Alleviating extreme poverty in Chile: the short term effects of Chile Solidario*

Aliviando la extrema pobreza en Chile: efectos a corto plazo de Chile Solidario

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Abstract

This paper evaluates the effect of an anti-poverty program, Chile Solidario, during its first two years of operation. We find that the program tends to increases significantly their take-up of cash assistance programs and of social programs for housing and employment, and to improve education and health outcomes for participating households. There is no evidence that the participation to employment program translates into improved employment or income outcomes in the short term. Finally, we provide suggestive evidence of the key role that the psycho-social support had in enabling this change, by increasing awareness of social services in the community as well as households' orientation towards the future.

Key words: *Program evaluation, Matching estimators, Extreme poverty, Chile.*

Resumen

En este estudio se evalúa el efecto de un programa de lucha contra la pobreza, Chile Solidario, durante sus primeros dos años de funcionamiento. Encontramos que el programa tiende a aumentar significativamente su asimilación para los programas de asistencia en efectivo y los programas de vivienda sociales y empleo, así como a mejorar los resultados de la educación y la salud de los hogares participantes. No hay evidencia de que la participación en programas de empleo se traduzca en mejoras en el empleo o los ingresos en el corto plazo.

Finalmente, la evidencia sugiere que el apoyo psicosocial ha tenido un rol fundamental en generar este cambio, tanto por medio de aumentar el conocimiento acerca de los servicios sociales en la comunidad como a través de la orientación de los hogares hacia el futuro.

Palabras clave: *Evaluación de programas, Estimadores de "matching", Pobreza extrema, Chile.*

JEL Classification: *c14, c51, I31, I38, O15.*

> *"We cannot be content, when we know that 6% of the population lives in conditions of indigence. (…) We are going to go where they live. We want not only to provide subsidies, we want their children to study, to have health assistance, and we want to include them into social networks and into the society in its entirety. We are going to build a bridge between them and their rights, so that they can exercise them to defeat their conditions of extreme poverty".*
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> Ricardo Lagos, President of the Republic of Chile. Presidential address, May 2002.

1. INTRODUCTION

The perception that poverty is associated with social exclusion is subject of public debate in many countries. There is a general agreement that household in extreme poverty are deprived along multiple dimensions, which reinforce each other to jointly lock them into indigence. Yet there are very few examples of policy interventions that take this multi-dimensionality seriously, so as to help the extreme poor to escape deprivation in a sustained way by simultaneously addressing different structural constraints.

An important exception approach might come from a new program aimed at tackling extreme poverty in Chile. The country has experienced years of sustained income growth during the 1990s, with an average per capita GDP growth of 4.5 per cent between 1990 and 2002. As a result, in the context of a stable income distribution (Ferreira and Litchfield, 1999),[1] economic growth has translated into a reduction in the incidence of overall poverty in the country (from 33 per cent to around 15 per cent), but without much changes in extreme poverty (stable at around 5.6 per cent) over the same period (World Bank, 2001). The benefits from growth did not trickle down to the poorest segments of the population despite a large array of social services, targeted to the poor.[2]

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[1]   Between 1987 and 1994, the shape of the income distribution has only slightly changed, with a small compression at the bottom and a small increase in the upper tail (Ferreira and Litchfield, 1999; Litchfield, 2001).

[2]   As of 1998, the first five ventiles of household income were receiving 54% of all cash assistance programs, up from 40% at the beginning of the 1990s (MIDEPLAN, 2002).

The poorest segments are often unaware of their eligibility to certain programs or do not know how to activate the process of accessing them. As a response, the government of Chile has proactively introduced in 2002 a program, *Chile Solidario*, which aims reaching households in 'indigence' in the country with an approach that goes beyond improving the targeting performance of public programs or simply providing recipients with cash assistance.

The first component of the program reaches households in extreme poverty (through a proxy means testing) and provides them with a two year period of psycho-social support through a local social worker. During this period, the social worker works with the household to assess their needs and to help them devise a strategy to exit extreme poverty in the short run, by providing direct cash transfers at a decreasing rate over time and by connecting households to various social programs. After the two year intensive period, households are ensured a direct cash transfer and preferential access to assistance programs for an additional period of three years. At the same time, the program aims at helping households to progressively sustain their exit from extreme poverty in the long run by improving their human capital assets, their housing and their income generation capacity.

The second component works on the supply side, by ensuring coordination among different programs. The rational comes from the recognition that an approach with isolated and sectoral programs does not lend itself to face the multiple and interrelated material as well as psycho-emotional deprivation of the extreme poor. The objective in the long term is to move away from an approach based on single programs towards a "system" of social protection, where the supply side provides bundles of programs that are tailored to meet the specific needs of households that are hard to reach.

The program scaled up and expanded a pilot program called *Puente*, previously operating in 4 provinces. The program was phased in four waves, from 2002 to 2005 to cover a target population of 225,000 households, the estimated number of households in indigence in the country. The program has subsequently evolved to become a building block of the system of social protection in the country. Even though the primary objective is to alleviate extreme poverty, over time it added a complementary social protection focus, with the objective of protecting households from falling back into poverty when faced by uninsured risk.

This document summarizes the results of the first quantitative short term evaluation of the program (Galasso, 2006). The data used in this paper for the purpose of the evaluation uses a subset of participating households and matched non-participants interviewed in the nationwide socio-economic survey (CASEN) in 2003 and followed up longitudinally in 2004. The results of the evaluation cover only the short term impact for the first cohorts of beneficiaries up to 2004, the majority of whom are still part of the two-year phase of psycho-social support by the social worker.

The scope for identification comes from the design features of the program. The program assignment is based on a proxy-means score (CAS), related to unsatisfied basic needs. In the empirical analysis, we will exploit the exogenous geographic variation in the distribution of the CAS score, as well as in eligibility to estimate the effect of the program on a wide array of outcomes.

The results from the first two years of intervention of the program show gains along different dimensions of education (preschool enrolment, enrollment into

school for 6-15, adult literacy) and milder effects on health outcomes (enrolment in the public health system, as well as preventive health visits for children under 6 and women). The results show also a strong take-up of employment programs, though this participation is not (yet) translated into employment effects. There are no significant effects on household income per capita, though participating households are significantly more likely to be receiving social assistance transfers. There is also evidence that on average Chile Solidario participants have increased their awareness of social services in the community and are more likely to be more optimistic about their future socio-economic situation.

The structure of the paper is as follows. We start in section 2 with a detailed description of the *Chile Solidario* program and its assignment mechanism. Section 3 presents the methodology we apply, and discuss the identification assumptions. Section 4 describes the data and section 5 presents the results. Concluding comments will be provided in section 6.

2. Background on the Program

The objective of alleviating extreme poverty is achieved through a two-pronged strategy, working on both the demand and the supply side of public services.

The first component of Chile Solidario provides participating households with a two year period of psycho-social support implemented through the outreach activities of a local social worker. The social worker has a dual role of helping households to create or restore their basic capabilities and functions and helping them to create links and get 'connected' to a local network of social services. He/she conveys information and represents a catalyst for households to elicit unexpressed demand for those public programs that meet their needs. The psycho-social support has been recognized by law as an integral component of the intervention and represents the key distinctive feature of this approach.

The multidimensional aspect of deprivation is operationalized in terms of a set of "minimum conditions", which aim at measuring a minimally acceptable level of well-being along different dimensions or pillars (identification/legal documentation, family dynamics, education, health, housing, employment, income). During this intensive phase, each family works with the worker to get familiarized with the minimum conditions, and identifies the key priority areas to work on during the intervention. The families then commit to put their effort in meeting those unmet priority conditions, by signing 'partial contracts' with the social worker.

The program includes also a small cash transfer ('*bono de protección'*), which is transferred to participating households after having signed their partial contracts. The '*bono*''s value is tapered over time, with the idea that households should progressively improve their standards of living as a result of the program.[3] The short-term income support in the case of *Chile Solidario* besides the

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[3]   The direct transfer is set at Ch\$ 10,500 per month for the first six months of the Puente program; decreases to Ch\$ 8,000 in the second six months of the program. In the second year it decreases to Ch\$ 5,500 and finally to Ch\$ 3,500 for the last six months, an amount equivalent to the family allowance (SUF), one of the main cash assistance transfers.

