reforms. The MFIP and SSP reforms did not include changes in the generosity of child care subsidies, in contrast to other reforms like the Working Families' Tax Credit in Britain. Francesconi and van der Klaauw (2007) find that the added child care tax credit contributed to the increased employment and use of formal child care among low-income single mothers.

<sup>16</sup> While there is no difference at the 36-month follow-up in parental reports of school achievement among those age 13 to 15 at random assignment, student reports show a significant negative effect on overall

For those age 3 to 4, however, SSP led to a significant short-term increase in the math skill score and in the parental report of general school achievement. Among the outcomes measured at the 54-month interview, there is a significant decline in the use of special education for this same age cohort. In addition, while there was no difference in average school achievement, parents were significantly more likely to rate their child as above average and less likely to rate them below average as compared with the control group (results not shown). As with MFIP, among the SSP treatment group with preschool-age children at the time of randomization, greater income and work effort were accompanied by an increased use of child care, particularly informal care providers, and an increase in hours spent in care and instability in care arrangements (Michalopoulos et al. 2002). These favorable effects are only significant in the British Columbia sample, but not the New Brunswick sample. It is notable that this difference goes against a possible beneficial effect of marriage on child outcomes given that the favorable effect of SSP on marriage was found only in New Brunswick. However, the smaller province-specific sample sizes reduce the power to test this hypothesis.

The SSP results also suggest that there may be a negative effect on outcomes for children who were nearing the transition to adulthood at the time of the income supplement. Those age 16 to 17 at random assignment were found to have an increased likelihood of ever having had a baby as of the 54-month follow-up, at least in New Brunswick.

Other research pooling experimental data from MFIP and SSP with other welfare experiments conducted over the same time period provide further support for the

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achievement, as well as a higher frequency of delinquent activity and alcohol use. These outcomes were not assessed at the 54-month follow-up.

hypothesis that preschool-age children benefit when welfare programs or earnings supplements increase family income and increase the use of the center-based child care (Morris, Gennetian and Duncan 2005). There is also some evidence to indicate that adolescents do not benefit in the same way from an increase in family income. Rather, unfavorable effects may result from the increase in maternal employment and an increase in responsibilities in the home environment for the adolescent (e.g., caring for younger siblings) (Morris, Gennetian, Duncan and Houston 2007).

## **V. Conclusion**

The efficient household model provides a useful means of analyzing the incentives for marriage that arise from both the single-parent and the two-parent components of work-conditioned transfer programs. The model points out that such programs may cause marriage either to rise or to fall. This is because they may improve the non-marital options facing single mothers, but at the same time, they may expand the marital utility-possibility frontier.

The limited empirical evidence yields both positive and negative effects, which raises the question of how such programs might be designed to better promote marriage. At a fairly obvious level, any aspect of the program which only reduced non-marital utility, or which only expanded the marital frontier, should increase marriage. Of course, such factors may also affect the household's allocation of resources, which is something that policy makers would want to take into account.

A less obvious lesson is that, in order to promote marriage, transfer programs should be structured so as to maximize the potential for efficient specialization within marriage. To the extent that it is efficient for the high-wage spouse to specialize more in

work and the other spouse to specialize more in home production, program rules that work against such specialization reduce the gains to marriage. MFIP promoted efficient specialization to a greater extent than SSP, since it allowed the couple to choose who satisfied the work requirement. This may explain why MFIP had more consistent positive effects on marriage than SSP.

The different effects that SSP had in the different provinces may have stemmed from an interaction between the program's incentives for marital specialization and the state of the labor market. Since SSP was tied to the mother's labor supply, it provided an incentive for the mother to work and, if there was to be any specialization within the household, for the husband to engage in home production. In British Columbia, where the labor market was relatively strong, the opportunity costs of such non-traditional specialization were higher than in New Brunswick, where the labor market was weaker.

