

# Child Care Subsidies, Welfare Reforms, and Lone Mothers

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Recent social assistance reforms appear to have reduced welfare rolls, but the effects on the well-being of those families and their children are less clear. Using simulations based on Canadian data, we find that some currently favored alternatives turn out to be effective in encouraging employment but punitive to families. Increased subsidization of market child care combined with income support for families appears to deliver a number of family-supportive outcomes.

THE 1980S AND 1990S, IN BOTH THE UNITED STATES AND CANADA, have been witness to a parade of different welfare reforms purportedly designed to reduce social assistance rolls and the culture of dependence, reduce government costs, and encourage adult welfare recipients into the workforce. Many of these reforms have been targeted at lone-mother families with young children.

In the United States, the tide of welfare reform has resulted in the replacement of Aid to Families with Dependent Children (AFDC) with Temporary Assistance to Needy Families (TANF) with strict work requirements and a lifetime limit of 5 years on the receipt of benefits paid for by federal funds. This latest restrictive phase of welfare reform was preceded by an expansionary one in the 1960s and 1970s when earnings disregards were raised, by a restrictive phase in the 1970s and 1980s when real AFDC benefits fell steadily and earnings disregards were effectively eliminated, and by an expansionary phase in the 1980s when the Earned Income Tax Credit was increased dramatically (Moffitt 1999).

The ups and downs of the Canadian experience with welfare reform have been similar in pattern, but since 1966 at least, social assistance benefits have always been more generous in Canada than in the United States, and

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subsidies for child care have been more available. Welfare reform in Canada has included attempts to make social assistance payments more generous (e.g., Ontario in the late 1980s and early 1990s), cuts to social assistance and implementation of work/training requirements (e.g., Ontario in the 1990s), and measures enhancing employment incentives (reforms to the Child Tax Benefit in the 1990s, raising earnings disregards).

Child care and early intervention programs have, from time to time, been considered as an important part of welfare reform. There appears to be an emerging consensus that the availability of good-quality child care may have important employment effects for lone mothers, as well as important developmental impacts on young children. A recent review of early childhood intervention programs concluded that "there is substantial support for longer-term effects on children's development, especially for school competence (e.g., children are less likely to be retained in grade and placed in special education)" (Reynolds et al. 1997:7). In a careful assessment of the results from a number of random-assignment studies of early childhood interventions, Karoly et al. (1998:66) state that "although the IQ effects produced by early intervention programs may be short-lived, there appear to be strong and longer-lasting benefits in terms of educational outcomes, such as academic achievement and other aspects of school performance."

Although one province (Quebec in the 1990s) has made child care universally available at low cost (and free to low-income families), most other provinces have cut back on public support for child care. In the United States, under AFDC, families could not be required to work unless child care was available. This provision no longer exists, although more funding is now available for child care (Hofferth 1997).

The apparent results of these reforms suggest that they have achieved their aims. In both the United States and Canada, welfare rolls have fallen dramatically, by about half since the mid-1990s in the United States and somewhat less in Canada. As a result, government expenditures on social assistance have fallen. At the same time, with a booming economy in both countries, many parents previously on social assistance have found jobs. However, cause and effect are somewhat unclear in this "success" story. Can the stronger work incentives of recent welfare reforms really explain the falling welfare rolls? Are most lone-mother families, including their children, better off than they were before? Is there a mix of welfare and child care policies that might deliver better results?

These are difficult questions to answer. In this article we provide some preliminary answers with policy simulations based on Canadian data. The data provide information about employment incomes, social assistance

incomes, and child care costs facing lone-mother families with young children. Policy simulations on the employment and child care decisions of these families provide insight into the tradeoffs involved in policy design of welfare and child care reforms.

This article has four components. In the next section we briefly sketch the theoretical framework through which we examine the impacts of public policy primarily on the labor supply of lone mothers but also on their choice between forms of child care that are purchased in markets and other types of care. In the third section we lay out and estimate a simple model of labor supply and child care choice using data for Canada. The model includes a number of variables that can be and are the target of public policy. In the fourth section we perform a number of simulations using the empirical results from the preceding section to demonstrate the potential impacts of social assistance, wage subsidy, and child care assistance policies on the labor supply of lone mothers. The simulations demonstrate that positive welfare reforms combined with substantial child care assistance can go as far as punitive welfare policies in encouraging mothers into labor market work. Summary comments conclude the article.

### Theoretical Framework for Measuring Policy Effects

Our model focuses on the labor-supply decision of lone mothers, where lone mothers are assumed to try to maximize utility for themselves and their children, subject to their constrained incomes and to social assistance and child care subsidy rules—they do the best they can with the resources and opportunities they have.<sup>1</sup> Each lone mother with preschool children makes a decision whether or not to work in the paid labor market. If her expected labor market wage, taking into account the cost of child care, exceeds the value of her alternative nonmarket opportunities, we anticipate that she will choose employment.<sup>2</sup> Her alternative nonmarket opportunities include the value of her home production (related to the number and ages

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<sup>1</sup> There have been a number of empirical studies that follow this basic approach. A review of this literature, in particular, that which focuses on the employment, social assistance participation, and child care choices of lone mothers, can be found in Cleveland and Hyatt (1996).