'bono' takes the form of accessing existing cash assistance program to which participating households were already eligible to. The transfer is not conditional on any behavioral requirement on school enrolment or health visits, though it is terminated if households interrupt their participation to the program.[4] The conditionality relates to the partial contracts that households signed during the intensive phase: households are expected to show efforts in working on those conditions that are recognized by the family itself as structural bottlenecks and to which they have committed to. After the two years of psycho-social support, households receive an unconditional exit bonus (*'bono de egreso'*) for additional three years, of an amount comparable to the last transfer of the *'bono de proteccion'*.

The underlying rational for *Puente* and *Chile Solidario* was the realization that households in indigence were unable to formulate and activate their demand for social services, due to constraints to take-up that have been well documented in the US labor literature (Currie, 2004), such as information, feeling of helplessness and discrimination. The social worker conveys information and helps the households activate their demand for those public programs that meet their needs.

At the same time the social worker assists the households in realizing what their needs and priorities are helps them devise a strategy (their 'life-time project'), by developing a set of endowments (assets, skills, abilities, information, autonomy and self-efficacy) that allow them to autonomously sustain their exit from extreme poverty in the long-run.

The second component of the intervention focuses on strengthening the supply side of public services. Public programs and services were previously available for their respective eligible population upon demand. *Chile Solidario* works directly with the municipalities, which are the local providers of public services, by making sure that the supply side is locally organized to attend the needs of this specific target population and 'bridge' the demand gap. This process is facilitated by the fact that the activities of the social workers are institutionally grounded in each municipality (UIF, *Unidad de Intervención Familiar*). Their work and performance is supervised and coordinated by a municipal employee (head of the UIF). Until 2004, the social workers had to work with the existing supply of social services within the municipalities, and the supply component of the program worked mainly through facilitating the coordination and networking of the different actors. The supply side response in terms of volume, size and targeting performance of new programs was activated after 2004, which is outside the scope of the current analysis.

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[4]   The drop-out rate is estimated to be very low, around 3 per cent of all the households invited to participate.

3. Methodology

3.1. The assignment mechanism

Impact is defined as the change in the outcome of interest that can be causally attributed to the program. It is important to bear in mind that the program CHS is targeted to households in extreme poverty. As a consequence, differences in outcomes between participants and non-participants could be attributed either to differences in initial conditions (such as their educational attainment, or ethnicity) or to non-observable characteristics (such as motivation or ability).

As in other examples of social programs and conditional cash transfers programs in developing countries, the program is assigned on the basis of a proxy-means score calculated on the basis of a card (*CAS ficha*).[5] All households whose scores are below a predetermined threshold are considered eligible to participate. In order to ensure a wide geographical coverage of the program, a decision was made to allow thresholds to vary across communes and regions, with the aim of reflecting differences in the poverty rates across different geographic areas. Households within municipalities are sequentially invited to participate to the program, by starting from the *bottom up* of their CAS distribution.[6]

These design features are such that two potentially eligible and observationally equivalent households can have been differentially exposed to the program.

The results reported in this document use the method *of matching* to estimate the counterfactual of no-program outcomes and estimate the impact of the program. This method estimates the counterfactual of no-program outcomes by matching on the observable characteristics used in practice during the assignment mechanism, i.e. the CAS score. Households are assigned according to the CAS. Households are assigned to participate in strict ordering depending on their score. Moreover, given that households are invited to participate, they are assumed not to self-select into the program based on the expected gains. In this setting, participation ('treatment' in the evaluation literature), is assumed to be independent of the outcomes of interest, conditional on the score.

We follow Abadie and Imbens (2006) to estimate the effect of the program on participants, by matching on the CAS score (more methodological details are

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[5]   The score is a summary index of unsatisfied basic needs that is used as pre-requisite for participation to *Chile Solidario* and a wide-array of other social programs in Chile, from income transfers (e.g. family allowance SUF, old age public pension PASIS) as well as subsidies to health utilization(FONASA), water subsidies SAP, access to public housing and childcare centers.

[6]   Even though in principle households could refuse the invitation to participate, in practice, the proportion of households who refused to is too small to meaningfully model the selection process.

available in Galasso, 2006). We also estimate the effect by matching on the CAS score and adjusting the difference within the matches in their covariates.[7] We perform separate estimations for rural and urban areas: the incidence of poverty,[8] the infrastructure, the supply side of public services and the labor markets faced by households living in rural and urban areas are very different.

Note that this identification strategy compares participating and non-participating households with similar scores (and household characteristics). One potential concern is that it assumes that the effect of the treatment does not vary across regions and/or municipalities, which might be a strong assumption in the context of the program, which gives such an important role to municipalities. Different municipalities might face a different supply of social services. We address these concerns by presenting the results with an additional specification where we allow for community effects, in addition to household characteristics. This will control for any time-invariant differences in the initial conditions of the supply side, as well as for unobserved characteristics of the local labor market.[9]

An alternative identification strategy would rely on the exogenous variation in the thresholds for eligibility. The method of regression discontinuity design (van der Klaaw (2002) and Chay, McEwan, and Urquiola (2005)) allows to estimate the effect the program by comparing a large set of outcomes for households just above and below the cutoffs. However, given that municipalities started from the bottom-up of their CAS distribution, the bulk of the distribution of participants for the first cohorts is concentrated to the left of the graph, away from the cut-offs. For this reason, the application of this alternative method is deemed to be more relevant to subsequent cohorts, as it would allow making inferences applicable to a larger share of the target population (see Carneiro, Galasso and Ginja (2009)).

4. DATA

In order to document the evolution of impact of the program over time, the evaluation was implemented through a longitudinal survey (planned at

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[7] The bias-correction introduced by Abadie and Imbens (2006) removes the conditional bias that arises when matching is performed on more than two variables are used. In our framework, only one matching variable is used (i.e. the CAS score). We use their approach to estimate the conditional treatment effect on the treated.

[8] The incidence of rural poverty was found to be double the incidence of urban poverty in 1987, although the differences across urban and rural areas have converged over time, especially for the incidence of extreme poverty (Litchfield, 2001).

[9] The underlying assumption behind this specification is that the supply side is given at any given point in time. The assumption seems relevant in the first two years of operation of the program. Over time, to the extent that the supply side responds differentially depending on the local unsatisfied demand, this approach will need to be modified to ensure identification.

one year intervals between 2003 and 2007). The longitudinal survey identifies a sample of participants and comparable non-participants identified from the the nationally representative household survey –the *Caracterización Socioeconómica Nacional* –CASEN– in 2003. The survey is multi-topic, ranging from questions on demographics, employment, income, education, health status and utilization of services to access to public subsidies and transfers. MIDEPLAN, the ministry in charge of the survey as well as of the program, planned to add questions on program participation to the CASEN administered in 2003. The sample size has been augmented to over-sample *Chile Solidario* beneficiaries.

In Tables 1 we report weighted means for demographic, socio-economic characteristics, household income and intermediate indicators used in the analysis. The descriptive statistics (Table 1a) confirm that program has indeed been well targeted. Participants households come from larger households, where both the head and the spouse have lower educational attainments (about 2/3 have not completed primary education), have lower labor force attachment, and lower assets (durables). They are also more likely to come from rural areas, and from ethnic minorities. Participants are twice more likely than non-participants to have at least one member with disabilities.

In order to allow for the possibility of following up the impact of the program over time, while keeping low the survey cost, MIDEPLAN agreed to interviewed only a subset of participants together their 'matched' comparison one year apart (November 2004). Two subsequent rounds of the longitudinal survey (2006 and 2007) were collected to eventually form a four-year longitudinal panel.

