4   Effects of the ethical family income on labor participation, income distribution and poverty[1]

Gustavo Cabezas and Carlos Acero

1. Introduction

In August 2007, the then President of Chile Michelle Bachelet convened a group of experts and representatives of civil society to sit on the Presidential Advisory Council on Labor and Equity, which was created with the purpose of coming up with proposals to fight inequality and to achieve greater equity in the labor market. In this way, after eight months of work, the Council proposed a series of measures to foster an "inclusive, modern progress in Chilean society that promotes competition and provides opportunities". Since this report, the concept of an "ethical family income" (*ingreso ético familiar*) has gained strength. According to the way that the current authorities define it, the objective is to eliminate extreme poverty by 2014 with a series of proposals that involve policies focused on the most vulnerable people.

The Sebastián Piñera administration implemented the first component of the program in March, 2011. It involves a subsidy to the poorest comprised by a base bonus and an additional bonus for the fulfillment of certain commitments. The base amount consists in a monthly sum for each family member. The increments are additional sums for fulfilling certain conditions on schooling and health for minors. In addition, there is a component to promote female employment, with a single bonus for women who start work while in the program and who have not worked for the last two years.

The second component of the ethical family income, as the authorities have said and as suggested in the report by the Advisory Council, should

be a policy that stimulates employment. It is hoped that an announcement will be made in the coming months. For this very reason our simulation exercise to be given below uses the proposal formulated in the Council, since the final scheme ought to be in line with the proposal, as it was the case when defining the bonus. The Council proposed a subsidy for the income of formal workers to stimulate the incorporation of new members of the household into the job market, to increase formal employment and with it the quality of work, in addition to increasing the income of the poorest people.

As it has been defined, the ethical family income program is comprised by the two components already mentioned. For this reason, the two policies are jointly considered here, since both affect the employment decisions of lower income families. An increase in the poorest families' income is expected as a consequence of implementing the program, in addition to reduced poverty and increases in labor participation. Thus, our work methodology consists in evaluating the proposals as a whole, with a model with or without behavior, for three groups of potential workers: heads of households, their partners and other adults in the household.

The next section details the characteristics of the ethical family income. After that, Section 3 presents the methodology and data to be used, while Section 4 presents the microsimulation model. The effects on labor supply of the ethical family income program are presented in Section 5, and the effects on income, inequality and poverty are reported in Section 6. The final section contains the conclusions.

2. The ethical family income

What follows is a detailed description of the two components of the ethical family income program. The first is a social bonus, which corresponds to the first part of the program and, as said before, it is already being implemented, while the second is a labor subsidy corresponding to the proposal made by the Advisory Council.

2.1. The social bonus

The social bonus is the first step toward creating the ethical family income program in the country. Its composition consists of a base component, called the base bonus, and another bonus that depends on the

fulfillment of a series of conditions that are related to schooling and health treatment for minors, in addition to women's participation in the job market.

The beneficiaries of the bonuses are the families that belong to an existing social program known as *Chile Solidario*, which provides certain transfers to the households that score under 4,213 points in the so-called *Ficha de protección social* (FPS).[2] The new base bonus is provided to the head of the household, or to the partner of the head of household in case that the head is a man. The base amount consists of a monetary transfer for each family member, and it varies depending on the family's score in the FPS. For families with a score of less than 2,515 points the benefit is $7,500 (about US$16).[3] For those with scores between 2,515 and 3,207 points the allocation becomes $6,000 (US$13), while households with scores in between 3,207 and 4,213 points receive a benefit of $4,500 (US$10) per member.

The additional bonuses for the fulfillment of commitments consist of a series of transfers as certain conditions are fulfilled. The increments are given for child health checkups, schooling, and women's insertion into the workforce. The first case consists of a variable bonus, according to the FPS score, for each minor in the family under the age of six whose health checkup file is up-to-date. The amount of the benefit is obtained by multiplying $5,000 (US$10.60) by the number of months in the program. That is, for those who have been in the program the entire time the number of months will be nine (from March to December). Families with FPS scores of less than 2,515 points receive 100% of the benefit, those with scores in between 2,515 and 3,207 receive 80%, and those with scores in between 3,207 and 4,213 points receive 60%.