<sup>2</sup> We implicitly assume that there is no supply constraint on available jobs for lone mothers. Our data are from 1988, a business cycle and employment peak in Canada, when this assumption was not unreasonable. Further, we assume that the supply of child care is infinitely elastic. Evidence from the U.S. Current Population Survey over the period 1976 to 1986 suggests that the supply of child care was, indeed, very elastic (Blau 1993).

of her children, as well as her own preferences) and the amount she would receive in social assistance payments.

The employment decision is simultaneously a decision to use child care. Employed lone mothers choose between child care purchased in the marketplace and child care provided by relatives (nonmarket care). Market care includes licensed center-based care, care in the home of a sitter, and care by a nonrelated person in the child's home. The decision to use market care is anticipated to depend on the mother's income, the price of market child care, the availability of no-cost care by relatives, and other factors related to the mother's tastes and preferences.<sup>3</sup>

Social assistance policies and child care policies will affect outcomes by affecting the decisions made by lone mothers. Any increase in net employment income (e.g., due to an increase in the minimum wage) will make employment more attractive and will increase the probability of employment of lone mothers. Incomes will rise, and the use of market and non-market child care will increase. Since employment income increases result in reduced social assistance eligibility, net increases in income may be small.<sup>4</sup>

An increase in social assistance payments will permit the lone mother to substitute time in home production for time in the labor market without sacrificing total income. Therefore, an increase in social assistance benefits is expected to be associated with the withdrawal of lone mothers from employment, a reduction in the number of children using market and non-market child care, a decrease in employment incomes, an increase in non-employment incomes, and an uncertain effect on total money income.

In contrast, a reduction in social assistance payments will reduce the rewards to home production time, encouraging lone mothers to accept employment opportunities at lower wages than otherwise would be the case. Overall well-being will be lower, but the effect on money income is uncertain. There will be an increase in the number of children using nonparental child care, much of it nonmarket care if child care subsidies are unavailable.

Any enhancement of child care subsidies, which are conditional on employment and must be used to purchase market child care, will make employment more attractive relative to home production and will increase

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<sup>3</sup> It is often said that there is a shortage of child care spaces, especially licensed child care. Although local shortages of infant child care and care in rural areas are certainly not unknown, a perceived inadequate supply of child care is generally due to an inadequate supply of subsidies making licensed child care sufficiently affordable. The inadequacy of child care subsidies in the context of welfare reform is a central theme of this article.

<sup>4</sup> The typical benefit reduction rate in Canada is 75 percent of additional income above a small earnings disregard (National Council of Welfare, 1987, 2000).

employment of lone mothers. Overall, given that employment incomes are higher than social assistance payments, average incomes will rise, and the use of market child care will increase.

Simulations are necessary to determine the magnitude of changes to employment, social assistance takeup, and incomes induced by any policy change; the effects of combinations of policy changes; and the sign of effects that are theoretically ambiguous.

### The Empirical Model and Data

In order to examine the impact of various policy levers, we estimate a simple bivariate probit model of the employment and child care choices of Canadian lone-mother families. The model is similar to that estimated by Cleveland, Gunderson, and Hyatt (1996) for married mothers and Cleveland and Hyatt (1996) for a different sample of lone mothers.

Formally, the following two equations are estimated:

$$\begin{aligned} E &= X_e b_e + a_e PP + d_e W + g_e G + u_e \\ C &= X_c b_c + a_c P + d_c W + u_c \quad \text{if } E = 1 \end{aligned}$$

where  $E = 1$  if the mother engages in paid employment and 0 otherwise

$X$  = a vector of determinants of the decision to engage in paid employment (when subscripted by  $e$ ) and a vector of determinants of the decision to purchase market forms of care (when subscripted by  $c$ )

$PP$  = the expected cost per hour of child care

$W$  = expected annual wage income of mother, if employed

$G$  = expected government income from social assistance

$P$  = the expected cost per hour of market child care

$u$  = error terms, bivariate normal with mean 0, variance 1, and covariance  $p$

Subscripts  $e$  and  $c$  refer to the employment choice decision and the child care choice decision, respectively;  $a$ ,  $b$ ,  $d$ , and  $g$  are parameters to be estimated.

We use data from the Canadian National Child Care Survey (CNCCS) to estimate this model. The CNCCS was administered by Statistics Canada as a supplement to the monthly Labor Force Survey in September and October of 1988. The survey had a larger sample and was more comprehensive than any survey of child care use and employment before or since. The subsample used in this article includes lone-mother families with a

preschool child (less than 6 years of age and not in school).<sup>5</sup> The final subsample includes 831 lone mothers, of whom approximately 37 percent are employed. Of these, about 69 percent use market forms of child care.