The 2004 questionnaire has newly added questions on participation to various social programs. It has also new modules on intergenerational mobility (with questions on the education and background of the parents), subjective welfare, as well as a short module on perceptions (problem solving, perceived social support and expectations about the future). The descriptive statistics, by participation status, on the intergenerational and the perception questions are suggestive. These underlying differences in the socio-economic conditions of participants and non-participants are also reflected in their subjective measures of well-being, with more than 2/3 of the participants whom consider themselves to belong to the lower ladder of socio-economic well-being compared to 1/2 of the non-participants.

Finally, our identification strategy requires that we observe the actual CAS (proxy-means) score used to select households into the program. 2004 panel sample for the rest of the analysis. As shown in Figure 2, the distribution of CAS scores for participation is strictly to the left of that of non-participants. Participants are much more likely to be eligible (having their CAS below the relevant threshold). Next section will provide the results obtained by applying the empirical methods outlined in section 3.

TABLE 1A

DESCRIPTIVE STATISTICS, BY PARTICIPATION STATUS CASEN 2003

| | Non participants | | Participants | | | |
| | characteristics head household | | characteristics head household | | characteristics Beneficiaries | |
	mean	st.dev.	mean	st.dev.	mean	st.dev.
Rural area	0.130	0.337	0.307	0.461		
Hh'ld income p.c.*	128,927	304,879	33,330	30,789		
Hh'ld 'ingreso autónomo' p.c. (excl. public transfers)*	125,925	304,494	27,945	30,519		
Hh'ld 'ingreso autónomo' p.c. [adjusted]	171,010	439,221	38,339	51,926		
Durables: refrigerator	0.864	0.343	0.470	0.499		
Durables: calefont	0.626	0.484	0.088	0.283		
Household size	3.744	1.749	4.716	2.083		
Presence disabled member	0.135	0.397	0.251	0.531		
male	0.739	0.439	0.665	0.472	0.134	0.341
age	49.52	15.27	47.55	15.39	42.20	14.78
age<30	0.098	0.297	0.125	0.331	0.243	0.429
Education level:						
no education	0.033	0.180	0.124	0.330	0.106	0.308
Incomplete primary	0.203	0.403	0.515	0.500	0.511	0.500
complete primary	0.139	0.346	0.176	0.381	0.170	0.376
Incomplete secondary	0.181	0.385	0.119	0.324		
Complete secondary	0.234	0.423	0.054	0.226		
Higher education	0.205	0.403	0.008	0.088		
Marital status:						
married	0.579	0.494	0.445	0.497	0.411	0.492
union	0.128	0.334	0.247	0.431	0.272	0.445
single	0.101	0.301	0.108	0.311	0.147	0.355
Employment status:						
employed in 2000	0.714	0.452	0.619	0.486	0.295	0.456
housework in 2000	0.086	0.281	0.172	0.378	0.581	0.493
unemployed in 2000	0.038	0.192	0.070	0.256	0.037	0.190
currently employed	0.718	0.450	0.620	0.486	0.365	0.481
currently unemployed	0.041	0.199	0.079	0.269	0.054	0.226
currently inactive	0.241	0.428	0.302	0.459	0.580	0.494
Relationship to the head:						
head					0.400	0.490
spouse					0.483	0.500
child					0.080	0.272
other					0.037	0.189
No.obs	65,628		5,608		5,360	

Note: Own calculation from the CASEN 2003 survey. Variables are weighted using sampling weights. (*) Income figures are *not* adjusted, i.e. without the application of the CEPAL correction. Hh'ld 'ingreso autonomo' p.c. (adjusted) is used by MIDEPLAN to calculate poverty indexes.

TABLE 1B
DESCRIPTIVE STATISTICS, BY PARTICIPATION STATUS.
PANEL SAMPLE 2003-2004

Variables:	2003					2004			
	Beneficiaries households		non-particip. households		Diff. Std. Means	Beneficiaries households		non-particip. households	
	Mean	st.dev.	Mean	st.dev		Mean	st.dev.	mean	st.dev
Demographics									
household size	4.756	1.995	4.340	1.900	0.276	4.748	2.123	4.305	1.920
Share hh'ld members 0-5	0.123	0.146	0.091	0.136	0.232	0.112	0.139	0.084	0.131
Share hh'ld members 6-17	0.267	0.198	0.233	0.206	0.161	0.271	0.201	0.232	0.207
Share hh'ld members 18-64	0.543	0.205	0.577	0.238	–0.144	0.544	0.209	0.575	0.244
Share hh'ld members 65+	0.067	0.168	0.098	0.230	–0.133	0.073	0.177	0.109	0.244
presence disabled member	0.252	0.536	0.203	0.493	0.106	0.267	0.567	0.199	0.475
both parents present	0.694	0.461	0.713	0.453	–0.038	0.662	0.473	0.698	0.459
head is male	0.663	0.473	0.710	0.454	–0.098	0.633	0.482	0.696	0.460
head is married	0.448	0.497	0.559	0.497	–0.214	0.405	0.491	0.544	0.498
ethnic minority	0.105	0.306	0.076	0.266	0.101	0.133	0.340	0.082	0.275
age head<30	0.134	0.340	0.086	0.280	0.134	0.108	0.310	0.070	0.255
age head (30, 40)	0.279	0.449	0.243	0.429	0.056	0.266	0.442	0.224	0.417
age head (40, 50)	0.228	0.419	0.257	0.437	–0.060	0.238	0.426	0.268	0.443
age spouse <30	0.168	0.374	0.115	0.319	0.144	0.133	0.339	0.097	0.296
age spouse (30, 40)	0.221	0.415	0.217	0.412	0.009	0.218	0.413	0.201	0.401
age spouse (40, 50)	0.151	0.358	0.184	0.387	–0.079	0.153	0.360	0.190	0.392
rural area	0.211	0.408	0.152	0.359	0.177	0.230	0.421	0.149	0.356
Family background									
head - no education	0.125	0.331	0.056	0.231	0.253	0.127	0.333	0.053	0.223
head - incomplete primary	0.522	0.500	0.334	0.472	0.376	0.528	0.499	0.344	0.475
Spouse - no education	0.049	0.216	0.032	0.176	0.097	0.048	0.213	0.029	0.167
Spouse - incomplete primary	0.334	0.472	0.215	0.411	0.245	0.348	0.476	0.206	0.405
durables: refrigerator	0.493	0.500	0.778	0.416	–0.584	0.475	0.499	0.788	0.409
durables: calefont	0.080	0.271	0.374	0.484	–0.714	0.066	0.248	0.364	0.481
CAS score	466.32	27.61	540.31	48.33	–1.396				
=1 if CAS score is missing	0.128	0.335	0.450	0.497	–0.689				
Eligibility (CAS<CAS cutoff)	0.953	0.211	0.114	0.352	1.620				
Housing									
No. rooms	3.09	1.36	3.54	1.14	–0.345	3.07	1.21	3.49	1.10
Water: public network	0.810	0.392	0.910	0.286	–0.302	0.838	0.368	0.921	0.269
Sewage: public network	0.500	0.500	0.826	0.379	–0.665	0.490	0.500	0.832	0.374
Walls: concrete, breaks	0.164	0.370	0.441	0.497	–0.626	0.199	0.399	0.455	0.498
Ownership: own house	0.439	0.496	0.658	0.474	–0.386	0.461	0.499	0.662	0.473
Ownership: rented house	0.081	0.273	0.096	0.295	–0.109	0.077	0.266	0.092	0.289
Roof conditions: interior ceiling	0.544	0.498	0.837	0.369	–0.617	0.572	0.495	0.818	0.386
OUTCOMES:									
Household Income (*)									
Hh'ld income p.c.	31,175	23,596	51,843	41,282		33,155	25,060	55,913	52,358
Hh'ld labor income p.c.	21,337	21,411	39,458	40,078		23,144	24,132	41,945	48,632
Hh'ld non labor income p.c.	1,814	8,692	3,201	11,763		1,252	5,030	3,484	18,717
Hh'ld public transfers p.c.	8,023	10,559	9,185	17,445		8,759	11,752	10,483	22,987
Hh'ld 'ingreso autónomo' p.c. (excl. public transfers)	25,747	23,433	49,803	41,967		27,111	25,071	53,635	52,981
Intermediate indicators									
if disabled: enrolled in Nat. Registry	0.273	0.446	0.296	0.457		0.299	0.458	0.240	0.427
if disabled: children in education sys.	0.797	0.404	0.722	0.449		0.717	0.451	0.748	0.435