The schooling bonus consists in one allocation for enrolment and another for attendance. Families receive an additional allocation for all minors between the ages of six and eighteen if they are enrolled in an educational establishment, and another additional variable amount if their attendance is equal to or greater than 85%. The amount of both increments is calculated identically to the way in which the increment for child health checkups is calculated, with the difference being the number of months in the program. The increase for enrolment is calculated based on the number of months in the program between the months of April and May, or a maximum of two months. In contrast, the increment for attendance is calculated according to the months in the program between June and December.

The bonus for women's insertion into the workforce consists of a subsidy to the salaries of women over the age of 18 who did not work in between January 2009 and March 2011, and who register health and pension contributions for at least 3 consecutive months in between April and August 2011. The amount of the benefit depends on the salaries that they receive. If the average of the monthly remunerations between April and October is lower than $172,000 (US$366), then the subsidy is 10% of that average multiplied by three. If the average is in between $172,000 and $215,000, then the increment is a single payment of $51,600 (US$110). And if the average is in between $215,000 and $387,000, then the increment is three times the difference between $17,000 and the ten percent of the difference between the average and $215,000.

2.2. Labor income subsidy

The labor income bonus recently proposed by the Advisory Council consists of a 30% subsidy, for a maximum of 7.5 UF per month.[4] It is distributed 20% in direct payment to the worker and the other 10% to the employer. Then, as income increases the subsidy ought to be gradually reduced until reaching zero for incomes equivalent to 15 UF.

This subsidy has been designed for formal workers. That is, salaried workers or self-employed workers who contribute to a pension fund, health insurance, and unemployment coverage. The subsidy is focused on the group of poor and vulnerable workers. For this reason, the households that benefit from it are those belonging to the first and second deciles as reflected in their FPS scores. This proposal is aimed at achieving various objectives: first, to increase the income of the poorest families via formal workers' salaries; second, to incentivize hiring; and third, to increase formal employment and its quality in the medium term.

3. Methodology and data

3.1. Discrete-choice models of labor supply

Ex-ante policy analysis of tax-benefit reforms has been one of the major concerns of public economics. The use of microsimulation models is a significant breakthrough in the field, allowing for observed heterogeneity that previous models based on representative individuals could not capture (Bourguignon and Spadaro, 2006).

Within this framework, consumers are regarded as utility-maximizing individuals who choose the optimal combination of consumption and leisure according to their preferences. The first generation of models of this type relied on maximizing continuous utility functions, facing serious problems due to the existence of non-convex budget constraints. This obstacle can be overcome by restricting the attention to discrete-choice models where individuals must choose among J alternatives:

$$V_{ij} = U(\mathbf{X}_{ij}, \mathbf{Z}_i) + \varepsilon_{ij} ,$$

where the expected utility of alternative j for household i depends on a vector $\mathbf{X}_{ij}$ of variables, specific to alternative j and household i, a set of socio-demographic characteristics $\mathbf{Z}_i$, plus an error term. If we assume that ε_{ij} follows a type I extreme value distribution, it can be proved that the probability that alternative k is chosen by household i is given by:

$$P_{ik} = \Pr(V_{ik} \geq V_{ij}, \forall j = 1, ..., J) = \frac{\exp\{U(\mathbf{X}_{ik}, \mathbf{Z}_i)\}}{\sum_{j=1}^{J} \exp\{U(\mathbf{X}_{ij}, \mathbf{Z}_i)\}} .$$

The estimates of the underlying conditional/multinomial logit model are obtained by standard maximum likelihood techniques.

