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**INNOVATIVE FEATURES IN CONDITIONAL
CASH TRANSFERS:
AN IMPACT EVALUATION OF
CHILE SOLIDARIO ON HOUSEHOLDS
AND CHILDREN**

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IWP-2012-03

February 2012

Innocenti Working Papers

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ISSN: 1014-7837

For readers wishing to cite this document we suggest the following form:
Martorano, Bruno and Marco Sanfilippo (2012), 'Innovative Features in Conditional Cash Transfers: An impact evaluation of *Chile Solidario* on households and children', *Innocenti Working Paper* No. 2012-03, UNICEF Innocenti Research Centre, Florence.

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Innovative Features in Conditional Cash Transfers: An impact evaluation of *Chile Solidario* on households and children

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Abstract. The *Chile Solidario* programme is an avant garde conditional cash transfer (CCT) in the Latin American context, introducing innovative features aimed at addressing specifically the multidimensional nature of poverty. This paper, using data from the Panel CASEN Survey for the years 2001 and 2006, presents an impact evaluation of this innovative programme. Using matching techniques to compare participants in the programme with a control group, and a difference-in-difference estimator, its impact on various socio-economic dimensions of well-being is evaluated and results at the household- and child-level are differentiated. At the household level we find that the programme has a significant impact on lifting families out of extreme poverty and that it does not have disincentive effects on labour market participation. For children, we find that the programme has contributed to increasing participation in school for those between the ages of 6 and 15, and to increased enrolment with the public health services.

Keywords: social protection, conditional cash transfers, programme evaluation, matching estimators

JEL Classification: C14, I30, I38

Acknowledgements: The authors would like to thank Giovanni Andrea Cornia, Leonardo Menchini and Chris de Neubourg for their helpful comments on the early drafts of this paper.

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1. INTRODUCTION

Social protection represents an important tool to mitigate poverty and to promote adequate living standards and conditions. The literature offers many definitions of social protection; most highlight the preventive-protective-promotive functions that social protection programmes provide to their beneficiaries (ERD, 2010), while others emphasize the transformative role of social protection in promoting empowerment and participation of individuals within society (Devereux and Sabates - Wheeler, 2004).

However, apart from definitional issues, there seems to be consensus around the fact that social protection has an important impact on poverty and vulnerability. Evidence from different kinds of programmes in the developing world shows that beneficiaries of social protection are generally better off compared to their counterparts in terms of the various dimensions of wellbeing, ranging from a reduction of poverty to gains in human capital (see Fiszbein and Schady, 2009; DFID, 2011 for a review of the evidence on the impact of transfers). In view of their increased vulnerability compared to adults, social protection is particularly relevant to children, given the role it can play in ensuring adequate nutrition, utilization of, and access to social services (UNICEF et al., 2009).

In Latin America social protection has largely taken the form of large scale implementation of conditional cash transfers (CCTs). These transfers have proven successful in combating poverty and inequality across the continent, while facilitating empowerment by increasing access to services and supporting investment in education, health and nutrition. Compared to the older, rudimentary programmes introduced in the region in the past, CCTs are better funded by the State and assure a greater coverage of the vulnerable population (Cornia and Martorano, 2010). Indeed, flagship programmes such as *Bolsa Familia* in Brazil and *Oportunidades* in Mexico now cover about 25 per cent of the population and cost on average less than 0.5 per cent of GDP (ERD, 2010). Most of the existing CCTs in the region require households to fulfill conditions linked to both educational attainment by children and regular health check-ups (Fiszbein and Schady, 2009). A more recent development of CCTs in the region is represented by the *Red Solidaria* in El Salvador, which – as well as offering transfers in exchange for education and health facility attendance – also provides a supply-side component to strengthen access to basic services, including investments in electricity, water, sanitation and other infrastructures (Britto, 2007).

Chile Solidario is an avant garde CCT in the Latin American context, introducing innovative features which are aimed at specifically addressing the multidimensional nature of poverty, considered not only as a consequence of the lack of income, but also as a result of low levels of human and social capital, and the vulnerability of a household to shocks (Palma and Urzua, 2005).

Using data from the Panel CASEN Survey for the years 2001 and 2006, this paper presents an impact evaluation of *Chile Solidario*. Matching techniques were adopted to compare participants in the programme with a control group, and a difference-in-difference estimator

was used to evaluate the impact of the programme on various socio-economic dimensions of well-being, distinguishing also between results at the household- and at the child-level.

The paper is organized as follows: Section 2 describes the Chilean economic and social context since the 1990s, providing some background on the basic design and implementation of *Chile Solidario*; Section 3 introduces the empirical analysis and Section 4 discusses the results; Section 5 concludes.