	2003				Diff. Std. Means	2004			
	Beneficiaries households		non-particip. households			Beneficiaries households		non-particip. households	
Variables:	Mean	st.dev.	Mean	st.dev		Mean	st.dev.	mean	st.dev
OUTCOMES (cont.)									
Health (unconditional):									
inscribed in SAPS (public system)	0.983	0.129	0.914	0.280		0.987	0.113	0.933	0.250
pregnant women w/regular check-up	0.044	0.204	0.036	0.185		0.045	0.208	0.035	0.184
all children<6 w/regular check-ups	0.211	0.408	0.163	0.370		0.168	0.374	0.152	0.359
all women>35 w/regular pap smear	0.385	0.487	0.384	0.486		0.424	0.494	0.411	0.492
all elderly w/regular check-up	0.077	0.267	0.100	0.299		0.082	0.275	0.117	0.321
Education (unconditional):									
all children 4-5 attending pre-school	0.169	0.374	0.110	0.313		0.153	0.360	0.109	0.311
All children<15 enrolled in school	0.674	0.469	0.582	0.493		0.652	0.476	0.575	0.494
children in school receiving assistance	0.559	0.497	0.481	0.500		0.530	0.499	0.471	0.499
all children 12-18 can read/write	0.166	0.372	0.158	0.365		0.165	0.371	0.176	0.381
all adults can read/write	0.704	0.457	0.855	0.352		0.678	0.467	0.853	0.354
adults enrolled in adult literacy pgm/ nivelación competencia	0.114	0.318	0.064	0.244		0.067	0.250	0.041	0.198
Employment:									
at least one member working	0.835	0.371	0.874	0.332		0.831	0.374	0.886	0.318
Children 8-15 not in school&working	0.0008	0.031	0.0001	0.013		0.0001	0.000	0.0008	0.029
at least one member with stable job+						0.751	0.433	0.867	0.339
at least one member enrolled in micro-emprendimiento pgm+						0.306	0.461	0.027	0.161
at least one member enrolled in emplo-yment programs+						0.096	0.295	0.040	0.195
at least one member enrolled in the local employment office+						0.459	0.498	0.231	0.422
at least one member enrolled in a training program+						0.182	0.386	0.166	0.372
Income:									
hh'ld receiving SUF	0.606	0.489	0.187	0.390		0.639	0.480	0.189	0.391
hh'ld receiving asignación familiar	0.116	0.320	0.291	0.454		0.117	0.322	0.285	0.452
hh'ld receving PASIS	0.115	0.319	0.061	0.238		0.124	0.330	0.071	0.257
Housing:									
hh'ld receving SAP	0.131	0.337	0.199	0.400		0.110	0.313	0.176	0.381
received material to protect house from rain/cold+						0.248	0.432	0.045	0.207
received equipment for kitchen/ bedroom+						0.233	0.423	0.013	0.113
hh'ld applying for public housing	0.329	0.470	0.241	0.428		0.373	0.484	0.230	0.421
No. Obs.	3,495		9,509			3,495		9,509	

Note: Own calculation from the longitudinal sample CASEN 2003-Encuesta Panel 2004. Variables are weighted using sampling weights. The column "diff. std. means" reports the difference in means of the variables between the beneficiary and non-beneficiary households, after they have been normalized to have mean zero and unit variance.

(*) Income figures are not adjusted, i.e. without the application of the CEPAL correction.

(+) indicates that the variable available only in 2004.
The summary statistics for the intermediate indicators are calculated on the entire sample, irrespectively of whether the indicator applies to the population of interest (ex. Having children less than six, having at least one disabled member, etc.).

TABLE 1C

DESCRIPTIVE STATISTICS ON PERCEPTION QUESTIONS+, PANEL SAMPLE 2004

	Head of household				Spouse head			
	Beneficiaries		non-participants		Beneficiaries		non-participants	
	Mean	st.dev.	Mean	st.dev.	Mean	st.dev.	Mean	st.dev.
"Situación económica en su infancia mejor"	0.398	0.49	0.349	0.477	0.359	0.48	0.336	0.472
Subjective welfare scale (5 ladder): –"pertenece al grupo socioeconómico bajo"	0.704	0.456	0.479	0.499	0.655	0.475	0.400	0.489
–"pertenece al grupo socioeconómico medio-bajo"	0.230	0.421	0.343	0.474	0.273	0.445	0.397	0.489
"Hizo algún trabajo por la comunidad - 2 últimos años"	0.251	0.434	0.197	0.398	0.238	0.426	0.206	0.404
"Nadie lo ayudaría a solucionar su problema, si tuviera un problema importante" (social support)	0.165	0.371	0.162	0.369	0.153	0.360	0.156	0.362
"Situación económica en el futuro mejor que ahora" (economic situation in the future will be better)	0.599	0.49	0.527	0.499	0.628	0.483	0.562	0.496
Ha ido buscar por iniciatica propia ayuda a una institución" (looked for help out of own initiative)	0.428	0.495	0.216	0.412	0.448	0.497	0.212	0.408
Aware of public programs in the community	0.543	0.498	0.481	0.5	0.529	0.499	0.493	0.5
Satisfaction with life index: good or very good	0.718	0.45	0.783	0.412	0.736	0.441	0.814	0.389

Note: Own calculation from the longitudinal sample Encuesta Panel 2004. Variables are weighted using sampling weights.
The subjective welfare questions (first 3 lines) were administered only to the head and his/her spouse, only when present.

FIGURE 1

SUPPORT OF THE CAS DISTRIBUTION (PANEL SAMPLE), BY REGION
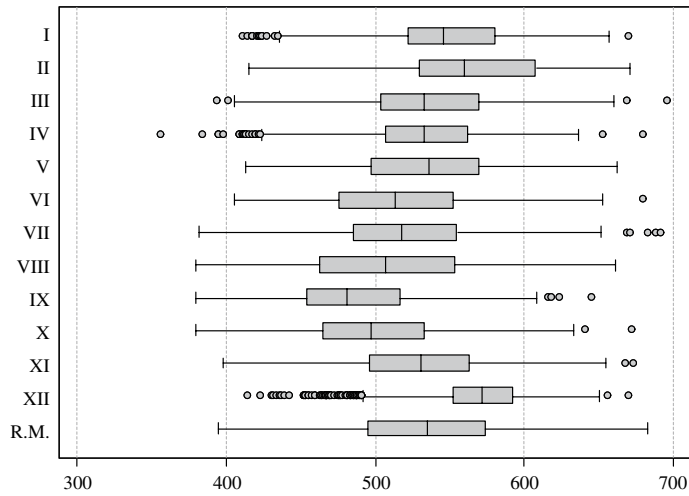
Note: Own calculations: sample of all households with information on their CAS score (panel 2003-2004).

FIGURE 2

SUPPORT OF THE CAS DISTRIBUTION

CAS scores and cutoff scores
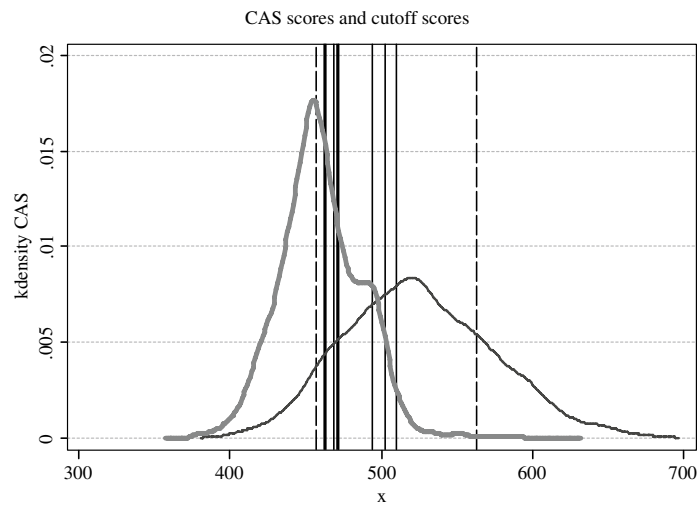
Note: Own calculations from the panel sample 2003-04. Sample of all households with information on their CAS score. Vertical lines represents the ranges of the municipal (dashed) and regional (solid) *cutoff scores*.