Several of the key variables in our model are not directly available in our data set for all individuals in the sample. In particular, the expected wage if working is unavailable for the nonemployed, the expected price of market care is unavailable for those not currently using it, and the expected amount of social assistance payments is not available for those not receiving them.

We estimate determinants of the annual earnings of employed lone mothers with an ordinary least squares regression on relevant dependent variables and use this to project expected wages for all mothers in our sample. We use appropriate techniques to control for sample selection bias. The expected cost of market child care is determined based on a regression of hourly prices on relevant dependent variables, correcting for possible sample selection bias.<sup>6</sup> We assume that the cost of nonmarket care (care by relatives) is zero. The expected cost of child care faced by employed mothers is then calculated as the probability-weighted average of the expected costs of market and nonmarket care. Details about the calculation of these probabilities are provided in Cleveland and Hyatt (1996).

Expected social assistance income is projected from regressions on families deemed to be receiving social assistance. This regression is corrected to account for the probability that those currently receiving social assistance are a select sample in ways that are unobserved by the researchers.

We have entered a number of other variables in the employment equation in addition to the central policy levers of the costs of child care, mother's labor market wage, and social assistance. In the employment equation, these

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<sup>5</sup> The following observations were excluded from the analysis: families in which either the work situation or the child care situation in the reference week was reported to be unusual, families in which the child is disabled, families in which the mother is on maternity leave, families in which the mother is not responsible for child care decisions, families in which the mother cared for her own child while working, and families for which the main child care arrangement was kindergarten.

<sup>6</sup> These intermediate results are available from the authors on request. Mother's wage is determined using the Heckman two-step procedure. Variables included in the wage equation include mother's age and age squared, mother's education (seven dummy variables), mother's national origin/language, and regional dummy variables. We estimate prices for market care using fitted values from a linear regression model of the price for market care. The regression accounts for the possibility of selection into (1) employment and (2) the use of market forms of care. Variables included in the market price regression are the national origin/language variables, the regional dummy variables, five city population category variables (city of residence 500,000 or more, 100,000 to 499,999, 30,000 to 99,999, 15,000 to 29,999, less than 15,000, and rural), and single year of age of the youngest child dummy variables (one dummy for each of years 1 to 5, with less than 1 year being the omitted reference category). The approach to estimating market care prices based on regional variation (rather than family income) is supported in Chaplin et al. (1999). Note that the city size variables and the single year of age of the children variables are not included in the final market care/employment bivariate probit specification.

include mother's income from other sources (other than wages and government transfers), a cubic of the mother's age, the composition of the family (i.e., numbers and ages of children in the family), the lone-parent status of the mother (never married, divorced, or separated), and regional dummy variables. In the market forms of child care equation, we include mother's income from other sources, whether the mother attended university (as a proxy for tastes for market child care), the presence of another female adult in the household and the presence of children between 10 and 18 years of age (both reflecting potential care givers), national origin/language variables<sup>7</sup> (to capture potential cultural differences in the use of market care), and regional variables.

Table 1 shows parameter estimates and the marginal effects<sup>8</sup> for the bivariate probit model of engaging in paid employment and purchasing a market form of child care. Both higher child care costs and higher social assistance income reduce the probability that a lone mother will be employed. Mothers who are college graduates are significantly more likely to be employed than

TABLE 1  
BIVARIATE PROBIT ESTIMATES OF THE PROBABILITIES OF EMPLOYMENT AND USE OF MARKET FORMS OF CARE BY LONE MOTHERS

Independent Variables	Employment		Market Forms of Care	
	Probit Coefficient (Std. Error)	Change in Probability	Probit Coefficient (Std. Error)	Change in Probability
Expected cost of child care (\$/h)	-0.872** (0.195)	-0.354		
Expected cost of market care (\$/h)			-0.771** (0.244)	-0.280
Mother's expected wage (\$1000/yr)	0.037* (0.022)	0.015	0.072** (0.027)	0.028
Mother's expected social assistance income (\$1000/yr)	-0.212** (0.065)	-0.084		
Mother's income from other sources (\$1000/yr)	0.013 (0.405)	0.005	-0.019 (0.050)	-0.008

<sup>7</sup> These national origin/language variables divide the data set into those who are Canadian-born (the omitted reference category), those who are not born in Canada but who speak the majority language in their province (French in Quebec, English elsewhere), and those who are neither Canadian-born nor speak the majority language in their province.

<sup>8</sup> The "Change in Probability" gives the impact of a one-unit change in the value of the independent variable on the probability of employment or the use of market care as relevant. This marginal effect is calculated at an employment probability of 45.1 percent and a use of market care probability of 56.5 percent (corresponding to the mean probabilities in the first control case simulation in Table 2).