2. BACKGROUND: SOCIAL PROTECTION IN LATIN AMERICA: THE CASE OF *CHILE SOLIDARIO*

During the first half of the 1990s, Chile experienced important social and economic changes. After the end of the military regime, the new coalition - made up of centre-left parties (*Concertación*) - implemented several reforms in the labour market and in the social sector, financing them through a new tax reform (1990) and supported by the favorable external conditions and sustained economic growth.

As a consequence, poverty rates started to decrease quite rapidly. During the first half of the nineties (1990-1996) the moderate poverty rate dropped from 38.6 to 23.2 per cent and the indigence rate followed a similar trend, falling from 12.9 to 5.8 per cent (de la Guardia et al., 2011). Conversely, the second half of the nineties was characterized by relative stagnation, especially for extreme poverty, which decreased by just 0.1 points between 1996 and 2000. The evidence from the Chilean government's strategy to reduce poverty showed its inability to reach the poorest, who at the same time were excluded from accessing social services (Barrientos, 2010; Palma and Urzua, 2005).

Favoured in the early 2000s by the renewed upswing in economic performance, the government introduced a new set of policies broadly inspired by the concept of *prudent redistribution with growth* (Cornia and Martorano, 2010). During this phase, Chile moved to a social assistance based model of social protection, adopting conditional cash transfers (CCTs) as the main instrument, thus following the trend in many other Latin American countries over the last twenty years (Ferreira and Robalino, 2010).

It is within this context that the government introduced *Chile Solidario* in 2002 to improve standards of living also for the poorest members of society. As with other CCTs, it provides monetary transfers to indigent families enabling them to move out of extreme poverty in the short term, while it tries to support vulnerable people by creating opportunities for a better future in the long term. However, *Chile Solidario* represents an innovative approach with some idiosyncratic features making it a particular case, if not a model itself (Fiszbein and Schady, 2009).

- First, the programme can be still considered a “niche” one, since it is only targeted to those in extreme poverty, a group representing about 5 per cent of the country's population. Programme eligibility is defined using a proxy-means (the *Ficha CAS*) which ranks families according to their socio-demographic and economic conditions. In particular, this index considers four principal domains - health, income, education and

housing - used to define a threshold which differs according to location to better reflect geographical diversity.¹

- Second, there are notable features in the design of the programme compared to other CCTs in the region. Poverty is explicitly considered as a multi-dimensional experience and a capability approach is specifically adopted to ensure greater equity among beneficiaries (Barrientos, 2010; Palma and Urzua, 2005). According to some authors, the latter feature is particularly relevant as it enables social protection to address more effectively the needs of children, whose experience of poverty often has multidimensional aspects (Barrientos and De Jong, 2006). Families accepted for the programme initially cooperate with a social worker in order to assess their conditions and to agree on an action plan including specific measures to escape poverty; these formally become the “conditions” according to which they are enrolled in the programme. Indeed, a particular feature of the programme is that benefits do not depend on specific behaviour, but rather on recognized efforts to respect the contract they sign with the social worker (Galasso, 2006).
- Finally, an innovative feature of the programme consists of developing the supply side in order to provide programmes more specifically tailored to meet the needs of the poor. This change from single and independent policies to a comprehensive and interdependent system of social protection is, in fact, one of the long-term goals of the programme (Galasso, 2006).

2.1 Programme Components

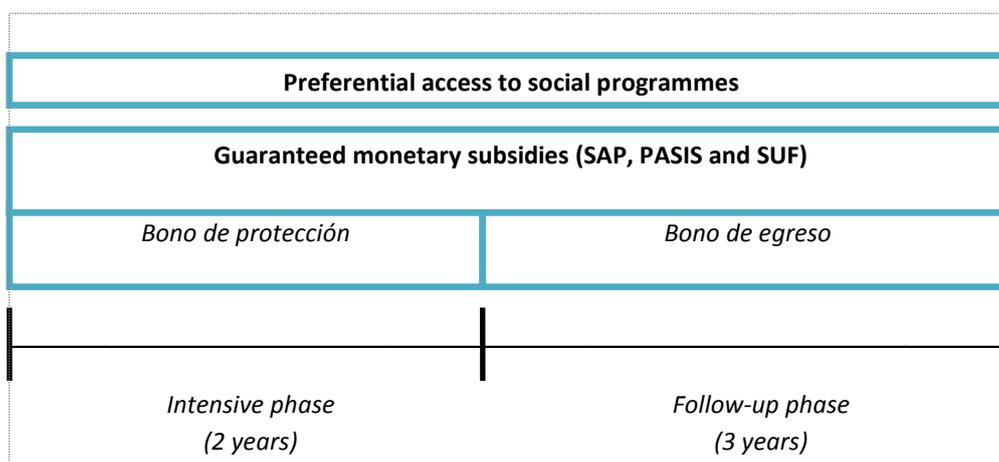
Family involvement in the programme is continuous for a period of five years, which can be split into two distinct phases: intensive (covering the first two years), and a follow-up phase for the remaining three years (see figure 1). During the first period, a central role is played by the psycho-social support given to the family. This support consists of intensive working sessions with the objective of better targeting the intervention to fit family needs (Government of Chile et al, 2004). This is done through an assessment of seven dimensions (identification, health, education, family dynamic, housing conditions, work and income) according to 53 minimum conditions for quality of life. The assessment provides the basis for the family’s action plan, which is monitored during participation in the programme, and favours access to services which therefore correspond to the specific necessities emerging from the psycho-social support.