5. Results

5.1. Income and employment effects

Results on the income and employment dimension are reported in Table 2, using the estimated program effects on the CAS score, separately by urban and rural and by year. For each outcome of interest, outcomes are based on matching on the CAS score, unconditionally, conditionally on a large set of household characteristics[10], and finally conditioning on both household characteristics as well as on municipality fixed effects.

Income effects: The short impact of the program on total income and labor income is overall small and mainly non significant across alternative specifications. Participating households have a 'preferential access' to public transfers such as the family allowance (SUF, *Subsidio Unico Familiar*), the old age and disability pension (PASIS) and the potable water subsidy (SAP). The results in Table 2 suggest that households in *Chile Solidario* are more likely to have received the SUF, especially in urban areas, but *less* likely to be receiving the water subsidy, the old-age pension and another form of family allowance (in urban areas). The negative sign cannot be interpreted as a negative impact. These programs are assigned strictly on the basis of the within commune ranking of the CAS score among the *applicant* households. The fact that we observe negative effects might simply reflect the fact that participating households lagged behind in activating their demand even before the program (which is not controlled for by the observed covariates), and that *Chile Solidario* did not help bridge such differences in take-up for such programs.

Labor Supply effects: Chile Solidario households exhibit very strong take-up of labor market programs: they are more likely to be participating to programs aimed at supporting self-employed and more likely to be participating to public employment/labor re-insertion and training programs. Participation rates increase by around 30 percentage points in urban areas, and about 14 percentage points in rural areas for self-employment programs. The same pattern is observed for public employment program (increased by about 6% points in urban areas, and 4% points in rural areas), while the effect on take-up training programs is significant only in urban areas. There is also a very strong effect in increasing the likelihood of household members to be enrolled in the local employment office (OMIL), one of the minimum conditions previewed by the *Chile Solidario* program for unemployed members. Being enrolled in such offices not only should facilitate the process of looking for a job, but also represents a pre-condition for eligibility to various public training programs.

While the program activated a significant take-up on programs that might increase the employment prospects for the participating households in the medium term, the results do not translate into current gains in their labor supply. There

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[10]   Namely, family composition, age, sex marital status and education of the head of the household, presence/age of the spouse, indicators for ethnic minority and indicators of basic asset ownership.

TABLE 2
IMPACT OF THE PROGRAM ON INTERMEDIATE INDICATORS: EMPLOYMENT,
HOUSING AND INCOME

Panel a: urban	Matching on CAS					
	2003			2004		
	Uncon-ditional	Conditional (hh'ld)	Conditional (hh'ld+ Commune)	Uncon-ditional	Conditional (hh'ld)	Conditional (hh'ld+ Commune)
– dimension Identification						
if disabled: enrolled in Nat. Registry (ident6)	–0.042 (0.067)	–0.063 (0.067)	–0.003 (0.060)	–0.047 (0.062)	0.028 (0.061)	0.060 (0.053)
– dimension Employment:						
at least one member working	0.035 (0.033)	–0.017 (0.027)	–0.030 (0.030)	–0.017 (0.032)	–0.045 (0.029)	–0.053* (0.028)
at least one member with stable job[+] (trab1)				–0.030 (0.040)	–0.041 (0.038)	–0.046 (0.037)
Share of members employed	–0.003 (0.028)	–0.011 (0.028)	–0.033 (0.027)	0.005 (0.029)	0.002 (0.027)	–0.004 (0.027)
Share of members active	0.017 (0.026)	0.005 (0.026)	–0.029 (0.025)	0.005 (0.027)	0.006 (0.026)	–0.005 (0.026)
children<15 not in school and working (trab2)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	–	–	–
at least one member enrolled in the local empl office (trab3) [+]				0.282*** (0.040)	0.271*** (0.040)	0.186*** (0.038)
at least one member enrolled in programas de micro-emprend.[+]				0.322*** (0.028)	0.321*** (0.028)	0.294*** (0.027)
at least one member enrolled in a training program[+]				0.135*** (0.027)	0.133*** (0.027)	0.113*** (0.027)
at least one member enrolled in programas de empleo[+]				0.077*** (0.022)	0.064*** (0.022)	0.057** (0.022)
– dimension Housing						
received material to protect house from rain/cold[+]				0.176*** (0.030)	0.145*** (0.029)	0.127*** (0.029)
received equipamiento for kitchen/bedroom[+]				0.239*** (0.026)	0.234*** (0.026)	0.211*** (0.025)
hh'ld receiving 'subsidio agua potable' (SAP)	–0.057** (0.031)	–0.070** (0.031)	–0.080** (0.029)	–0.085** (0.031)	–0.067** (0.031)	–0.071*** (.029)
hh'ld "postulando a vivienda"	0.102*** (0.037)	0.077** (0.036)	0.063** (0.035)	0.168*** (0.035)	0.136*** (0.034)	0.110*** (0.033)
– dimension income						
hh'ld receiving 'sub-sidio único familiar' (SUF)	0.178*** (0.039)	0.100*** (0.033)	0.125*** (0.032)	0.154*** (0.038)	0.081** (0.033)	0.113*** (0.032)
hh'ld receving public pensions (PASIS)	–0.082*** (0.026)	–0.009 (0.020)	0.024 (0.020)	–0.079*** (0.027)	–0.009 (0.022)	0.024 (0.022)
Hh'ld income p.c.	–3,457*** (1,826)	–407 (1,617)	–4,187 (1,683)	–1,695*** (1,975)	–169 (1,794)	–2,454 (1,861)
Hh'ld labor income p.c.	–1,783 (551)	–2,226 (1,567)	–5,753*** (1,607)	1,732 (1,904)	–2,245 (1,666)	–4,839*** (1,720)
Hh'ld non labor income p.c.	–438 (670)	–623 (664)	–997 (667)	–226 (474)	–74 (478)	–386 (487)
Hh'ld public transfers p.c.	–1,236 (966)	2,442*** (613)	2,564*** (642)	–2,019* (1,109)	2,151*** (711)	2,771*** (754)

Table 2 (cont.)