Work-conditioned transfer programs may also affect the well-being of the children as a result of changes in marriage, employment, family income, and other aspects of family decisionmaking. An economic framework provides little clear guidance as the net results of such changes, suggesting there may be either favorable or unfavorable effects on child outcomes and that any such effects may vary with the stage of child development. The empirical evidence from MFIP-IO, MFIP and SSP bears out this expectation. Favorable effects appear to arise for preschool-age children when work-conditioned transfer programs raise family income and increase the use of center-based child care. Unfavorable outcomes are concentrated among children who are adolescents when their parents participate in the transfer program, even if family income is increased.

Since work-conditioned transfer programs are generally not designed to directly affect child well-being, to the extent that children gain or lose from such programs, it is as a result of changes in family behavior that indirectly affect child outcomes. The experimental evidence from MFIP, SSP, and other welfare program evaluations suggests that key pathways for affecting child outcomes are changes in family income, the use of center-based child care, and time-use of adolescents. Interestingly, there is little evidence to suggest that the formation or maintenance of two-parent families that might result from such programs have any collateral benefit for children. Instead, to reinforce potential favorable effects on child outcomes or minimize potential negative consequences, it may be desirable to accompany work-conditioned transfers with policies designed explicitly to promote participation in high-quality early childhood programs, after-school programs for younger school-age children, and youth development programs for adolescents.

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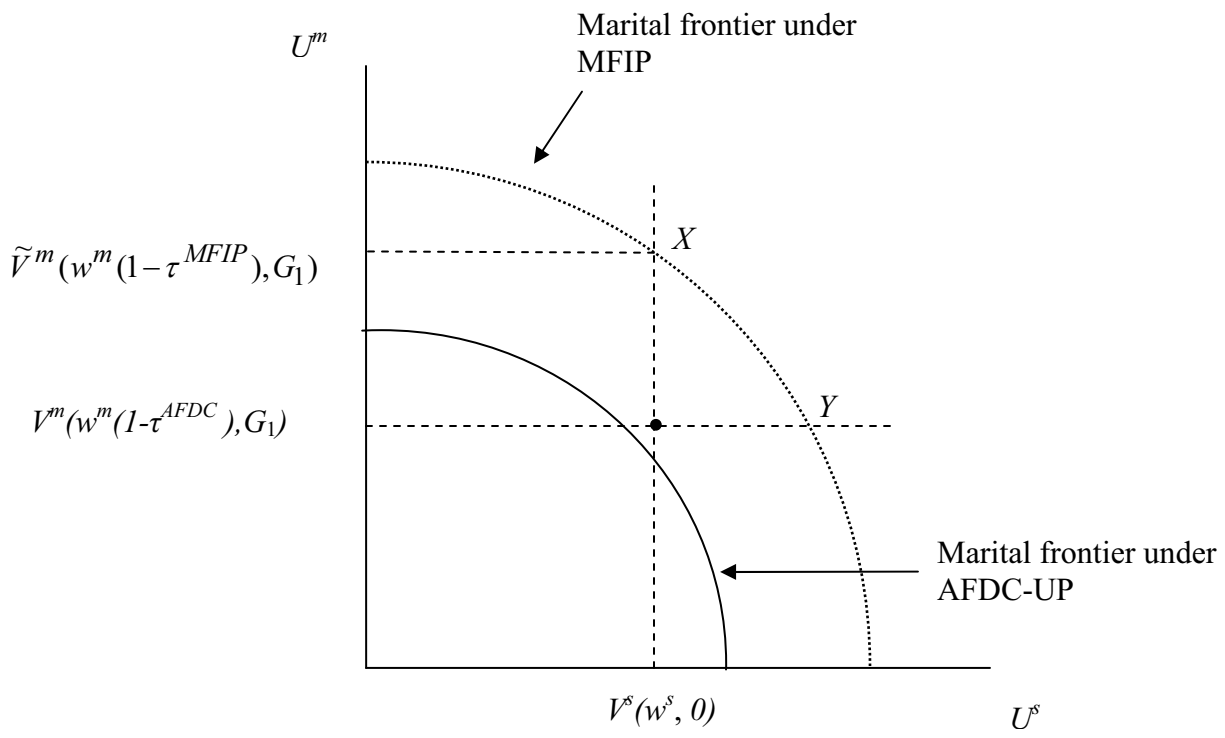