TABLE 1 CONTINUED

Independent Variables	Employment		Market Forms of Care	
	Probit Coefficient (Std. Error)	Change in Probability	Probit Coefficient (Std. Error)	Change in Probability
Mother is college graduate	0.605** (0.185)	0.234		
Mother is university graduate	-0.162 (0.644)	-0.063	-1.510** (0.652)	-0.476
Mother's age	0.643** (0.253)	0.255		
Mother's age squared (/10)	-0.142* (0.07)	-0.056		
Mother's age cubed (/100)	0.091 (0.071)	0.036		
Presence of female adult in household			-0.507** (0.179)	-0.199
Presence of child 10–18 years of age			0.113 (0.127)	0.044
<b>National origin/language</b> [Canadian-born]				
Not Canadian-born/English speaking (French speaking in Quebec)			0.917** (0.278)	0.295
Not Canadian-born/not English speaking (not French speaking in Quebec)			0.284 (0.218)	0.108
<b>Family composition</b> [All children < 6 years old]				
Some < 6; some 6–10 years old	0.556** (0.156)	0.217		
Some < 6; some 11–18 years old	0.756** (0.183)	0.304		
<b>Lone parent status</b> [Never married]				
Divorced	0.300** (0.108)	0.119		
Widowed	0.013 (0.319)	0.005		
<b>Region</b> [Manitoba, Saskatchewan, Alberta]				
Atlantic	-0.831** (0.259)	-0.281	-0.373 (0.286)	-0.148
Quebec	-0.400** (0.146)	-0.151	-0.336 (0.291)	-0.133
Ontario	-0.300** (0.129)	-0.115	-0.215 (0.206)	-0.086
British Columbia	-0.881** (0.331)	-0.293	-1.334** (0.433)	-0.444
Constant	-7.607** (2.618)		0.291 (0.724)	

\*Denotes statistical significance at the 10 percent level or greater in a two-tailed *t*-test.

\*\*Denotes statistical significance at the 5 percent level or greater in a two-tailed *t*-test.

NOTE: The estimated correlation coefficient of the errors in the employment and market care equations is 0.293 with an associated standard error of 0.327. Omitted reference categories are given in brackets. Changes in probability are evaluated at an employment probability of 45.1 percent and a use of market care probability of 56.5 percent (corresponding to the mean probabilities for the first control case simulation presented in Table 2).



are mothers with lower levels of education. Mothers with higher potential wages and those who are older (possibly with more job experience) are, as a result, more likely to be employed.<sup>9</sup> Mothers who have at least one child over the age of 6 are more likely employed than are mothers whose children are all under 6 (i.e., all preschoolers). Divorced mothers are statistically more likely to be employed than never-married mothers. Finally, single mothers in all regions of the country are statistically significantly less likely to be employed than are single mothers in the prairie provinces of Manitoba, Saskatchewan, and Alberta.

We find that the expected cost of market care has a negative and statistically significant association and mother's wage a positive and significant association with the use of market forms of care. The presence of a female adult reduces the probability of using market forms of care. Mothers who were not born in Canada but who speak English or French are more likely to use market forms of care than are Canadian-born single mothers. Mothers in British Columbia are statistically significantly less likely to use market forms of child care than are mothers in the prairie provinces.

An unexpected result that deserves comment is that mothers who are university graduates are statistically significantly less likely to use market forms of care than are single mothers who are not university graduates. However, since the predicted price of market care primarily reflects geographic price variation, the availability of government-provided subsidies to market child care for some low-income mothers is not reflected in these predictions. If mothers who attended university are less likely to be eligible for these subsidies, university education has a negative effect on the likelihood of using market forms of care.

Rather than describe the elasticities of the key independent variables in our model in detail here, we demonstrate the impacts of changes in these variables in the policy simulations that follow.

## Simulations

In this section we consider a number of policy simulations that broadly emulate the kinds of welfare and child care policy reforms that either have been implemented or are actively contemplated across North America. We

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<sup>9</sup> Note that mother's wage is significant at the 10 percent level. Given the obvious potential for collinearity between these variables and mother's expected wage, we estimated the model without the "Mother is college graduate" and "Mother is a university graduate" variables. The result was very little change in the coefficient on the mother's expected wage, but the standard error was reduced such that the wage variable became statistically significant at the 5 percent level or better.

begin by developing a control case that mimics the stylized social assistance and the base child care subsidy schemes in Canada in 1988. Within the base child care subsidy scheme, we examine the impact of a number of typical welfare reforms. We then reexamine the same welfare reforms given an alternative, more generous child care subsidy.

*The base child care subsidy system.* In 1988, the year for which our model is estimated, average social assistance payments were lower than is currently the case. Although welfare rules vary from province to province in Canada, we can approximate the situation facing lone mothers by taking a typical case. For a typical single-parent family with one child, full social assistance was approximately \$8500 (National Council of Welfare 1987, 1991). If the lone mother on welfare became employed, she could keep all the first \$2400 of employment earnings (the earnings disregard, or exemption). Any employment earnings above \$2400 would be hers to keep as well, but welfare benefits would fall by \$0.75 for each \$1.00 increase in employment income until the lone mother was no longer eligible for welfare.