At the same time, families receive a conditional monetary transfer called *bono de protección*. The transfer is directed to women with the aim of empowering their situation within the household (Armas, 2004). However, the transfer is small compared to other CCTs in the region as it is intended to reduce the transaction costs of accessing social services (Larranaga et al, 2009).

¹In 2006, *Ficha de Protección Social* replaced *Ficha CAS* as a criteria of targeting. *Ficha de Protección Social* includes selection criteria for material deprivations to better target the social stratification.

During the follow up phase, families benefit from an unconditional cash transfer called *bono de egreso*, an amount which is reduced over time, based on the principle that at this stage participating families should be able to work on improving their conditions on their own.

Figure 1. Components of *Chile Solidario*



Source: Authors' elaboration

Participating households also benefit from two other components: preferential access to the social programme and guaranteed monetary subsidies. As regards the former, beneficiaries have preferential access to other traditional monetary subsidies including the Family Subsidy (SUF) and the Welfare Pension for the Elderly (PASIS), respectively for all family members under 18 and over 65 years of age; the Welfare Pension for the Disabled (PASIS) to support families headed by disabled persons; and the Pure Water Subsidy (SAP) covering a monthly water consumption up to a limit of 15 cubic metres.

Programme coverage has been substantial so far. From 2002 to 2006, the programme was split into five waves, each involving about 50,000 households. Altogether, a total of 260,000 households were invited to participate, 5 per cent of which chose not to start, while 5.5 per cent had to interrupt after beginning (Raczynski, 2008). The Ministry of Social Development manages the programme at the central level, and implementation is decentralized. The cost of the programme has been kept under control despite an increase in the budget, and now represents around 0.08-0.1 per cent of the country's GDP (Fiszbein and Schady, 2009; de la Guardia et al., 2011). During the recent financial crisis the Government of Chile has provided additional funding from the Economic and Social Stabilization Fund to issue an extraordinary contribution of US\$40 to poor households with children benefitting from *Chile Solidario* (Barrientos and Nino-Zarazua, 2011).

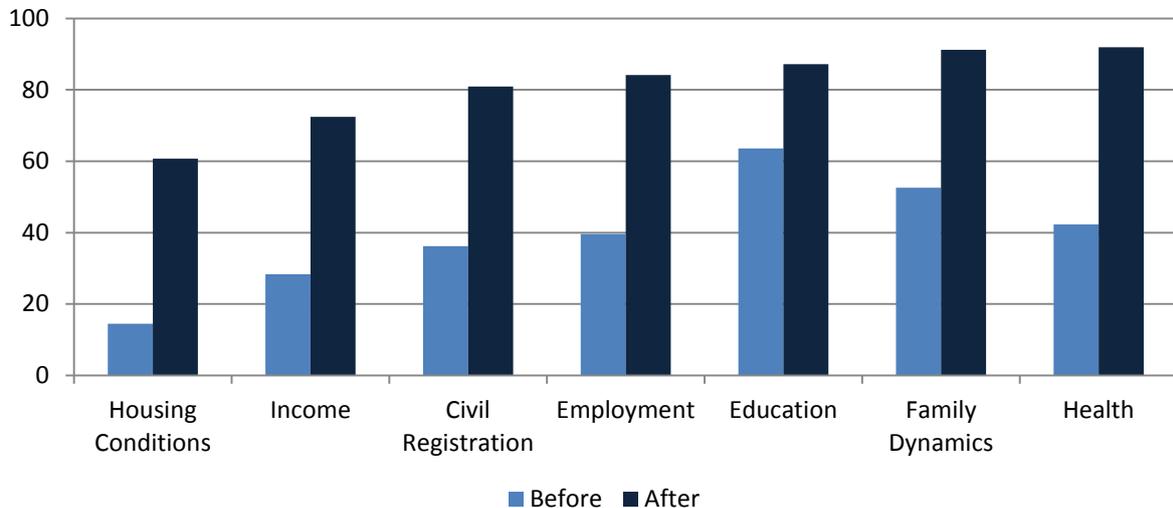
2.2 Results from previous impact evaluations

Earlier studies on *Chile Solidario* were based on surveys measuring the satisfaction of beneficiaries with respect to the main dimensions covered by the programme.