	Matching on CAS					
Panel B: Rural	2003			2004		
	Uncon-ditional	Conditional (hh'ld)	Conditional (hh'ld+ Commune)	Uncon-ditional	Conditional (hh'ld)	Conditional (hh'ld+ Commune)
– dimension Identification						
if disabled: enrolled in Nat. Registry (ident6)	0.064 (0.052)	0.019 (0.051)	0.019 (0.051)	0.087* (0.052)	.0110** (0.051)	0.110** (0.043)
– dimension Employment:						
at least one member working	0.011 (0.029)	–0.017 (0.027)	–0.017 (0.027)	0.002 (0.028)	–0.029 (0.027)	–0.028 (0.026)
at least one member with stable job+ (trab1)				–0.012 (0.036)	0.006 (0.034)	0.004 (0.033)
Share of members employed	0.028 (0.023)	0.028 (0.022)	0.028 0.022	0.012 (0.024)	0.010 (0.023)	0.005 (0.022)
Share of members active	0.049** (0.022)	0.047** (0.021)	0.047 (0.021)	0.010 (0.023)	0.007 (0.022)	–0.001 (0.021)
children<15 not in school and working (trab2)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.002 (0.002)	0.001 (0.002)
at least one member enrolled in local empl. office (trab3)+				0.147*** (0.025)	0.134*** (0.025)	0.110*** (0.025)
enrolled in micro-emprendimiento pgm+				0.136*** (0.029)	0.139*** (0.029)	0.123*** (0.028)
enrolled in a training program+				0.023 (0.021)	0.032 (0.021)	0.018 (0.020)
enrolled in programa de empleo+				0.044*** (0.014)	0.040**** (0.014)	0.031** (0.014)
– dimension Housing						
received material to protect house from rain/cold+				0.118*** (0.028)	0.114*** (0.028)	0.098*** (0.027)
received equipment for kitchen/bedroom+				0.240*** (0.022)	0.236*** (0.022)	0.219*** (0.021)
hh'ld receiving water subsidy (SAP)	0.012 (0.017)	–0.003 (0.017)	0.001 (0.016)	0.019 (0.015)	0.003 (0.015)	0.012 (0.016)
hh'ld applying for public housing	0.045 (0.028)	0.006 (0.030)	0.013 (0.029)	–0.014 (0.030)	0.002 (0.027)	–0.021 (0.029)
– dimension income						
hh'ld receiving 'sub-sidio único familiar' (SUF)	0.111*** (0.034)	0.108*** (0.033	0.060** (0.028)	0.063** (0.027)	0.068** (0.028)	0.074*** (0.027)
hh'ld receiving public pensions (PASIS)	–0.057** (0.027)	–0.090** (0.027)	0.026 (0.022)	0.009 (0.022)	0.035 (0.021)	0.025 (0.022)
Hh'ld income p.c.	1,648 (1,455)	691 (1,452)	2,403* (1,311)	1,604 (1,340)	1,352 (1,365)	806 (1,373)
Hh'ld labor income p.c.	1810 (1,374)	2,428 (1294)	694 (1,304)	102 (1,243)	45 (1,337)	–564 (1,205)
Hh'ld non labor income p.c.	331 (367)	–377 (489)	73 (371)	192 (492)	35 (370)	293 (495)
Hh'ld public trans-fers p.c.	–494.882 (767)	–1360* (818)	1,636*** (507)	1,311** (548)	1,272** (527)	1,077* (602)

Note: Matching estimator: matching on the CAS score, with replacement. 3 nearest neighbors. Standard errors in parentheses based on the estimated variance of the sample average treatment effect (as in Abadie and Imbens (2006)).

* significant at 10%; ** significant at 5%, *** significant at 1%.

Household characteristics include: household size and composition (share of males and females 0-, 6-17, 18-64, older than 65 is the excluded category), whether both head and spouse are in the household, sex, age, marital status and education dummies of the head, age spouse, whether the household is an ethnic minority, ownership of durables (refrigerator, calefont).

is no sign of improvements of the share of members who are employed, nor on the share of members who have a stable employment (self-reported). The only positive and significant effects on labor force participation are observed in rural areas, with gains in the share of members who are active.

On the one hand, the inconclusive evidence leaves pending important questions on the ability of the program in helping households achieve a sustained exit from extreme poverty. Qualitative work[11] clearly suggests that improvements in employment (especially those related to having a *stable* source of income in the household) and housing are among the most important aspirations of participating families and those conditions that are perceived as structural factors preventing households to escape extreme poverty. In this light, they are also perceived as the most difficult minimal conditions to meet.

On the other hand, the short term horizon of the current analysis might not be sufficient to observe any impact along these dimensions. In principle, the employment and earnings trajectories of those households who have participated to self-employment/public works/training programs and/or those members who had adult literacy program might improve in the medium run. This short term effects are potentially consistent with the logic of the program to satisfy some basic needs in the short term, while at the same time building the assets to allow households to improve their welfare in a sustained way in the medium-long run. However, the evidence on the effectiveness of active labor market program in North American and European studies is mixed, with modest impact on increasing employment rates, though not much impact on earnings (Heckman, LaLonde and Smith (1999)). If any, the literature shows that some of the estimated gains are not sustained over time when longer follow-up data are available.

5.2. Housing effects

Having their own house ('*casa propia*') and improving its basic infrastructure also feature as a very important dimension among the aspirations of participating families (Asesorías para el Desarrollo (2005), Universidad de Chile (2004b, c), FOSIS (2004b).[12] Owning a house reinforces the identity of the household as an independent unit and represents a capital that can be bequeathed to their children, together with the investment in human capital. Besides the ownership status, basic sanitary and housing infrastructure are important correlates of household welfare (FOSIS (2004a)): having basic infrastructure has potential complementarities with health outcomes (access to safe water and sanitation) as well as family dynamics (in terms of a space that allows for better roles and interactions among different household members).

The results in Table 2 show significant effects on the enrollment in housing programs in urban areas. The estimated effect ranges from 7% in 2003

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[11] See footnote 6.

[12] Textual analysis of the 'life projects' of those households exiting the two-years period of psycho-social support (ficha final Puente) also confirms that the modal combination of words in the aspirations of the participating households relates to 'having their own house', as well 'improving their own house' (Silva's presentation at MIDEPLAN, October 2005).

to double to 14% in 2004. Compared to an average take-up of 24% of non-participants (stable over time), this amounts to an estimated sizable increase ranging between 30 to 60%. Enrolment in such public programs requires that the households have set some minimum amount of savings to be eligible. Possibly the cash received through public transfers (either though the 'bono' or through the *Subsidio Unico Familiar*) has allowed the participating households to save towards this objective.

Housing is one of the dimensions along which there might have been some rationing of the supply side. The results with municipality fixed effects, which control for time-invariant differences in the initial availability of housing, seem to rule out the rationing explanation. The results with community effects do not differ significantly from the other specifications within areas (rural/urban), (though it might still be possible that the rationing applies uniformly to all rural areas).

Table 2 also shows significant effects of the program on the receipt of basic housing equipment (of about 23 percentage points) as well as basic material to protect the house from rain/cold (ranging from 10-15 percentage points). These results are also robust to controlling for community effects. Overall, the results provide evidence that participating households are more likely to activate themselves to connect to the social protection network to bridge the initial gaps in their housing situation.

5.3. Impact on human capital outcomes

Table 3 reports all the results that relate to various dimensions of health and education. The choice of the outcomes of interest follows the list of intermediate indicators that are set by the program as minimum conditions to be achieved by participating households and that can be measured in the CASEN survey. All variables are computed as averages of individual outcomes at the household level (independently of whether the condition apply to specific subgroups of households or not), having in mind the objective to obtain an average effect of the program on the overall population of participating households. The only exception is given by outcomes that refer to households with disabled members, for whom the baseline characteristics and the expected behavioral response are expected to be substantially different.

Education effects: Overall, the results suggest significant and consistent increases in the likelihood of having all children aged 4-5 year olds enrolled in a pre-school. The effects for pre-school enrolment are in the range of 4-6 percentage points, consistently found in both urban and rural areas, as well as across different methods. Availability of preschools or financial constraints are not perceived to be an issue: cultural perceptions that the child is too young, or that he/she is better off taken care at home account for 90% of the self-reported reasons for non-enrolment (MIDEPLAN, analysis of CASEN 2003). On the supply side, there are different pre-school programs that have been adapted to reach the target population by providing free access as well as flexible hours to meet the needs of working mothers, even with temporary jobs or households where the head of the household is unemployed and the mother is looking for work.