Figure 1

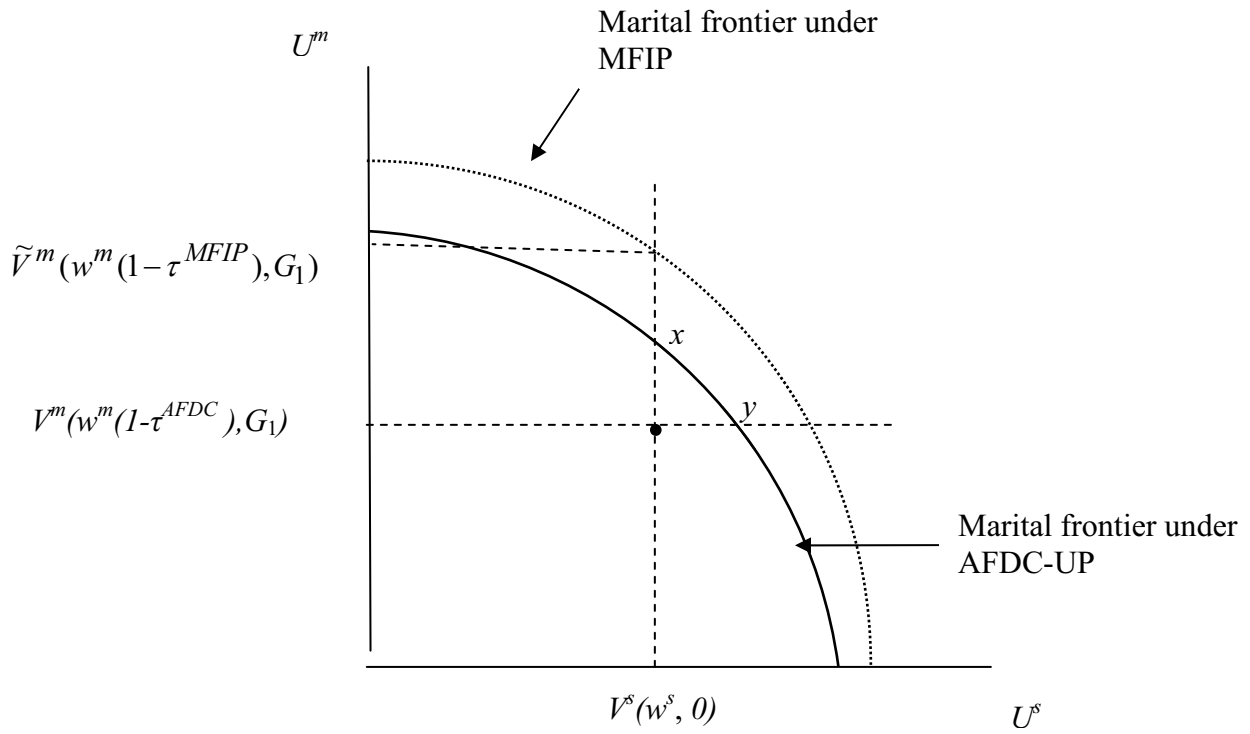


Figure 2

**Table 1—Effects of Work-Conditioned Transfer Programs on Employment, Welfare and Income**

	Year 3 Follow-Up		Year 6 Follow-Up <sup>a</sup>	
	Control mean	Impact	Control mean	Impact
<b>A. MFIP-Incentives Only</b>				
<b>Urban single-parent, recent applicants (N=3113)</b>				
Employment (%)	56.5	1.4	59.7	-0.5
Monthly earnings (\$)	750	-44	1004	-33
Received welfare (%)	31.0	4.7 ***	18.5	3.6 ***
Monthly welfare benefits (\$)	159	75 ***	88	22 ***
Monthly income (\$)	910	32	1093	-11
<b>Urban single-parent, ongoing recipients (N=1769)</b>				
Employment (%)	47.9	3.7 **	56.6	2.1
Monthly earnings (\$)	501	-3	751	36
Received welfare (%)	57.0	9.8 ***	40.0	1.7
Monthly welfare benefits (\$)	359	82 ***	223	17
Monthly income (\$)	859	79 ***	974	35
<b>B. MFIP</b>				
<b>Urban single-parent, recent applicants (N=4049)</b>				
Employment (%)	56.5	2.9 **	59.7	-0.5
Monthly earnings (\$)	750	13	1004	-19
Received welfare (%)	31.0	4.7 ***	18.5	1.2
Monthly welfare benefits (\$)	159	31 ***	88	6
Monthly income (\$)	910	44 *	1093	-13
<b>Urban single-parent, ongoing recipients (N=1780)</b>				
Employment (%)	47.9	9.2 ***	56.6	0.8
Monthly earnings (\$)	501	51 *	751	32
Received welfare (%)	57.0	7.3 ***	40.0	1.5
Monthly welfare benefits (\$)	359	48 ***	223	17
Monthly income (\$)	859	99 ***	974	49
<b>Two-parent, ongoing recipients (N=1523)</b>				
At least one parent employed (%)	65.3	-0.5	69.1	-2.5
Both parents employed (%)	27.0	-3.0 *	30.9	-2.6
Monthly earnings (\$)	1166	-129 **	1742	-104