The framework above can be applied to describe the choice of the working hours of an individual that faces J alternatives, corresponding to a set of different work durations and labor supplies. In this chapter we posit the following general quadratic form:

$$V_{ij} = \beta_1 Y_{ij} + \beta_2 Y_{ij}^2 + \beta_3 L_{ij} + \beta_4 L_{ij}^2 + \beta_5 Y_{ij} L_{ij} + \boldsymbol{\gamma}' \mathbf{Z}_i Y_{ij} + \boldsymbol{\eta}' \mathbf{Z}_i L_{ij} + \varepsilon_{ij}$$

where Y_{ij} and L_{ij} stand, respectively, for the hourly disposable income and the number of leisure hours under alternative j for individual i, and $\mathbf{Z}_i$ is a vector of individual characteristics. These include age, schooling, number of children, zone (urban or rural), poverty condition, and dummy variables for part-time categories in order to capture the disutility of inflexible arrangements (see Wagenhals, 2009). The model is computed for all potential workers, irrespective of their actual working status. This means that hourly disposable income must be estimated using Mincerian equations for those individuals whose labor income is not observed. This can be done with a straightforward OLS model or correcting for selection bias using a two-step Heckman procedure.

Once an hourly income has been obtained for all individuals, the model simulates the potential income for each of the work options and

then compares the corresponding levels of utility. In order to make the model sensitive to unobservable components of labor supply, for each individual an error vector is extracted based on the type I extreme value distribution. Finally, the new post-reform incomes are calculated and the maximum-benefit option is identified. This process is repeated 50 times, so that for each individual a post-reform distribution of hours is obtained, conditional to the observed work hours. Thus, the option of post-reform hours chosen will be the distribution mode, with this option being the most likely, conditioned by individuals' observed characteristics and their pre-reform work hour preferences (Creedy and Kalb, 2005).

3.2. Data

The data to be used in the simulation comes from the 2009 national survey Casen (acronym for Encuesta de Caracterización Socioeconómica Nacional). Casen, is a household survey, statistically representative at national and regional levels, and for Chile's main cities. In the 2009 survey, 71,460 households were interviewed and information from 246,924 individuals was gathered. The Ministry of Planning conducts the Casen survey every three years and collects socioeconomic data on all household members, with questionnaire modules on income, socio-demographic characteristics, health, housing and labor, among others.

4. Microsimulation

The group included in the simulation of the ethical family income is made by the families that belong to the *Chile solidario* program, since the FPS scores are not available for all of them.[5] This focalization is the best approximation to the actual beneficiary group, as the families belonging to the program are those living in extreme poverty nationwide. For this reason, the amounts simulated for the social bonuses, which depend on FPS score ranges, are simulated as average amounts, after assuming that the proportion of families in each bracket is similar.

Not all family members are included in the labor supply simulation. The group of potential workers is defined as all people over 18 years of age and under retirement age (60 years for women and 65 for men) who are not attending any sort of educational establishment. Thus, it is in the group of potential workers that it is possible to find people who are in fact working and those who are not. Otherwise the analysis becomes

quite complex by having to model decisions on study-work (Bourguignon, Ferreira and Leite, 2003) or reinsertion into the labor market (Rogerson and Wallenius, 2010). The proportion of potential workers in the *Chile solidario* group of families is 47.4%, while in the rest of the population is 53.3%.

Once the potential workers are identified, they are classified as heads of households, partners of the heads of households, and others. Heads of households are understood to be primary income recipients; their partners are the secondary ones, and their decision to participate in the labor market is influenced by the decisions that the primary ones make. Regarding the others, it is assumed that the complementariness of their income is related to the total income of the main recipients. Descriptive statistics for each of these are presented in Table 1.

After establishing the universe where some sort of effect is expected, the model's discrete work hour ranges are defined. Five equal ranges were chosen for each of the groups: not working (0 hours), 1-15 hours per week, 16-31 hours per week, 32-45 hours per week, and, last, over 46

Table 1. *Descriptive statistics of potential workers and their classification*

	Sample	Mean	Std. dev.
Number of members in family	273732	3.5	1.5
Minors under 6 years	162852	1.7	0.9
Minors between 6 and 18 years	175857	1.7	0.9
Sector (urban = 1, rural = 0)	273732	0.8	0.4
Hourly income of heads	147,007	$1,662	$2,308
Hours worked by heads	222,779	29.1	23.6
Age of heads	222,779	40.6	10.5
Schooling of heads (years)	222,779	8.6	3.7
Sex of head (male = 1, female = 0)	222,779	0.5	0.5
Hourly income of partners	48,383	$1,572	$2,343
Hours worked by partners	132,605	15.4	21.8
Age of partners	132,605	38.9	10.1
Schooling of partners (years)	132,605	8.5	3.6
Sex of partner (male = 1, female = 0)	132,605	0.2	0.4
Hourly income of others	47,421	$1,290	$1,386
Hours worked by others	97,343	21.5	22.8
Age of others	97,343	27.7	10.1
Schooling of others (years)	97,343	9.6	3.9
Sex of others (male = 1, female = 0)	97,343	0.7	0.5

hours. The mode for each of these ranges is 0, 8, 30, 45, and 48 hours per week, respectively.