TABLE 3
IMPACT OF THE PROGRAM ON INTERMEDIATE INDICATORS: HEALTH AND
EDUCATION

Panel A: Urban	2003			2004		
	Un-condit	w/hh'ld controls	w/hh'ld controls+commu-neFE	Un-condit	w/hh'ld controls	w/hh'ld controls+commu-neFE
	(1)	(2)	(3)	(1)	(2)	(3)
– dimension Education						
all children 4-5 attending pre-school (educ1)	0.062** (0.027)	0.027 (0.023)	0.026 (0.023)	0.071** (0.027)	0.042* (0.023)	0.035 (0.023)
children<15 enrolled in school (educ3)	0.096** (0.038)	0.023 (0.025)	0.019 (0.025)	0.089** (0.038)	0.000 (0.024)	–0.005 (0.024)
children in school receiving assistance (educ4)	0.090** (0.038)	0.040 (0.033)	0.063* (0.033)	0.033 (0.039)	–0.025 (0.033)	–0.006 (0.033)
all children 12-18 can read/write (educ5)	0.005 (0.027)	–0.009 (0.027)	–0.005 (0.028)	–0.010 (0.028)	–0.025 (0.027)	–0.014 (0.027)
adults enrolled in adult literacy program/ nivelación competencia	0.025 (0.024)	–0.001 (0.024)	–0.002 (0.024)	0.039** (0.019)	0.025 (0.019)	0.026 (0.018)
– dimension Health						
inscribed in SAPS (salud1)	0.051*** (0.017)	0.036** (0.017)	0.038** (0.016)	0.019 (0.012)	–0.001 (0.012)	0.010 (0.012)
pregnant women w/regular check-up (salud2)	0.022 (0.015)	0.019 (0.015)	0.013 (0.015)	–0.012 (0.017)	–0.035** (0.017)	–0.044** (0.017)
all children<6 w/regular check-ups (salud4)	0.059** (0.029)	–0.022 (0.027)	–0.025 (0.026)	0.040 (0.029)	–0.015 (0.027)	–0.029 (0.026)
all women>35 w/regular pap smear (salud5)	0.060 (0.037)	0.040 (0.031)	0.025 (0.031)	0.024 (0.038)	–0.029 (0.032)	–0.037 (0.033)
all elderly w/regular check-up (salud7)	–0.110*** (0.026)	–0.060** (0.021)	–0.051** 0.021	–0.038 (0.024)	–0.003 (0.021)	0.000 (0.021)
Sample size		5563			5563	

Panel B: Rural						
	(1)	(2)	(3)	(1)	(2)	(3)
– dimension Education						
all children 4-5 attending pre-school (educ1)	0.047** (0.021)	0.051** (0.019)	0.046** (0.018)	–0.004 (0.022)	–0.017 (0.019)	–0.013 (0.019)
children<15 enrolled in school (educ3)	0.046 0.034	–0.036 (0.023)	–0.040* (0.024)	0.054 0.034	–0.044** (0.022)	–0.052** (0.023)
children in school receiving assistance (educ4)	0.046 0.034	–0.011 (0.026)	–0.006 (0.026)	0.066* (0.034)	0.008 (0.029)	–0.005 (0.028)
all children 12-18 can read/write (educ5)	0.022 (0.023)	0.010 (0.022)	0.006 (0.022)	0.022 (0.025)	–0.006 (0.025)	–0.003 (0.024)
adults enrolled in adult literacy program/ nivelación competencia	0.053*** (0.017)	0.054*** (0.017)	0.050*** (0.017)	0.019 0.015	0.015 (0.015)	0.015 (0.015)
– dimension Health						
inscribed in SAPS (salud1)	0.033*** (0.012)	0.030** (0.012)	0.030** (0.012)	0.010 (0.012)	–0.005 (0.011)	–0.002 (0.010)
pregnant women w/regular check-up (salud2)	0.022* (0.012)	0.016 (0.012)	0.015 (0.011)	–0.005 (0.012)	–0.009 (0.011)	–0.009 (0.011)
all children<6 w/regular check-ups (salud4)	0.035 (0.027)	0.000 (0.024)	0.009 (0.023)	0.026 (0.024)	0.015 (0.023)	0.022 (0.022)
all women>35 w/regular pap smear (salud5)	0.041 (0.032)	0.009 (0.028)	0.015 (0.027)	0.067** (0.034)	0.016 (0.028)	0.026 (0.028)
all elderly w/regular check-up (salud7)	–0.029 (0.022)	–0.008 (0.020)	0.001 (0.020)	–0.053** (0.022)	–0.018 (0.019)	–0.010 (0.019)
Sample size		3270			3270	

Note: Panel Sample 2003-2004. Columns (1-3): Matching on the CAS score, with replacement, 3 nearest neighbors. See footnote on Table 2 for more details.
Columns (4-5): Reported coefficients (Huber-White standard errors are in parentheses) from a regression of the outcome variable on an indicator of participation and a cubic polynomial in the CAS score.

School enrolment of children from 6 to 15 has mildly improved (with estimates ranging between 7-9%), although the results are not robust across all matching specifications. Household in urban areas are also more likely to have taken-up complementary programs of school materials, meals, and dental care directed to subsidize direct costs of schooling for households with lower socio-economic conditions. There are no fees for public schools in Chile, so most of costs of enrolment are indirect (opportunity cost of the child's time). There are no significant differences in terms of literacy of children aged 12-18.

As part of its comprehensive strategy, the program also targets illiterate adults or adults that would like to complete their elementary middle school levels. On the benefit side, literacy or improvements in the educational attainment can increase the adults' self-esteem, and help process information about services/jobs and be instrumental to supporting the children in their educational learning. The costs of participation are not only measured in terms of opportunity cost of their leisure time after work, but also in terms of psychological costs. In this respect, the psycho-social support by the social worker is instrumental to discuss the potential benefits of such programs, and to encourage the potential participants to feel motivated and capable of attaining such an objective. The results show a statistically significant take-up of adult literacy and education completion programs of around 4% in urban areas and 5 percentage points in rural areas.

Health effects: The impact of the program on health outcomes is more muted than the one on educational outcomes. The only consistent result is that participating households are more likely to be enrolled in the public health system (SAPS) (2-3% in urban areas, 3% in rural areas). The impact on health visits for preventive care is found on some subgroups (for health visits for children below six years of age of the order of 4-6 percentage points, only in rural areas, and for women aged 35 or older for their pap smear of the order of 6-7%, mostly in 2004 for rural areas and in 2003 in urban areas). The results on elderly are not significant in urban areas and often negative in rural areas. We believe that the negative effects are more of a reflection of the differences in the composition of the elderly population in our sample and of the lack of sufficient covariates that are specific to this age group[13] rather than credible negative estimates of impact.

5.4. Evidence on perceptions and orientation towards the future

The 2004 questionnaire includes some basic perception questions administered to the head of the household and/or her spouse. Although some of the differences might be capturing underlying differences in personality traits and personal attitudes and preferences, we assume that the distribution of these unobserved characteristics is uniformly distributed across households with similar socio-economic characteristics and is unrelated to program participation under our identification assumptions.

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[13] Namely we control for the share of male and female elderly in the households but fail to account for their initial differences in health status.

TABLE 4
IMPACT OF THE PROGRAM ON PERCEPTIONS (2004)

	Uncon-ditional	+ hh'ld controls	+ hh'ld controls, commune FE
	(1)	(2)	(3)
Panel A: Urban			
"Situación económica en su infancia mejor"	–0.019	–0.008	–0.067
	(0.043)	(0.043)	(0.042)
Subjective welfare scale (5 ladder): - "pertenece al grupo socioeconómico bajo"	–0.008	0.016	0.068*
	(0.040)	(0.039)	(0.038)
"Hizo algún trabajo por la comunidad - 2 últimos años"	0.056***	0.047	0.060**
	(0.029)	(0.030)	(0.030)
"Nadie lo ayudaría a solucionar su problema, si tuviera un problema importante"	–0.064**	–0.034	–0.029
	(0.031)	(0.031)	(0.030)
"Situación económica en el futuro mejor que ahora"	0.176***	0.114***	0.097**
	0.040	(0.040)	(0.039)
"Ha ido buscar por iniciativa propia ayuda a una institución"	0.099**	0.070*	0.041
	(0.037)	(0.037)	(0.036)
Aware of social services in the community	0.189***	0.161***	0.129***
	(0.038)	(0.038)	(0.037)
Satisfaction with life index:	0.061*	0.015	0.017
good or very good	0.036	(0.036)	(0.035)
Panel B: Rural			
"Situación económica en su infancia mejor"	0.000	–0.017	–0.030
	0.034	(0.034)	(0.033)
Subjective welfare scale (5 ladder): - "pertenece al grupo socioeconómico bajo"	–0.012	0.000	0.010
	0.035	(0.034)	(0.033)
"Hizo algún trabajo por la comunidad - 2 últimos años"	–0.013	–0.005	–0.007
	0.030	(0.029)	(0.028)
"Nadie lo ayudaría a solucionar su problema, si tuviera un problema importante"	–0.027	–0.019	–0.011
	(0.027)	(0.027)	(0.026)
"Situación económica en el futuro mejor que ahora"	0.136***	0.077**	0.068**
	(0.035)	(0.035)	(0.034)
"Ha ido buscar por iniciativa propia ayuda a una institución"	0.050	0.028	0.024
	(0.032)	(0.031)	(0.031)
Aware of social services in the community	0.110***	0.100***	0.100***
	(0.034)	(0.034)	(0.032)
Satisfaction with life index:	0.043	0.056*	0.050*
good or very good	(0.029)	(0.029)	(0.028)

Note: Panel Sample 2003-2004. Columns (1-3): Matching on the CAS score, with replacement, 3 nearest neighbors. See footnote on Table 2 for more details on the set of covariates.