Received welfare (%)	47.0	13.8 ***	28.5	3.9 *
Monthly welfare benefits (\$)	318	151 ***	180	19
Monthly income (\$)	1483	22	1922	-84

[continued]

**Table 1—Effects of Work-Conditioned Transfer Programs on Employment, Welfare and Income, Continued**

	Year 3 Follow-Up		Year 6 Follow-Up <sup>a</sup>	
	Control mean	Impact	Control mean	Impact
<b>C. SSP</b>				
<b>Single-parent, ongoing recipients, British Columbia (N=2538)</b>				
Employment, full-time (%)	19.2	7.1 ***	26.4	-2.0
Employment (%)	33.1	4.8 ***	39.4	-1.4
Monthly earnings (C\$)	393	36	550	-22
Received welfare (%)	68.7	-6.3 ***	54.6	-1.0
Received welfare (%)	68.7	9.8 ***	54.6	-1.0
Monthly benefits from welfare and supplement (C\$)	637	81 ***	464	-10
Monthly income (C\$)	1430	121 ***	1484	-22
<b>Single-parent, ongoing recipients, New Brunswick (N=2314)</b>				
Employment, full-time (%)	19.3	11.2 ***	26.6	5.4 ***
Employment (%)	35.9	7.2 ***	44.5	1.6
Monthly earnings (C\$)	300	63 **	421	39
Received welfare (%)	67.2	-10.2 ***	59.8	-6.5 ***
Received welfare (%)	67.2	12.3 ***	59.8	-6.5 ***
Monthly benefits from welfare and supplement (C\$)	490	98 ***	427	-48 ***
Monthly income (C\$)	1105.0	151.0 ***	1185	-39

<sup>a</sup>For MFIP and MFIP-IO, long-term outcomes are from year 5-6 administrative data. For SSP, long-term outcomes are from quarter 18 administrative data.

NOTES: Statistically significant at the \*10 percent, \*\*5 percent, and \*\*\*1 percent level.

SOURCE: MFIP-IO and MFIP: Gennetian, Miller, and Smith (2005), Tables 4.1, A.2 and A.3; SSP: Michalopoulos et al. (2002), Tables C.3, C.4 and C.6.