4.1. Salary estimation

In order to estimate the hourly salary of potential workers who are not participating in the labor market, Mincerian equations are estimated to predict the corresponding salary. The estimates are made for all potential workers, not just those belonging to the *Chile solidario* program, as that could bias the results.

The classification of potential workers by sex indicates that 14.5% of men have no income, while this proportion rises to 44.1% in the case of women. Thus, only in the case of women the estimated hourly salary should be corrected for selection bias. In order to estimate the income generation capacity we control for years of schooling, age, age squared and a dummy to identify people living in urban areas. As shown in Table 2, the results turn out to be significant and with the expected signs. Schooling, age, and belonging to urban areas have all positive effects, for

Table 2. *Estimates of potential workers' hourly salary*

	Males		Females	
	Coef.	t-statistic	Coef.	t-statistic
Ln hourly income				
Schooling	0.111	35.49	0.139	31.96
Urban = 1	0.117	8.64	0.289	10.73
Age	0.032	5.16	0.0311	6.13
Age squared	-0.00016	-1.96	-0.00020	-3.12
Constant	5.214	51.02	4.040	33.3
Selection equation				
Schooling			0.091	26.66
Age			0.00268	2.67
No. children < 14 yrs.			-0.100	-10.74
Head of household = 1			0.433	16.51
Urban = 1			0.196	9.63
Constant			-1.398	-22.62
Ath rho			1.032	13.52
Ln sigma			-0.0628	-2.51
Censored obs.			38,117	
Uncensored obs.			26,343	
N	51,103		64,460	

both men and women. Regarding the selection equation, the following variables are used: schooling, age, number of children under the age of 14 and dummies identifying female heads of households and whether people live in urban areas. As shown in Table 2, schooling, age, being head of household and living in urban areas have positive effects on labor participation, while the number of younger children has a negative impact on the likelihood that people will be working.

Once an hourly salary has been predicted for the potential workers who are not participating in the labor market, the coefficients and errors that represent their preferences according to the aforementioned classification were estimated. Table 3 presents the results obtained by estimating a conditional logit model for heads of households, partners, and other adults in the family. Note that that the explanatory variables that appear twice (age, schooling, children, their squares, and urban) interact in their first appearance with income and the other with leisure.

The model assumes dependence in decisions. That is, partners of the heads of households include the primary recipient's incomes in their utility function and those identified as others act similarly when making decisions regarding how much to work toward household income.

The marginal utility of income is positive for the three groups of potential workers. In all of them it is shown that the indirect utility function regarding income is convex. However, the marginal utility of leisure hours is negative. This could be due to the sample chosen for the simulation, as they are members of poor families who would prefer to work an extra hour to increase their incomes.

Upon observing the appreciation of leisure on the part of partners and other adults in the household regarding the income of the head of the household and the total income of the two main recipients, it is observed that the appreciation is positive. That is, the marginal benefit of the partners' leisure time is more positive the higher the income of the heads of households is. In the same way, other adults in the household have a greater positive appreciation of an additional hour of leisure time the higher the joint incomes of the head and the partner are.