For a lone mother, entering employment implies finding child care services. Some lone mothers have relatives available to provide care, but the majority do not. The average price of licensed child care in 1988 was about \$5000 annually, but many lone mothers were eligible for provincially provided child care subsidies. Subsidy rules vary across provinces, but as an approximation, a typical lone mother would have to pay a minimum fee of \$1000 annually, would be eligible for full subsidy of the remaining fees at any income level below \$12,000 annually, and would have child care subsidy reduced by \$0.50 for each additional \$1.00 of earnings beyond \$12,000 (Special Committee on Child Care 1987).

After simulating a number of policy changes within this base child care subsidy system, we compare the results of identical policy simulations under a more generous child care subsidy system: one with zero minimum payment, \$15,000 as the turning point, and 25 percent as the tax-back, or benefit-reduction, rate.

*Simulating welfare reforms under the base child care subsidy system.* Our bivariate probit estimates of employment and child care decisions of lone-mother families permit us to simulate the likely responses of these families to changes in policy parameters. Past reforms and reform proposals have included the following types of policy changes:

- Establishing a lifetime limit on the receipt of social assistance payments

- Compulsory work for welfare (workfare or training requirements)
- Cuts to social assistance payments
- Increases in social assistance payments
- Wage supplements or increases in minimum wage
- Tax benefits for low-income earners conditional on employment
- Subsidized child care costs

Over the last decade or so, different jurisdictions have tried different policies and combinations of these policies with apparently sizable effects on social assistance receipt, employment patterns, and income inequality. Simulations can assist in sorting out which policies are producing which effects. It is not possible to directly simulate the first two types of policy reform with our model.<sup>10</sup> A lifetime limit on social assistance is likely to have effects similar to a dramatic cut in social assistance payments (which we do calculate in simulation 1), but our model cannot simulate the short-run intertemporal substitutions that this policy might induce. However, we are able to calculate the probable effects of other types of policy reforms and combinations of them.

The following simulations are reported in the top panel of Table 2:

1. Control case (i.e., the 1988 welfare and child care price environment under the approximation to the 1988 child care subsidy system)
2. Decrease social assistance income by 20 percent across the board
3. Increase social assistance income by 20 percent across the board
4. Increase wage income by 20 percent across the board
5. Cut social assistance by 20 percent and simultaneously increase wage income by 20 percent
6. Cut the cost of market child care by 50 percent

These simulations are akin to policy changes that have been implemented or recommended in various jurisdictions. In Canadian terms, the cut in social assistance is similar to that introduced in Ontario in 1996 and in Alberta in the late 1980s. The increase in social assistance is similar to that

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<sup>10</sup> Compulsory workfare rules have only been adopted in one Canadian province (Ontario in 1998; Shafer, Emes, and Clemens 2001), and these rules do not apply to lone mothers with preschool children. In general, we would expect workfare schemes to put strong additional pressure on mothers to work (i.e., at lower expected wages than they would otherwise have accepted). The impact on employment and on average family incomes therefore would be akin to the effects of a cut to welfare payments.

TABLE 2  
 SIMULATIONS OF THE EFFECTS OF WELFARE REFORMS, WITH CURRENT AND  
 ALTERNATIVE CHILD CARE SUBSIDY SYSTEMS  
 (standard errors in brackets)

Simulation	Employed (%)	Using Market Child Care (% of Employed)	Average Employed Earnings	Average Nonemployed Income	Weighted Average Income
Simulations Based on Current (Base) Child Care Subsidy System					
1. Control case	45.1 (20.9)	56.5 (19.8)	\$17,769 (9,607)	\$7,097 (1,351)	\$11,918
2. Cut welfare 20%	55.4 (21.3)	57.2 (20.1)	\$16,882 (9,089)	\$5,643 (1,118)	\$11,869
3. Increase welfare 20%	35.2 (19.5)	54.2 (19.6)	\$18,644 (10,302)	\$8,506 (1,632)	\$12,075
4. Increase wage 20%	45.0 (20.3)	58.8 (18.8)	\$18,664 (12,555)	\$7,100 (1,351)	\$12,304
5. Cut welfare 20% and increase wage 20%	55.4 (20.8)	59.2 (18.7)	\$17,676 (11,772)	\$5,644 (1,118)	\$12,310
6. Cut child care cost 50%	49.7 (22.4)	75.0 (13.0)	\$17,269 (9,374)	\$7,072 (1,369)	\$12,140
Simulations Based on Alternative Child Care Subsidy System					
1. Control case	55.8 (23.8)	79.1 (17.1)	\$16,837 (9,071)	\$7,051 (1,403)	\$12,512
2. Cut welfare 20%	65.1 (22.9)	77.6 (17.3)	\$16,221 (8,806)	\$5,624 (1,145)	\$12,523
3. Increase welfare 20%	46.0 (23.5)	80.5 (16.5)	\$17,709 (9,561)	\$8,506 (1,627)	\$12,739
4. Increase wage 20%	55.8 (22.9)	80.8 (12.7)	\$17,619 (11,739)	\$7,051 (1,403)	\$12,948
5. Cut welfare 20% and increase wage 20%	65.3 (22.1)	79.5 (13.2)	\$17,001 (11,255)	\$5,628 (1,148)	\$13,055
6. Cut child care cost 50%	57.1 (24.2)	83.1 (11.9)	\$16,794 (9,023)	\$7,027 (1,402)	\$12,604