Results are presented in Table 4. Households in Chile Solidario are more likely to be aware of social services in the community (10 percentage points in rural areas and 13-16 percentage points in urban areas, corresponding to an increase of the order of 20-30% relative to the non-participants). This result is in line with the main objectives of bridging the demand gap. Households in urban areas are also reporting to be more likely to proactively look for help from local institutions (7 percentage points).

Finally, households seem to be more optimistic about their future socio-economic status (7-8 percentage points in rural areas and 10-11 percentage points in urban areas, corresponding to an increase of about 15-20% relative to non-participation). This improved outlook, even if it is measured with a basic perception question, is likely to be correlated with their orientation towards the future, and their willingness to invest in assets that improve their likelihood to eventually escape extreme poverty over time.

6. Conclusions

This paper provides estimates of the short run effects of Chile Solidario on a large array of household outcomes. The results focus on the first two cohorts of participants, where most of the beneficiaries are still under the psychosocial support of the social worker assigned to them. The main results show a significant and substantial effect on the take-up of cash assistance and social services, which was one of the main objectives of the program in its inception. The rationale for the intervention was that households in extreme poverty were previously observed to be disconnected from the public network of social services, and the program seemed to have bridged part of this gap. Second, we find that the program, in its two first years of operations, improves educational and some health outcomes of the participating households, though there are no effects on labor supply or income. Finally, we describe suggestive evidence that the psycho-social support was an important factor in enabling this change, by increasing awareness of social services in the community as well as households' orientation towards the future.

The comparison with other conditional transfers programs comes naturally to mind, though it should be exercised with extreme caution. The scope of the program (reaching 5% of the population), the institutional strength of local municipalities and the vast array of social services available in Chile makes it hard to extrapolate the results to other countries in the Latin American region. Nonetheless, the methodological approach that works jointly on the demand and supply side of social services is an innovation with respect to traditional conditional cash transfers and has already attracted attention from other countries in Central America (such as Guatemala, Honduras, and Colombia). Both types of approaches show gains in human capital indicators with increased health and education visits. Gertler *et al* (2005) provide preliminary evidence that some of the substantial cash transfer received by Mexican families in the context of Progresa (now Oportunidades) has been saved and used to finance in micro-enterprise activities and increased investments in farm assets and agricultural activities.

In the case of Chile Solidario, future analysis beyond the short term will provide important insights as of whether the income and employment gains are going to be achieved through a different strategy of intervention. In the medium term, the program aims at removing structural bottlenecks by strengthening the human capital of adults and expanding their employment opportunities and productive activities (via education completion/training/public employment or self-employment programs). This expansion of opportunities through this second component is deemed essential to help sustain the participants exit from

extreme poverty. The program impact on poverty may take time to materialize, and exit from extreme poverty, when achieved, may or may not be sustained over time. Furthermore, participating households that have been 'linked' to the supply side of social services ('red local de proteccion social') though the program are expected to access the 'red' independently in the future when faced by idiosyncratic shocks. The program over time has become a building block of the social protection system for the poor. It will be important to document its effectiveness to prevent households from falling back into poverty when faced by uninsured risk.

Finally, one of the crucial innovations of the program is to bring the psychological dimension at the center of a large scale poverty intervention. The paramount importance of the psycho-social support, well documented in beneficiaries' assessments and in the qualitative work, has been only touched upon in the current analysis by looking at a few isolated perception questions. There is scope for improving our understanding on such important dimensions by enriching the quality of instruments for measurement and study how gains in the psychological dimension correlate with changes in socio-economic conditions.
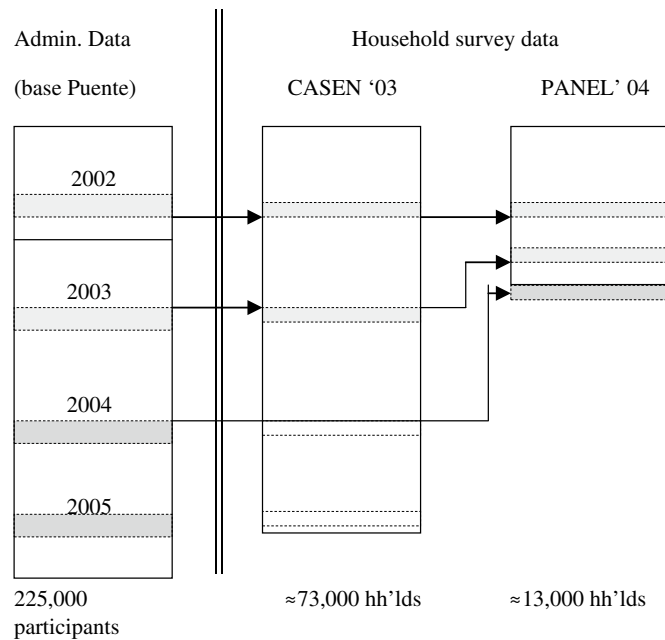
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APPENDIX

A1. Structure of the longitudinal panel 2003-2004

Admin. Data	CASEN '03	PANEL' 04
(base Puente)	Household survey data	

(figure: boxes showing 2002, 2003, 2004, 2005 for Admin. Data; arrows to CASEN '03 and PANEL' 04)

225,000 participants   ≈73,000 hh'lds   ≈13,000 hh'lds

A2. Construction of the panel sample 2003-2004

The objective of the panel survey was to follow up over time only a sample of the CS beneficiaries and their matched comparison group. The selected longitudinal sample was composed of about 3,400 participating households (comprising of 60% of the beneficiaries interviewed in the CASEN 2003, and of 186 new beneficiaries of the 2004 cohort identified by cross-checking the administrative list of beneficiaries and with the names/addresses of the original CASEN).

The matched comparison group was constructed by estimating a propensity score of participation into the program separately for four broad geographic areas.[14]

The list of covariates included household size and age composition, whether the household belongs to an ethnic minority or speaks a minority language, head characteristics (age dummies, education dummies, marital status dummies,

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[14]   The four geographic areas selected by Mideplan are: regions I-IV, regions V-VII and XIII, regions VIII-X, regions XI-XII.

labor force history in 2000), housing characteristics, asset indicators, household non-labor income per capita, a rural indicator and dummies for the regions, and interactions between housing indicators and rural.

The matching was done among households who reported having filled in a ficha CAS. The prediction of the propensity score and the balancing of the covariates performed better than in the case where the comparison group was drawn from all the households sampled in the CASEN).

The matching was done choosing the 3 nearest neighbors for each beneficiary within each geographic area. Matching was done with replacement, based on the log of the odds ratios[15] and imposing a common support in the propensity score among both beneficiaries and non-participants.

Comparison households were forced to be chosen within the same geo-graphic area and zone (rural/urban) for practical convenience. The final sample of original non-participants selected by MIDEPLAN for the panel includes 9,500 households.

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[15] Heckman and Todd (1995) show that in the case of sampling situations where program participants are oversampled (choice-based sampled data), matching can still be applied when matching is done on the odds ratio rather than on the propensity score. Matching on p/(1-p), the odds ratios, which are a monotonic transformation of the propensity score p, overcomes the problem of over-sampling.