5. Effects on labor supply

The effects on labor supply for all the potential workers simulated here (that is, those belonging to the *Chile solidario* program), are presented in

Table 3. *Estimates by group of potential workers*

	Heads		Partners		Others	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Income sq.	-8E-7	-43.3	-1E-6	-34.0	-1E-6	-17.7
Income	5E-2	115	3E-2	36.9	6E-2	50.0
Age	-5E-4	-35.2	-8E-4	-21.0	-4E-5	-1.0
Age sq.	6E-6	32.3	1E-5	23.4	-3E-6	-4.9
Schooling	-2E-3	-64.6	2E-4	6.2	-2E-3	-41.9
School. sq.	9E-5	66.3	-1E-5	-5.9	8E-5	36.4
Children	4E-4	7.2	5E-3	40.0	-2E-3	-13.2
Child. sq.	-1E-4	-8.5	-1E-3	-29.1	2E-4	3.1
Urban = 1	-5E-4	-8.6	-6E-3	-34.2	-5E-4	-3.3
1 to 15	-2E-2	-72.7	-1E-2	-24.3	-3E-2	-34.0
16 to 31	-3E-2	-103	-2E-2	-49.3	-4E-2	-39.3
32 to 45	-3E-2	-110	-2E-2	-55.7	-4E-2	-42.2
46 or more	-3E-2	-119	-3E-2	-63.9	-5E-2	-49.2
Inc. head			4E-6	32.3		
Leis. head			7E-5	35.5		
Leisure sq.	4E-3	162	6E-3	146	6E-3	137
Leisure	-9E-1	-124	-1.5	-129	-1.5	-116
Age	-8E-3	-74.7	-5E-3	-24.2	-6E-3	-31.5
Age sq.	9E-5	67.5	6E-5	26.1	7E-5	23.8
Schooling	-8E-3	-51.6	2E-3	11.9	-1E-2	-42.3
School. sq.	5E-4	47.9	-8E-5	-6.1	4E-4	27.0
Children	-7E-3	-16.9	2E-2	34.1	-2E-2	-18.2
Childr. sq.	4E-4	3.8	-4E-3	-27.4	2E-3	6.5
Urban = 1	-6E-3	-16.1	-3E-2	-47.4	-4E-3	-6.3
Indigent	6E-2	128	6E-2	60.4	5E-2	59.0
Poor	2E-2	77.5	2E-2	54.1	4E-2	79.1
Inc. recip.					1E-6	1.3
Sample size	1,113,895		631,905		486,715	
Log-likelih.	-294,843		-135,773		-112,961	

the first matrix given in Table 4. The results show that, for the population as a whole, after the ethical family income program is implemented the decisions regarding how many hours to work tend to drop. Before the ethical family income, 43% of potential workers do not participate in the labor market, while after it the percentage increases to 52%. Regarding the potential workers who remain on the labor market, it can be observed

Table 4. *Labor supply transition matrices*

Pre-reform ranges	Post-reform ranges					
All	0	1 - 15	16 - 31	32 - 45	46 & more	Total
0	43.27	0	0	0.08	0	43.36
1 – 15	0.96	4.18	0.01	0.22	0	5.38
16 – 31	2.78	0.01	4.17	0.72	0.05	7.74
32 – 45	3.10	0.01	0	24.47	0	27.58
46 & more	2.38	0.09	0.02	0.44	13.03	15.95
Total	52.49	4.30	4.20	25.92	13.08	100
Heads						
0	30.59	0	0	0.11	0	30.70
1 – 15	0.16	5.90	0.01	0.03	0	6.10
16 – 31	1.55	0	8.19	0	0	9.74
32 – 45	0.39	0.02	0	32.39	0	32.81
46 & more	0.31	0.06	0.02	0.07	20.19	20.66
Total	33.01	5.98	8.22	32.61	20.19	100
Partners						
0	61.08	0	0	0.1	0	61.17
1 – 15	1.75	2.80	0.02	0.45	0	5.02
16 – 31	5.18	0.05	0.31	0.47	0	6.01
32 – 45	8.71	0	0	8.61	0	17.32
46 & more	5.88	0.21	0	0.52	3.86	10.47
Total	82.59	3.06	0.33	10.16	3.86	100
Others						
0	48.04	0	0	0	0	48.04
1 – 15	1.73	2.14	0	0.33	0.02	4.23
16 – 31	2.32	0	0.26	2.69	0.24	5.51
32 – 45	1.67	0	0	27.93	0	29.59
46 & more	2.34	0	0.02	1.16	9.12	12.63
Total	56.10	2.14	0.28	32.10	9.38	100
Men						
0	25.25	0	0	0.18	0	25.43
1 – 15	0.82	3.06	0	0.25	0.01	4.14
16 – 31	0.91	0	4.26	1.16	0.03	6.37
32 – 45	1.42	0.02	0	38.41	0	39.84
46 & more	1.64	0.06	0.03	0.9	21.58	24.22
Total	30.03	3.14	4.29	40.91	21.63	100
Women						
0	58.36	0	0	0	0	58.36
1 – 15	1.08	5.12	0.02	0.19	0	6.41
16 – 31	4.34	0.03	4.1	0.34	0.07	8.88
32 – 45	4.51	0.01	0	12.8	0	17.32
46 & more	3	0.11	0	0.05	5.87	9.03
Total	71.29	5.27	4.12	13.38	5.94	100