NOTE: The top panel shows simulation results under the then (1988) current rules for eligibility for child care subsidy under which each family pays a copayment of \$1000 annually, the turning point for the end of full subsidy eligibility occurs at \$12,000, and the benefit-reduction rate is 50% above that income level. The bottom panel shows simulation results under an alternative child care subsidy system in which there is zero copayment, the turning point occurs at \$15,000, and the benefit-reduction rate is 25% on income above that income level.

introduced in Ontario in the early 1990s. The increase in wage income mimics the effect of a universal wage supplement or the Working Income Supplement to the Child Tax Benefit. The simultaneous decrease of social assistance and increase of wage income would have effects similar in spirit to that of the federal increase in the Child Tax Benefit conditional on employment in the late 1990s combined with simultaneous negotiated cuts in eligibility for provincial/territorial social assistance. The sixth simulation

—cut of 50 percent in the cost of child care—is similar in spirit to the recent child care reforms in Quebec, where licensed child care services are available for \$5 per day to all families.

It is obvious from the simulations in the top panel of Table 2 that the employment behavior of lone mothers with preschool children is sensitive to changes in policy parameters.<sup>11</sup> In the control case, about 45.1 percent of these lone mothers are employed (although we do not explicitly simulate participation in social assistance, most of the remainder would be eligible for and would collect social assistance payments). Most employed lone mothers with preschool children use market forms of child care (about 57 percent of employed lone mothers with preschool children). The average income of these employed mothers is \$17,769 annually (note that incomes of the employed may include social assistance, eligibility for which declines as employment income rises). The lone mothers who are not employed rely mainly on social assistance; their average income is about \$7100 annually. The weighted average income, combining employed and not employed mothers, is just under \$12,000.

A cut in welfare payments of 20 percent would make staying at home with children less attractive and less feasible for many lone mothers. The proportion employed is projected to increase by 10 percentage points. Those single mothers using market child care would rise in proportion with employment (staying at about 57 percent of all such families), and the average income of those employed would fall to about \$16,900. The fall in average employment income is a natural consequence of entry into the labor force of many lone mothers whose expected wage was previously too low to encourage labor force participation, which is now preferable to the lower social assistance benefits. The cut in social assistance payments would lower incomes of those staying on social assistance; their average income is projected to fall by about \$1500 annually, to about \$5600.

An increase in welfare benefits of 20 percent encourages more lone mothers to remain out of employment. The employment rate falls by about 10 percentage points relative to the control case, and use of market care falls approximately proportionately, to about 54 percent of all employed lone-mother families. The average wage of employed lone mothers rises (to \$18,644) as mothers with low expected wages leave the labor force. The

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<sup>11</sup> The pattern of effects of these policy changes on employment and use of market child care is not sensitive to moderate changes in the relative magnitudes of the coefficients of the key policy variables (mother's wage, social assistance, and child care price). The overall levels of employment and use of market care are different, but the pattern and magnitude of changes are very similar when parameter sizes are increased or decreased separately by 30 percent. (Results of this sensitivity analysis are available from the authors on request.)

higher welfare payments would raise incomes of those not employed by nearly \$1500, and the weighted average income of all lone mothers increases, by over \$150 annually, relative to the control case.

An increase of 20 percent in the gross wage (e.g., through a wage supplement) has no effect on employment. This result is due to the high benefit-reduction rates under social assistance rules. As a result of increased wages, proportionately more mothers choose market care (about 59 percent). Average incomes of employed mothers are about \$900 higher than in the control case due to the rise in wages but moderated by a decrease in social assistance eligibility of the employed. Incomes of those who are not employed are essentially unaffected, so weighted average income rises by \$386 relative to the control case.

The combination of lower social assistance payments and tax benefits conditional on employment can be represented by simulation 5—a 20 percent cut in welfare payments and a 20 percent increase in the wage. The cut in welfare payments makes employment relatively more attractive, as does the supplement to wages. Relative to the control case, employment rises by 10 percentage points, whereas the use of market care rises more than in proportion (to 59.2 percent of all employed lone mothers). Average incomes of the employed are about the same as in the control case. The leavening effect of the wage supplement is offset by the influx into employment of mothers with lower expected wages than incumbent workers. Of course, those still on welfare suffer a cut in benefits of over \$1400. The weighted average income of all lone mothers is about \$400 higher than the control case.<sup>12</sup>

The final simulation based on the current child care subsidy system shows the effect of a 50 percent cut in child care costs relative to control case values. Child care costs are obviously an important barrier to employment for lone mothers of preschool children. The additional subsidization of child care costs increases employment participation by 4.6 percentage points relative to the control case and increases the use of market child care to over 75 percent of all employed lone-mother families with preschool children. Average incomes of the employed fall (by about \$500 annually) as mothers with lower expected wages enter the labor force. Social assistance is largely unaffected, and the weighted average income of all lone mothers rises by about \$220.