**Table 2—Effects of Work-Conditioned Transfer Programs on Marriage, Separation, and Divorce**

	Sample size	Year 3 Follow-Up		Year 6 Follow-Up <sup>a</sup>	
		Control mean	Impact	Control mean	Impact
<b>A. MFIP-Incentives Only</b>					
<b>Urban single-parent, recent applicants</b>					
Currently married and living with spouse (%)	709	15.1	-2.2	--	--
<b>Urban single-parent, ongoing recipients</b>					
Currently married and living with spouse (%)	718	5.8	5.2 **	--	--
Ever married, from public records (%)	1769	7.3	2.0	13.9	2.5
<b>B. MFIP</b>					
<b>Urban single-parent, recent applicants</b>					
Currently married and living with spouse (%)	1006	15.1	1.7	--	--
<b>Urban single-parent, ongoing recipients</b>					
Currently married and living with spouse (%)	724	5.8	2.8	--	--
Ever married, from public records (%)	1780	7.3	2.2	13.9	1.3
<b>Two-parent, ongoing recipients</b>					
Currently married and living with spouse (%)	290	48.3	19.1 ***	--	--
Divorced (%)	290	5.5	-3.1	--	--
Separated (%)	290	16.0	-9.5 **	--	--
Ever divorced, from public records (%)	1523	4.7	-1.4	11.1	-3.1 **
<b>C. SSP</b>					
<b>Single-parent, ongoing recipients, British Columbia</b>					
Ever married or common-law	2538	12.0	-2.8 **	20.2	-1.6
<b>Single-parent, ongoing recipients, New Brunswick</b>					
Ever married or common-law	2314	17.3	3.8 **	25.1	2.5

<sup>a</sup> For MFIP and MFIP-IO, long-term data are from a 6-year follow-up of administrative records. For SSP, long-term data are from the 54-month survey.

NOTES: Outcomes based on survey responses, except as indicated. Statistically significant at the \*10 percent, \*\*5 percent, and \*\*\*1 percent level.

SOURCE: MFIP-IO and MFIP: Miller et al. (2000), Tables 4.1, 4.7, 5.1, 5.6, 6.6, and Gennetian, Miller, and Smith (2005), Tables 4.2, B.2, D.1; SSP: Michalopoulos et al. (2002), Tables D.15 and D.16.



**Table 3—Effects of MFIP-IO and MFIP on Child Outcomes**

	Year 3 Follow-Up			Year 6 to 8 Follow-Up		
	Control mean	Impact	Effect size	Control mean	Impact	Effect size
<b>A. MFIP-Incentives Only</b>						
<b>Urban single-parent, recent applicants</b>						
<b>Age at RA: 2 to 9 (N=394)</b>						
School performance <sup>a</sup>	4.3	-0.2 *	0.2	--	--	--
Ever repeated a grade (%)	4.6	1.2	0.1	--	--	--
Ever in special education (%)	17.4	-2.7	--	--	--	--
Behavior Problems Index <sup>b</sup>	9.8	0.9	0.1	--	--	--
Positive Behavior Scale <sup>c</sup>	200.0	-3.4	0.1	--	--	--
<b>Urban single-parent, ongoing recipients</b>						
<b>Age at RA: 2 to 9 (N=573)</b>						
School performance <sup>a</sup>	4.0	0.2 *	0.1	--	--	--
Ever repeated a grade (%)	3.6	0.4	0.0	--	--	--
Ever in special education (%)	22.5	-1.4	--	--	--	--
Behavior Problems Index <sup>b</sup>	12.7	-1.5 *	0.2	--	--	--
Positive Behavior Scale <sup>c</sup>	193.7	6.9 **	0.2	--	--	--
<b>B. MFIP</b>						
<b>Urban single-parent, recent applicants</b>						
<b>Age at RA: 2 to 9 (N=517)</b>						
School performance <sup>a</sup>	4.3	-0.1	0.1	--	--	--
Ever repeated a grade (%)	4.6	-2.6	0.1	--	--	--
Ever in special education (%)	17.4	-1.9	--	--	--	--
Behavior Problems Index <sup>b</sup>	9.8	1.0	0.1	--	--	--
Positive Behavior Scale <sup>c</sup>	200.0	-3.2	0.1	--	--	--
<b>Age at RA: 0 to 3 (N=439)</b>						
Reading score (3rd grade) <sup>d</sup>	--	--	--	1430	-39 *	0.1
Math score (3rd grade) <sup>d</sup>	--	--	--	1411	-21	0.1
<b>Age at RA: 2 to 5 (N=447)</b>						
Reading score (5th grade) <sup>d</sup>	--	--	--	1451	-13	0.0
Math score (5th grade) <sup>d</sup>	--	--	--	1416	-18	0.1
<b>Age at RA: 10 to 13 (N=366)</b>						
School performance <sup>a</sup>	3.7	-0.3 **	--	--	--	--
Ever repeated a grade (%)	12.1	4.9	--	--	--	--
Parent contact re behavior (%)	33.4	11.5 ***	--	--	--	--