that the percentage of people who increase their work hours is larger than the group that reduces them. This is proved by adding what is below and above the main diagonal, respectively: a 1.1% increase the supply of hours, and 0.08% even enter the market, but only 0.57% reduce the number of hours.

The next three matrices in Table 4 present the results of the simulation according to the considered typology of potential workers: head of household, partner and other adults. The results show the existence of heterogeneous effects according to the type of potential worker. Partners and other adults in the household are the groups that are the most affected. In these groups the predominant effect is to leave the labor market. Regarding the potential head of household, it is observed that only 3% decide to leave the labor market and 0.17% reduce the number of hours offered. Meanwhile, only 0.15% increase them. The effects on this group are minor.

The effect on the partners of heads of households is significant. Before the ethical family income, 61% of them did not participate in the labor market, but after it the percentage was close to 83%. The percentage of potential workers who continue working but with a reduced number of hours is 0.78%, while 1.04% increase them. There is also a larger percentage of other adults in the family who leave the labor market. The variation is close to 8%. However, this is the only group that increases the hours offered by close to 3% in the case of those who were already in the market.

The analysis by gender shows differences between men and women, as shown in the last two transition matrices in Table 4. For the group of men, close to 4.7% leave the labor market, a number that is almost three times lower than with women. The variations in hours among those who stay in the market are minor: 1% of men reduce the number of hours and 1.6% of them increase them. In the case of women, 0.2% reduce them and another 0.6% increase them.

6. Effects on income, inequality and poverty

The results in this section present the effects of the ethical family income on income distribution, inequality and poverty. Three scenarios are given for comparison: the base scenario, corresponding to the results of the 2009 Casen survey, the scenario with the effects of the proposal without

considering behavioral changes (only arithmetic), and, finally, the results considering variations in labor supply due to the introduction of the subsidy, whose effects were presented in the previous section.

In general the effects on each of these dimensions are positive, even after considering variations in labor supply and the rates at which people leave the market. It is important to note that to obtain these results the calculations are done on a household level. Table 5 illustrates the results on income distribution. The results on average incomes by autonomous income decile indicate that the autonomous income increases for all deciles. Monetary income increases in the same way; however, the variations in averages are higher in the latter. Indeed, as implied by the table, there are no significant variations in the distribution of autonomous income, while in the case of monetary income the percentage of total income for the first decile can be seen to increase by 0.1%.

Table 6 presents the effects that the ethical family income has on inequality. As shown there, the program contributes toward reducing inequality between the extremes of the income distribution, and the improvements are greater in the case of monetary income: the ratio of deciles for monetary income goes from 25.8 times to 25. This is a significant reduction and it reflects the weight that the transfer component of the ethical family income has. The same indicator in the case of autonomous income also drops, but to a lesser degree, while the Gini index is barely affected by the change in the distribution of income.