Barrientos (2010) reports data from a CEPAL survey of participants who joined *Chile Solidario* in late 2002 showing that there was considerable convergence between the deficits evident from analysis using threshold indicators, and the priority interventions indicated by participants. In 2004, the University of Chile performed a preliminary qualitative assessment of the programme. Using an approach based on focus groups and in-depth interviews, the aim of this preliminary assessment was to build a survey based on the participants' opinions (Government of Chile et al, 2004). The survey showed quite clearly that the goals of the programme were also shared by participants, given that over 90 per cent of respondents considered them relevant to their lives. In addition, a similar share of beneficiaries reported an increase in their sense of self-worthiness, while another 75 per cent expressed their satisfaction with public services provided by the programme. Overall, the beneficiary families gave a positive evaluation of the programme (Government of Chile et al, 2004).

A first rough evaluation of the programme outcomes is provided by Raczynski (2008), who reports results from a survey undertaken in 2004 of those beneficiaries who had accomplished all the conditions in at least one of the seven dimensions selected for the programme. The survey shows that there has been an average improvement of about 40 per cent in almost all the dimensions and that results comparing the situation before and after participation in the first phase of the programme are encouraging (see figure 2).

Figure 2. Compliance (%) with the main conditions of the programme



Source: Raczynski (2008).

More recently, the programme has been evaluated by means of more sophisticated empirical analyses. Galasso (2006) calculates the impact of the programme by adopting different empirical approaches including matching and regression discontinuity design. Considering the first two years (2003 and 2004) since implementation, the results show that the programme generated a positive impact on health and education. For families participating in the programme there was an increase in registration with the public health system, ranging between 2-3 per cent, especially regarding preventive visits for children under 6 from rural

areas and women over 35; pre-school enrolment for 4-5 year-old children and school enrolment for those aged 6-15 increased respectively by 4-6 per cent and 7-9 per cent. On the other hand, the study finds little or no effect in terms of employment and income generation. Interestingly, Galasso (2006) also shows that the provision of psycho-social support has increased communities' awareness of social service provision and has contributed to raising people's confidence concerning the future.

However, results provided by this study could be biased due to the fact that the baseline of the survey used (*Encuesta Panel Chile Solidario*) is subsequent to the entry into force of the programme, thus undermining the extent of a before and after analysis (Larranaga et al, 2009; de la Guardia et al, 2011). The evaluation analysis by Larranaga et al. (2009) tries to overcome this bias by testing the impact of *Chile Solidario* on the first group of participants, i.e. those who joined the programme in 2002. They show that beneficiaries of *Chile Solidario* have performed better compared to the control group in terms of employment of additional persons within the households (+2 per cent) and especially in terms of improvements in their housing conditions (+22 per cent). Similarly, de la Guardia et al. (2011) use an administrative panel database which allows for pre-treatment control and shows that the programme has a positive impact in terms of fostering employment of the head of household while reducing labour participation for the rest of the household.