[continued]

**Table 3—Effects of MFIP-IO and MFIP on Child Outcomes, Continued**

	Year 3 Follow-Up			Year 6 to 8 Follow-Up		
	Control mean	Impact	Effect size	Control mean	Impact	Effect size
<b>B. MFIP, Continued</b>						
<b>Urban single-parent, ongoing recipients</b>						
<b>Age at RA: 2 to 9 (N=587)</b>						
School performance <sup>a</sup>	4.0	0.2 *	0.2	--	--	--
Ever repeated a grade (%)	3.6	1.8	0.1	--	--	--
Ever in special education (%)	22.5	-4.5	--	--	--	--
Behavior Problems Index <sup>b</sup>	12.7	-1.5 *	0.1	--	--	--
Positive Behavior Scale <sup>c</sup>	193.7	0.5	0.0	--	--	--
<b>Age at RA: 0 to 3 (N=325)</b>						
Reading score (3rd grade) <sup>d</sup>	--	--	--	1286	51 *	0.2
Math score (3rd grade) <sup>d</sup>	--	--	--	1293	21	0.1
<b>Age at RA: 2 to 5 (N=486)</b>						
Reading score (5th grade) <sup>d</sup>	--	--	--	1376	31	0.1
Math score (5th grade) <sup>d</sup>	--	--	--	1335	26	0.1
<b>Age at RA: 10 to 13 (N=318)</b>						
School performance <sup>a</sup>	3.6	0.0	--	--	--	--
Ever repeated a grade (%)	17.7	-3.1	--	--	--	--
Parent contact re behavior (%)	37.6	6.3	--	--	--	--
<b>Two-parent, ongoing recipients</b>						
<b>Age at RA: 0 to 3 (N=369)</b>						
Reading score (3rd grade) <sup>d</sup>	--	--	--	1332	12	--
Math score (3rd grade) <sup>d</sup>	--	--	--	1339	10	--
<b>Age at RA: 2 to 5 (N=394)</b>						
Reading score (5th grade) <sup>d</sup>	--	--	--	1382	-6	--
Math score (5th grade) <sup>d</sup>	--	--	--	1365	-10	--

<sup>a</sup> School performance s a parental report rated on a scale of 1 ("not well at all") to 5 ("very well").

<sup>b</sup> The Behavior Problems Index is a 28-item scale where each item is measured on a 3-point scale from 0 to 2, where a higher score indicates more negative behavior. The summed scale score can range from 0 to 56.

<sup>c</sup> The Positive Behavior Scale s a 25-item scale where each item is measured on an 11-point scale from 0 to 10, where a higher score indicates more positive behavior. The summed scale score can range from 0 to 250.

<sup>d</sup> The 3rd and 5th grade reading and math scores are scale scores that can range from 50 to 2,600.

NOTES: Statistically significant at the \*10 percent, \*\*5 percent, and \*\*\*1 percent level.

SOURCE: Gennetian and Miller (2000), Tables 4.8, 5.5, F.1, F.2 and Gennetian, Miller and Smith (2005), Tables 3.3 and 4.3.