Finally, there is a significant effect on poverty. Table 6 shows how the implementation of the ethical family income program would manage

Table 5. *Effects on average autonomous and monetary income by decile*

D	Autonomous income			Monetary income		
	Base	Arithm.	Behav.	Base	Arithm.	Behav.
1	64574	65103	64928	114519	118371	118222
2	197684	200931	201095	230701	236925	237205
3	273527	274432	274357	300120	303340	303083
4	341200	341496	341881	360987	362955	363076
5	408560	410553	410675	425020	428734	428896
6	518246	518787	519233	532956	534620	534933
7	625845	628872	628819	637082	640788	640921
8	819056	818549	819841	827128	827073	828404
9	1149245	1149319	1150724	1155157	1155559	1157059
10	2958696	2958701	2959647	2960783	2961047	2962009

Table 6. *Inequality indexes and poverty statistics*

	Base	Arithmetic	Behavioral
Autonomous income			
Gini index	0.552	0.551	0.551
p10/p1	45.7	45.4	45.4
q5/q1	15.7	15.4	15.4
Monetary income			
Gini index	0.534	0.531	0.531
p10/p1	25.8	25	25
q5/q1	11.9	11.6	11.6
Poverty rate	15.1	14.4	14.5
Poverty gap	0.050	0.048	0.048

to reduce the poverty rate from 15.1% to 14.5%. It should also be noted that the difference between the arithmetic scenario and the one that considers a simulated behavior implies a 0.1% increase in the poverty rate, mainly due to variations in labor supply. The table also shows that the poverty gap is, on the other hand, reduced from 0.050 under the base scenario to 0.048 assuming that the ethical family income program is implemented (both, according to the arithmetic model and the one that allows for behavioral changes).

7. Conclusions

We have shown that an ethical family income program like the one presented in this chapter has positive effects on income distribution, inequality and poverty. However, the same cannot be said regarding labor participation. The effects on labor participation indicate that the social bonus has a negative impact on the work hours offered, and that the component proposed by the Council to incentivize labor participation is not enough to compensate the effects of people leaving the labor market. Along these lines, any proposal that accompanies the social bonus when implementing an ethical family income for the country must incorporate elements that incentivize labor participation and also that compensate for the transfer effects. Finally, it should also be mentioned before concluding that the results presented here might be biased downwardly due to the survey's problems with self-reporting and the focalization of simulated policies.

Notes

[1] Document prepared for the project "An Integrated Framework for the Assessment of Equitable, Pro-Growth Fiscal Reform in Latin America and the Caribbean: Fiscal Schemes for Inclusive Development (FSID)", co-funded by UNDP and IDRC. Any errors or opinions are the authors' and do not necessarily represent the views of the United Nations Development Programme or those of the International Development Research Centre.

[2] The *Ficha de protección social*, which can be translated as "social protection file", is the main instrument for focalization in the country. Its origins date back to the late 1970s, when it was called the CAS file and it measured households' socioeconomic condition. Later, in 2007, it was replaced by the current FPS, which seeks to identify families in vulnerable situation. This corresponds to the risk of poverty, which includes both poor households as well as those with a high likelihood of being so.

[3] In May 2011 the prevailing exchange rate was about $470 per dollar.

[4] The UF (*unidad de fomento*) is a monetary unit that is indexed to the inflation of the previous month. As of May 27, 2011, it was worth $21,801.41. At an exchange rate of $470 per dollar, this was approximately equal to US$46.40.

[5] See Larrañaga and Contreras (2010) for more in-depth information on the *Chile solidario* program.

References

Bourguignon, F., F. H. G. Ferreira and P. G. Leite (2003), "Conditional cash transfers, schooling, and child labor: Micro-simulating Brazil's Bolsa Escola Program", *World Bank Economic Review*, 17, pp. 229-254.

Bourguignon, F. and A. Spadaro (2006), "Microsimulation as a tool for evaluating redistribution policies", *Journal of Economic Inequality*, 4, pp. 77-106.

Creedy, J. and G. Kalb (2005), "Discrete hours labour supply modelling: specification, estimation and simulation", *Journal of Economic Surveys*, 19, pp. 697–734.

Larrañaga, O. and D. Contreras (2010), eds., *Las nuevas políticas de protección social en Chile*, Santiago: Chile.

Rogerson, R., and J. Wallenius (2010), "Fixed costs, retirement and the elasticity of labor supply", working paper, Economics Department, Arizona State University, Arizona.

Wagenhals, G. (2010), "Dual income tax reform in Germany: a microsimulation approach", Institute of Economics, University of Hohenheim, Stuttgart, Germany.