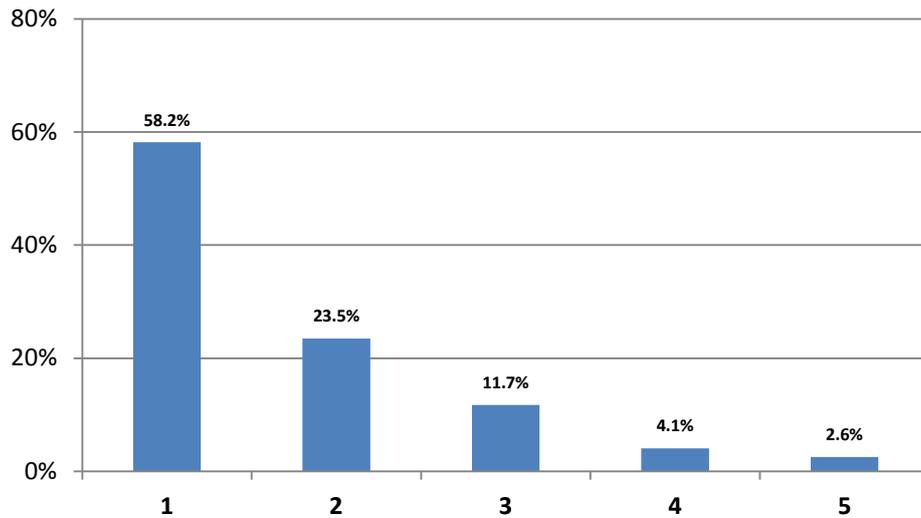
3. THE IMPACT OF *CHILE SOLIDARIO* ON HOUSEHOLDS AND CHILDREN

3.1 Data

The data used for the empirical analysis are taken from the Panel CASEN Survey, which has been implemented through a cooperative effort involving FSP (*Fundación para la Superación de la Pobreza*), MIDPLAN (*Ministerio de Planificación*) and OSUAH (*Observatorio Social de la Universidad Alberto Hurtado*). Data report information on the socio-economic conditions of Chilean households for the years 2001 and 2006, and include four regions representing about 60 per cent of the country's population: Atacama, Maule, Bio Bio and Metropolitan Regions. The number of individuals included in the survey was 18,857 in 2001 and 14,568 in 2006. The questionnaire consists of six modules providing information on demography, employment, income, education, health and housing. The multi-year dimension of the dataset enables production of a panel analysis evaluating the evolution of the main socio-economic conditions of beneficiary households compared to non-participants.

As can be seen in figure 3, the programme is well targeted considering that in 2001 more than 80 per cent of participants belonged to the bottom two income quintiles, while only 8 per cent were from the richest two quintiles.

Figure 3. Distribution of *Chile Solidario* beneficiaries by income quintiles (2001)



Source: Authors' elaboration based on Panel CASEN Survey data

Table 1 reports the characteristics of the beneficiary group compared to non-participants. Beneficiary households have a lower income per capita and are more likely to come from rural areas, where poverty is widespread. They have a larger number of children compared to non-beneficiaries and are relatively more likely to be employed in the informal sector. In addition, they have fewer years of education on average and worse conditions for all the housing indicators considered.

Table 1. Comparison between the participants group and non-participants according to different dimensions (2001)

Dimension	Indicator	Not treated	Treated
<i>Monetary</i>	Household income per capita (thousands of \$)	171.68	69.25
<i>Labour</i>	Employment for the household head (%)	72.57	69.45
	Employment in the informal sector for the household head (%)	10.23	19.82
<i>Education</i>	The highest number of years of education in the family	11.62	8.65
<i>Area of origin</i>	Rural area (%)	11.89	30.27
<i>Demographic</i>	Household size (no. of components)	3.05	3.54
	Number of children (aged < 18 years)	1.42	2.36
<i>Housing</i>	No. of persons per room	1.18	1.55
	No water (%)	2.03	11.91
	No sewage system (%)	2.51	11.63
	No electricity (%)	0.69	3.33
	Bad wall conditions (%)	5.96	27.31
	Bad floor conditions (%)	7.16	39.42
	Bad roof conditions (%)	6.20	25.90

Source: Authors' elaboration based on Panel CASEN Survey data

3.2 Methodology

The aim of this paper is to measure the impact of the programme on different welfare dimensions for the family participants. For this kind of impact evaluation, the major issue is to identify the causal relationship between the programme and the outcomes, ruling out factors unrelated to the programme (Gertler et al 2011). In order to do so, we need to use a counterfactual which allows evaluation of the results of the policy intervention through a simple comparison of an outcome with and without the programme. However, given the non-experimental context of this analysis, we do not observe a perfect counterfactual situation.

To overcome this issue, we try to reproduce the experimental conditions defining a potential treatment group among the non-treated group using the matching estimation technique (Blundell and Costa Dias, 2009). Matching estimators should satisfy two fundamental hypotheses (Becker and Ichino, 2002). First, the *Balancing Hypothesis* assumes that the treatment effect should be estimated using families with the same features – equal distribution of observable and non-observable characteristics – independent of participation in the programme. Second - considering participation in the programme as a random process - the *Unconfoundedness Hypothesis* assumes that non-observable characteristics are unable to affect not only the treatment assignment but also the potential outcomes.

The matching estimation procedure is developed in two stages.² Firstly, families are ranked according to the potential right to be beneficiaries of the programme. To do this, we adopt the propensity score, which defines the probability that a family would participate in the programme given a set of observable characteristics. The probability function is measured employing a parametric specification, by means of a standard probit model.³ The set of explanatory variables adopted for this analysis is based on socio-economic factors affecting participation in the programme and referred to a period before its introduction (Ravallion, 2005). The variables introduced in the regression are: household market income, the largest number of years of education within the household, the number of children (under 14 years old), plus three characteristics of the house (number of people per rooms, water supply and roof conditions) as the programme considers the housing dimension to be one of the most important elements in defining the level of well-being. Finally, we introduce regional dummies in order to account for area specific factors affecting selection for participation in the programme.