**Table 4—Effects of SSP on Child Outcomes, Single-Parent Ongoing Recipients**

	Total Sample				British Columbia Sample				New Brunswick Sample			
	Year 3 Follow-Up		Year 4.5 Follow-Up		Year 3 Follow-Up		Year 4.5 Follow-Up		Year 3 Follow-Up		Year 4.5 Follow-Up	
	Control mean	Impact	Control mean	Impact	Control mean	Impact	Control mean	Impact	Control mean	Impact	Control mean	Impact
<b>Age at RA: 1 to 2</b>												
Reading score (PPVT-R) <sup>a</sup>	90.7	1.3	--	--	89.4	2.6	--	--	92.0	0.0	--	--
Average achievement <sup>b</sup>	--	--	3.9	0.1	--	--	3.8	0.0	--	--	4.0	0.1
Any grade repeated (%)	--	--	2.5	-0.1	--	--	1.6	0.8	--	--	3.6	-1.2
Ever in special education (%)	--	--	14.1	-1.6	--	--	11.0	1.2	--	--	17.6	-4.8
Behavior problems <sup>d</sup>	1.5	0.0	1.3	0.0	1.5	0.0	1.3	0.0	1.5	0.0	1.3	0.0
<b>Age at RA: 3 to 4</b>												
Reading score (PPVT-R) <sup>a</sup>	91.7	1.9	--	--	92.7	1.4	--	--	90.7	2.4	--	--
Math score <sup>c</sup>	0.3	0.1***	--	--	0.4	0.1*	--	--	0.3	0.1	--	--
Average achievement <sup>b</sup>	3.6	0.1*	3.8	0.1	3.6	0.1	3.8	0.1	3.7	0.2	3.9	0.0
Any grade repeated (%)	5.8	0.7	6.9	0.1	4.4	-0.7	3.6	-0.5	7.1	1.7	11.0	0.8
Ever in special education (%)	--	--	22.3	-4.2	--	--	22.5	-6.6**	--	--	22.0	-1.1
Behavior problems <sup>d</sup>	1.4	0.0	1.3	0.0	1.4	0.0	1.3	-6.6	1.4	0.0	1.3	0.0
<b>Age at RA: 13 to 15</b>												
Average achievement <sup>b</sup>	3.5	-0.1	--	--	3.5	-0.1	--	--	3.3	0.0	--	--
Dropped out of school (%)	10.4	2.6	28.9	2.9	9.4	0.8	23.6	3.0	11.3	4.3	34.4	3.5
Attending college (%)	1.5	-0.3	8.6	0.7	1.4	1.0	9.1	2.3	1.6	-1.6	8.1	-1.1
School behavior problems	1.4	0.0	--	--	1.4	-0.2	--	--	1.4	0.1	--	--
Currently working (%)	36.8	3.9	33.9	1.1	39.7	9.1	37.4	2.4	33.3	-0.8	30.3	-0.7
Ever had a baby (%)	--	--	14.1	2.1	--	--	11.5	1.4	--	--	16.8	3.2
Ever been arrested (%)	--	--	19.6	0.1	--	--	16.5	1.0	--	--	22.8	-0.6
<b>Age at RA: 16 to 17</b>												
Dropped out of school (%)	--	--	29.3	4.9	--	--	29.5	-0.4	--	--	29.2	9.5
Attending college (%)	--	--	11.4	2.5	--	--	12.8	4.4	--	--	10.2	0.7
Currently working (%)	--	--	58.7	-3.8	--	--	59.1	-0.5	--	--	58.3	-7.1
Ever had a baby (%)	--	--	18.1	9.7**	--	--	13.7	5.3	--	--	22.2	13.7**
Ever been arrested (%)	--	--	18.0	-0.9	--	--	10.3	7.0	--	--	25.0	-8.1

<sup>a</sup> The PPVT-R is a standardized score on a test of word knowledge.

<sup>b</sup> Average achievement is a parental report rated on a scale of 1 ("not well at all") to 5 ("very well").

<sup>c</sup> The math score is the proportion of items answered correctly on a math skills test.

<sup>d</sup> Behavior problems is a parental report rated on a scale from 1 ("never") to 3 ("often").

NOTES: Statistically significant at the \*10 percent, \*\*5 percent, and \*\*\*1 percent level. Sample sizes across columns as follows: Age 1 to 2 at RA: 765, 1159, 342, 615, 423, 544; Age 3 to 4 at RA: 761, 1137, 370, 628, 391, 509; Age 13 to 15 at RA: 432, 867, 204, 456, 228, 411; Age 16 to 17 at RA: 504, 244, 260.

SOURCE: Gennetian and Miller (2000), Tables 4.8, 5.5, F.1, F.2 and Gennetian, Miller and Smith (2005), Tables 3.3 and 4.3.