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<sup>12</sup> Both the Earned Income Tax Credit in the United States and the supplement to the Canada Child Tax Benefit are employment-conditioned benefits that are designed so as not to reduce social assistance eligibility of recipients. In other words, these types of wage enhancements are made part of the earnings disregard. To the extent that welfare authorities do not correspondingly reduce social assistance benefits, this type of wage enhancement would be expected to have a larger positive effect on employment than shown in our projection.

What are we to conclude from this first set of simulations of the effects of alternative types of welfare reforms? First of all, it is obvious that policy matters—changes in policy have perceptible impacts on employment and child care decisions and on family incomes. Second, cuts in social assistance payments on their own will drive lone mothers off social assistance and into employment, but at considerable cost to the incomes (and presumably well-being) of those families who are unable to leave social assistance and obtain employment. Third, increased social assistance payments are (part of) a solution to employment or income problems of lone mothers, but only if a dramatic fall in the employment rate of lone mothers is an acceptable policy result. There is a strong negative effect of these increased payments on work incentives. Fourth, wage supplements (unless they are exempt from benefit-reduction provisions of social assistance programs) will not reduce welfare use and encourage employment experience, although they have a small positive impact on average incomes. Fifth, a combination of reduced social assistance payments and enhanced wages will encourage employment (but no more than reduced welfare benefits alone), raise average incomes modestly, and increase the proportion of children participating in organized early childhood care. Sixth, employment and child care decisions are also sensitive to the cost of child care, a relatively neglected aspect of recent welfare reforms.<sup>13</sup>

*Simulating welfare reforms under a more generous child care subsidy system.* The second panel of Table 2 presents all the preceding simulations again, but under a more generous child care subsidy rule—zero minimum payment, \$15,000 as the turning point, and 25 percent as the tax-back, or benefit-reduction, rate.<sup>14</sup> This subsidy system would make more lone mothers eligible for full subsidy and more lone mothers eligible for partial subsidy, and it would reduce the annual child care costs for those currently receiving full subsidy. These simulations are designed to indicate how child care policy matters to welfare reform. We conclude from these simulations that a combination of welfare reforms and child care reforms is likely to produce better results than welfare reforms on their own.

The general effect of this enhanced child care subsidy on all six simulations is to substantially increase the positive employment effects of any

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<sup>13</sup> Simulations incorporating a feedback mechanism to increase or decrease the price of market care with changes in its use have little impact on employment effects or family incomes, although they do moderate the effects on the use of market child care (results available on request).

<sup>14</sup> In work elsewhere, we have recommended an alternative subsidy rule with zero minimum fee, a turning point of \$19,000, and a 25 percent benefit-reduction rate (Cleveland and Hyatt 1998).

policy. In each case the use of market child care is enhanced. The average income of employed lone mothers is lower than in the previous set of simulations because of the encouragement into the labor force of those with lower expected wages. Social assistance incomes are essentially unaffected. Across all lone mothers, however, the weighted average income is always higher than in the previous group of simulations because enhanced child care assistance permits some mothers to benefit from employment opportunities who previously could not.

These simulations clearly invite the conclusion that child care policy does matter. First, more generous subsidy systems encourage the use of market (i.e., more formal forms of) child care. Second, while the pattern of employment effects in this second set of simulations is similar to the first, the level of employment is considerably higher. In other words, the more generous child care subsidy program effectively results in a shift upward of employment probabilities in each of the welfare program simulations. The only simulation that diverges somewhat from the pattern of employment effects observed under the less generous child care subsidy environment is the 50 percent reduction in child care price. This change is due to the fact that child care costs for most lone-mother families have already been reduced by the alternative, more generous subsidy system, so the cut in child care price affects only higher-income lone mothers.

Also worthy of note is the effect of the more generous subsidy system on both average employed income and the average income of all lone mothers. For every simulation in the more generous subsidy environment, the average income of employed mothers is lower than under the current subsidy system. This effect, which at first blush appears to be negative, simply reflects the entry of mothers with lower potential labor market incomes into employment in response to the further subsidization of their child care costs. A truer indication of the overall effects of child care subsidies on lone-mother incomes is found in the "Weighted Average Income" column of Table 2. The simulations show in each case that the average income all lone-mother households are higher than for the corresponding simulations under the current program. This income improvement occurs because more lone mothers are employed and earning a labor market wage that is higher than income from social assistance.