The second stage consists of matching the units included in the sample in order to define the control group. In order to do this, we adopt Nearest Neighbour Matching, which selects

² To perform the matching estimation we use the PSMATCH2 software (Leuven and Sianesi, 2003).

³ There are no particular requirements in the selection of the functional form, which can be run as a linear regression or as non-linear models such as probit or logit. However, non-linear models may be preferred, assuring that the response variable lies between 0 and 1 as, in any case, the empirical literature shows that logit and probit models produce similar results (Caliendo and Koepf, 2005).

families in the control group as matching partners for beneficiaries, based on the closest propensity scores (Caliendo and Koepf, 2005).⁴

The average treatment effect which results from this match is equal to the differences in the average outcomes for the families included in the treated and those in non-treated groups (Imbens and Wooldridge, 2009). The panel structure of our dataset allows us to compare the effect of the programme on the selected dimensions of household well-being and their children over time.

4. RESULTS AND DISCUSSION

This section reports the results of the impact evaluation analysis of *Chile Solidario* on its beneficiaries. Previous impact evaluations of the programme – as summarized in part 2.2 – have highlighted well the multidimensional nature of its benefits among participating households (Galasso, 2006; de la Guardia et al., 2011). Our evaluation also emphasizes the cross-sectoral impact of the programme on its beneficiaries. In addition, besides looking at the household as the main unit of reference, we also measure the impact of *Chile Solidario* on some specific dimensions of child well-being.

4.1 Effects of the Programme on Multidimensional Poverty at the Household Level

As stated in Section 2, the main objective of *Chile Solidario* is to address the levels of extreme poverty among the population, which had stagnated since the second part of the nineties. Our results show that the percentage of beneficiary households which escaped extreme poverty status is 7 percentage points higher than that of matched control group households (Table 2). Results reported in table 2 also show that the impact of the programme on two related variables, i.e. income per capita and moderate poverty, are quite small and not significant. These results should however not appear contradictory. As indicated by the descriptive statistics, the programme performed well on targeting, mainly benefitting households well below the poverty line rather than those in moderate poverty. Considering the relatively small amount of the transfer, this means that a slight increase in income is sufficient to keep households above the extreme poverty line, but it is not sufficient to lift them out of moderate poverty.

⁴ Families in the control group can be used once (without replacement) or several times (with replacement) for the matching. In the former case, the replacement reduces the distance between the matched units and increases the estimation precision due to the bias reduction (Dehejia and Wahba, 2002). Following Imbens (2004), we adopt the 4 Neighbour Matching Estimator, with replacement.

Table 2. Change in income per capita, moderate and extreme poverty between 2001 and 2006

Indicator	T	C	DID
Δ Income/c	26748	21848	4899.98 (14834.2035)
Δ Moderate Poverty	0.2346	0.2250	0.0096 (0.0319)
Δ Extreme Poverty	0.1385	0.0673	0.0711*** (0.0239)

Notes: *, **, *** significant at 10, 5 and 1%. Standard errors in parenthesis.

DID defines difference between groups; C defines the control group and T the treatment group.

As the programme is based on a multidimensional concept of poverty, it not only seeks to improve the monetary conditions of beneficiaries, but it also tries to ameliorate their conditions in other dimensions of well-being.

In the case of the health dimension, the aim of the programme is to improve the health status of beneficiaries by means of increased attendance at health care and preventive services. Unfortunately, we do not have information on all these dimensions. The only information reported by the Panel CASEN Survey regards enrolment with the public health system (*Servicio de Atención Primaria de Salud - SAPS*). This is in fact one of the intermediate indicators set in the action plan as minimum conditions for improving family living conditions and, as such, it is monitored during the programme. Results, reported in table 3, show that – despite an absolute increase in participation – there is not a significant difference with the control group. One possible explanation for this outcome is that the levels of enrolment in the health system were already high before the introduction of *Chile Solidario* and therefore the impact of the programme on this area has been marginal.

Table 3. Impact of the programme on household characteristics

Dimension	Indicator	T	C	DID
<i>Health</i>	Enrolment in the public health system in 2006	0.9114	0.9044	0.0069 (0.0194)
	Hours of work in 2006 (per no. of people in the workforce)	32.8208	33.6093	-0.7885 (1.5441)
<i>Employment</i>	Work intensity in 2006	0.4712	0.4429	0.0287 (0.0265)
	Access to employment through the programme/OMIL in 2006	0.0538	0.0250	0.0288* (0.0154)
	Irregular occupancy of housing Δ (2006 – 2001)	0.0153	-0.0058	0.0211 (0.0176)
	Building repairs or house supplies improvement Δ (2006 – 2001)	0.2961	0.3250	-0.0288 (0.0350)
<i>Housing</i>	House extension Δ (2006 – 2001)	0.2038	0.2067	-0.0029 (0.0309)
	Building repairs or house supplies improvement related to public subsidies Δ (2006 – 2001)	0.0538	0.0250	0.0288* (0.0153)
	House extension related to public subsidies Δ (2006 – 2001)	0.0654	0.0091	0.0558*** (0.0161)

Notes: *, **, *** significant at 10, 5 and 1%. Standard errors in parenthesis.

DID defines difference between groups; C defines the control group and T the treatment group.

Nonetheless, the programme could produce a disincentive effect on the labour supply due to the cash transfers. As can be seen in table 3, after controlling for the number of people of working age, it is seen that participating households work on average only one hour less than the control group. Results also show that participation in the labour market, measured by work intensity (the ratio between workers and the number of people of working age within the household) is not affected by participation in the programme, confirming that there is no disincentive effect on labour supply. These last results partially contradict the conclusions presented by theoretical literature (see Moffitt, 2002), which show that the receipt of monetary transfers tends to reduce beneficiaries' work effort. The absence of a disincentive effect is likely to be due to the fact that such programmes are targeted to very poor workers with an inelastic labour supply (Fizbein and Schady, 2009). Indeed, similar findings have been reached also by studies on other CCTs in the region (see Amarante et al, 2011), including *Progresa* in Mexico (Skoufias and di Maro, 2008), and *Bolsa Familia* in Brazil (Oliveira et al., 2007). However, the evidence is again mixed especially in the intensive margins (i.e. hours worked). For instance, Maluccio and Flores (2005) show that in Nicaragua *Red de Proteccion Social* had a negative impact on the hours worked by men, while Borraz and Gonzales (2009) find that in Uruguay *PANES* generated a reduction of hours worked in the urban areas. Lastly, Ribas and Soares (2011) show that in poor areas *Bolsa Familia* negatively affected the hours worked but impacted positively on the participation of other household members in the labour market.

Moreover, the lack of a disincentive effect on labour supply could also be explained by the programme's aim to improve employment among its beneficiaries. *Chile Solidario* promotes public work projects or facilitates the process of looking for a job via enrolment at the local employment office (*OMIL*). Indeed, table 3 shows that the programme is successfully achieving this aim given that the share of households working thanks to *Chile Solidario* or *OMIL* (5.4 per cent) is higher than for the control group (2.5 per cent), the difference being statistically significant. A similar pattern has been observed by Galasso (2006), who showed that the programme directly increased employment among beneficiaries in urban and rural areas by 6 and 4 per cent, respectively.

Another important element covered by the programme concerns housing conditions. As reported by Barrientos (2010) and Galasso (2006), participants placed great emphasis on this issue and in particular on house ownership and the availability of basic infrastructures. Nonetheless, our results (table 3) show that there are no remarkable changes over the period considered. These results are different from those reported by Galasso (2006), who shows that, as a consequence of the programme, the beneficiary households improved their housing in order to face bad weather conditions. A possible explanation could be related to the presence of barriers on the supply side, as resources for housing were rationed while, in addition, it should be noted that some supply-side components of the programme were activated only after 2004. On the other hand, interesting findings emerge when considering improvements in housing conditions made by beneficiaries as a result of public subsidies, access to which is preferentially granted to the programme participants. Table 3 shows that housing improvements for the treated group were financed by public subsidies. There is a

significant difference between participants and non-participants of about 3 percentage points for building repairs and house improvement supplies; this increases to 5 points when house extensions are considered.

4.2 The Impact of *Chile Solidario* on Children

This section assesses the impact of *Chile Solidario* on children, analyzing some of the most relevant dimensions of their well-being directly or indirectly affected by participation in the programme. There is much evidence of how social protection affects some areas of child well-being (Fiszbein and Schady, 2009). However, there seems to be consensus on the fact that programmes such as *Chile Solidario*, which considers child deprivation in its multidimensional aspects, are among the most effective measures (Barrientos and De Jong, 2006). In what follows, we present the results of our analysis of the impact of *Chile Solidario* on selected dimensions of child well-being, including education, health and child labour.