We conclude this section with a note of caution: Our model was estimated on data from a point in time prior to most major welfare reforms. When the model is used for simulation purposes, impacts of policy changes on the employment of lone mothers are broadly consistent with the apparent large reductions in welfare rolls witnessed in jurisdictions across North America subsequent to the recent round of reforms. For those social



assistance recipients who have not yet entered the workforce, however, it is an open question whether further changes to benefits or child care support can, on their own, ensure a successful transition to employment becoming a reality. This concern was aptly expressed by Danziger et al. (1999:2):

Currently, most state programs emphasize job search assistance services to move as many recipients as possible quickly into jobs. Typically they do not systematically assess whether undiagnosed barriers to employment—such as lack of basic work skills and experience, inadequate knowledge of workplace norms, transportation problems, health and mental health problems, substance abuse, and domestic violence—limit recipients' capacities to work regularly. . . . [S]uch a “work first” strategy may be appropriate for many welfare recipients who were on the caseload when . . . [1996 U.S. welfare reform legislation] was passed. However, given the large decline in caseloads since its passage, recipients who have not yet entered the workforce are likely to have more of these problems than the pre-1996 recipients.

Recipients with a complex set of such barriers, who are neither exempt [from mandatory work requirements] nor provided specific help to resolve these problems, are especially vulnerable to losing assistance for failure to meet these requirements, even though they have no alternative means of support.

## Summary Comments

While many of the recent welfare reforms focusing on reducing benefits and benefit eligibility have encouraged lone mothers into paid employment, they also will result in considerable hardship for mothers who do not enter the labor market and for their children. Our simulations suggest that subsidization of child care costs for market forms of early childhood services can have similar employment effects for lone mothers as more punitive welfare reforms, while maintaining higher average family incomes. Given evidence about the positive impact of early childhood interventions on children's development, child care subsidization may have beneficial long-run effects as well.

Our simulations also provide strong evidence for the beneficial effects of a combination of welfare reform measures, particularly where the combination includes more generous child care subsidies. Reforms that reduce social assistance payments concurrently with improving child care subsidies, for instance, have the strongest positive effects on employment of lone mothers. Compared with the same reforms absent more generous child care subsidies, the full combination of reforms leaves a much smaller fraction of the lone-mother population destitute (on social assistance).

Of course, the impact of child care on employment of lone mothers is not sufficient to recommend a policy of enhanced child care subsidization; its impact on children is at least as important. Especially for children with social, economic, or educational disadvantages, the evidence seems strong that this impact is positive (Karoly et al. 1998; Reynolds et al. 1997; Cleveland and Krashinsky 1998). This impact does depend on the quality of the early childhood services provided. Recently, in many of Canada's provinces, there has been an increase in the provision of government subsidies for the use of unregulated child care; this funding is directed at parents on social assistance and in workplace retraining (Beach, Bertrand, and Cleveland 1998:30). There is no evidence about the positive effects of unregulated child care on young children. In Quebec, however, increased child care funding is directed exclusively toward regulated care and the expansion of public full-day kindergarten services.

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APPENDIX

INDEPENDENT VARIABLE MEANS AND STANDARD DEVIATIONS

Independent Variables	Employment		Market Forms of Care	
	Mean	Standard Deviation	Mean	Standard Deviation
Expected cost of child care (\$/h)	0.623	0.24		
Expected cost of market care (\$/h)			1.258	0.331
Mother's expected wage (\$1000/yr)	14.014	8.558	18.284	10.452
Mother's expected social assistance income (\$1000/yr)	7.136	1.284		
Mother's income from other sources (\$1000/yr)	0.367	1.499	0.595	1.951
Mother is college graduate	0.106	0.234		
Mother is university graduate	0.043	0.063	0.118	0.324
Mother's age	27.7	6.3		
Mother's age squared (/10)	80.2	36.4		
Mother's age cubed (/100)	243.7	178.2		
Presence of female adult in household			0.128	0.335
Presence of child 10–18 years of age			0.251	0.584
<b>National origin/language</b> [Canadian born]			0.664	0.474
Not Canadian born/English speaking (French speaking in Quebec)			0.090	0.287
Not Canadian born/not English speaking (not French speaking in Quebec)			0.246	0.432
<b>Family composition</b> [All children < 6 years old]	0.173	0.379		
Some < 6; some 6–10 years old	0.627	0.484		
Some < 6; some 11–18 years old	0.199	0.399		
<b>Lone parent status</b> [Never married]	0.543	0.498		
Divorced	0.427	0.495		
Widowed	0.030	0.171		
<b>Region</b> [Manitoba, Saskatchewan, Alberta]	0.285	0.452	0.417	0.494
Atlantic	0.283	0.451	0.175	0.381
Quebec	0.142	0.350	0.152	0.360
Ontario	0.178	0.383	0.166	0.373
British Columbia	0.112	0.315	0.090	0.287