It is not possible to assess the dynamics observed in the human capital dimensions as the period covered was from 2001 to 2006, meaning that children who were 15 years old in 2001 were 20 in 2006. Thus we consider the impact of the programme on household decisions concerning human capital investments for the year 2006 only.

With regard to education, households that participate in *Chile Solidario* have to satisfy nine minimum conditions. Regarding children specifically, those of pre-school age have to attend an institute, and all family members under 15 years old should attend school. Taking into account the number of children within each household, table 4 reports consistent increases in school enrolment for children aged 6-14. The difference in enrolment rates between the treatment and the control group in this case is significant, reaching about 8 percentage points. Conversely, we find that the effect of the programme on enrolment rates of children of pre-school age and children aged 15-18 is not statistically significant. In the first case, our result contrasts with that reported by Galasso (2006), who shows that pre-school enrolment increased by 4 to 6 per cent in the period 2003-2004. A possible justification comes from qualitative studies developed by MIDEPLAN which show that families seem to prefer to take care of children under 6 years old at home, considering them too young to go to school (Galasso, 2006).

Table 4. Impact of the programme on child enrolment in 2006

Indicator	Age group	T	C	DID
Education Enrolment/c	15-18	0.2154	0.2522	-0.0368 (0.0318)
	6-14	0.5468	0.4702	0.0766** (0.0377)
	3-5	0.0654	0.0558	0.0096 (0.0182)
Child Work (participation)	<15	0.0076	0.0010	0.0066 (0.0057)
Child Work (hours of work)	<15	0.0385	0.0308	0.0077 (0.0613)
Health	<18	0.6423	0.5203	0.1220*** (0.0369)
	<15	0.5346	0.4203	0.1143*** (0.0377)

Notes: *, **, *** significant at 10, 5 and 1%. Standard errors in parenthesis.
DID defines difference between groups; C defines the control group and T the treatment group.

Another important condition that households participating in *Chile Solidario* must satisfy is that children under 15 should attend school rather than work. Thus, combining the information available from the dataset on employment status and hours worked, we have estimated the effect of the programme on child work, adopting the same categories (hours worked and work intensity) analyzed in Section 4.1 Not surprisingly, given also the small numbers of children involved, there is not a great difference between the two groups for both indicators (table 4).

Finally, looking at the health dimension, we find that the programme has an important effect on the enrolment of children in the public health system (SAPS). Table 4 shows that children within participating households are more likely to be enrolled in the public health system compared to non-beneficiaries. The difference is around 12 percentage points and it is statistically significant when considering both children under 15 and those under 18 years of age. Such results are coherent with those reported in other qualitative analyses, which show that households enrolled in the programme benefitted from regular check-ups for their children (Government of Chile et al, 2006).

5. CONCLUSION

This paper has provided an empirical evaluation of *Chile Solidario*. Our results, based on an empirical analysis of the CASEN survey for the years 2001 and 2006, show that the programme has been effective so far, assisting households in terms of extreme poverty reduction, labour market participation and access to public resources. In addition, we find that the programme has a positive impact on children's well-being through both a high rate of participation in schooling and more regular attendance at health care facilities.

Some of the programme's features can help in understanding this performance and provide useful policy implications for the design of social protection in other countries. *Chile Solidario* represents an innovative approach to social protection by explicitly endorsing a

multi-dimensional concept of poverty, aiming to ameliorate the conditions of families living in extreme poverty, and seeking to overcome the problem of continuing intergenerational poverty.

To achieve this, one of the most interesting aspects of the programme is its ability to operate on both the supply and demand sides. Although the policy intervention takes place mainly on the demand side, through the provision of a cash transfer and the implementation of psycho-social support, its success in improving household conditions has been favoured by the ability of the State to supply adequate services to its citizens. Moreover, the achievements reported in terms of educational and health outcomes could be related to the overall approach which involves close collaboration between the beneficiary households and the social worker, who highlights the importance of attending school and of being enrolled in the health system to facilitate physical and cognitive child development.

Another important feature of the programme lies in its targeting. *Chile Solidario* has proven successful in reaching the poorest members of the population through the implementation of an ad-hoc approach based on a proxy means test. Nonetheless, although the ability to reach the target population is a necessary condition it is still not sufficient to overcome poverty. Indeed, the programme presents some drawbacks in relation to coverage and the amount of money transferred. Given that it is targeted to the extreme poor, the programme can still be considered a “niche” one. To reduce poverty effectively, policy action should be able to cover a significant part of the group identified as vulnerable. In addition, the amount of resources transferred must be related to programme goals. In the case of *Chile Solidario*, our results show that the monetary transfer is sufficient to push its beneficiaries out of extreme poverty, but not enough to ensure a reduction of moderate poverty.

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