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The Effect of Unconditional Cash Transfers on Adult Labour Supply: A Unitary Discrete Choice Model for the Case of Ecuador

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Abstract: We examine the effect of unconditional cash transfers by a unitary discrete labour supply model. We argue that there is no negative income effect of social transfers in the case of poor adults because leisure could not be assumed to be a normal good under such conditions. Using data from the national employment survey of Ecuador (ENEMDUR) we estimate the effect of the *Bono de Desarrollo Humano* (BDH). Results show that cash transfers, unconditional in labour, does not produce labour disincentives in the case of household heads, but may be paying for housework and childcare provided by partners and single adults. However, labour market and care work gender inequality must be addressed by complementary policies.

Keywords: basic income, cash transfers, labour supply, ecuador

1 Introduction

Income maintenance schemes can be classified by their basis (cash or work) and the method (conditional or unconditional) of provision. Jackson (1999) identifies four (pure) possible schemes. First, unemployment benefits provided in cash but conditioned on employment status. Second, basic income provided in cash to all citizens as an entitlement.¹ Third, guaranteed work provided to anyone on

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^{1 &}quot;A basic income is an income paid by a political community to all its members on an individual basis, without means test or work requirement" (Van Parijs, 2004, p. 8). Broader definitions also include benefits affected by household's situation or administered in the form of tax credit. In any case it is paid in cash, on a regular and individual basis, financed by a progressive tax system (2004).

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unemployment; in this case the State takes the role of employer of last resort for specially created jobs. Finally, unconditional basic work offering a minimum amount of work as a duty attached to citizenship (1999). All these alternative schemes have as objectives to guarantee a certain income level and to promote labour.²

Unconditional cash transfers are a mix mechanism as it is not universal but neither is it conditioned to employment status. In some cases they are seen as a potential first stage for the implementation of basic income in developing countries (see, e.g., LoVuolo, 2012; Standing, 2008; Suplicy, 2003; Van Parijs, 2004). This paper generates a theoretical framework and provides empirical evidence on the effect of unconditional cash transfers on adult labour supply. It is a key discussion regarding the economic effects of cash transfers, because non-negative labour effects are desired in order to foster positive economic returns.

Next to the positive effects of social transfers on social outcomes,³ they also foster economic performance, at different levels. At the micro level, social transfers alleviate credit constraints by enabling savings, investments and access to credit. They contribute to consumption and assets security, by helping poor households and individuals to access economic opportunities. Finally, social transfers help to cover transaction costs and to protect assets and facilitating their accumulation, enhancing labour supply and fostering local economy effects (Alderman & Yemtsov, 2012; Barrientos, 2012; Mideros, Gassmann, & Mohnen, 2013; Tirivayi, Knowles, & Davis, 2013).

The empirical evidence regarding economic effects of social protection is inconclusive. In the case of labour effects while there is agreement on the reduction of child labour, 4 in the case of adults there still theoretically ambiguity, and then it remains an empirical question (Alzúa, Cruces, & Ripani, 2013). There are at least four channels to explain the effects of social transfers on labour supply. First, a pure income effect due to the increment on non-labour income may reduce labour supply, but the transfer may also help to cover transaction and opportunity costs increasing labour supply. Second,

² For a discussion on alternative schemes to promote labour see, for example, Jackson (1999), Van Parijs (2004), Colombino et al. (2010), Standing (2013), and Harvey (2013).

³ Recent literature reviews regarding the effects of social transfers on different social outcomes can be found in Barrientos and Scott (2008), Barrientos and Nino-Zarazua (2010), Arnold, Conway, and Greenslade (2011), UNICEF (2012), Alderman and Yemtsov (2012), and Mideros et al. (2013).

⁴ It is broadly accepted that social transfers enhance child school attendance and reduce child labour (e.g. Barrientos & Nino-Zarazua, 2010; Bourguignon, Ferreira, & Leite, 2003; Edmonds & Schady, 2009; Mideros et al., 2013). However, supply side education policies are needed to guarantee these effects.

conditionalities may enforce behavioural responses. If children have to go to school it may free up time used for childcare. Third, if child labour is reduced, adults may increase their labour supply in order to compensate for the reduction of income. Finally, spill-over effects may affect non-beneficiary households and the local economy (2013).

Posel et al. (2006) found that a person, between 15 and 50 years old, living in a household with a non-contributory pension recipient has a 3.2 percentage point higher probability of employment in South Africa. They relate this effect to the possibility to cover migration costs and increased support from grandmothers to childcare. In the case of Mexico, Skoufias and Di Maro (2008) exploiting the experimental deign of the cash transfer programme PROGRESA found no significant effect on adult labour force participation and leisure time, but substantial reduction in poverty.

Foguel and de Barros (2010) found positive effects of a conditional cash transfer programme on male labour participation in Brazil. Similar results were found by Barrientos and Villa (2013) using data from Colombia. They found marginal positive effects on the participation of males and single adults with children and on employment of women in formal jobs. In addition, evidence suggesting no disincentives to work has been also found in Argentina, Uruguay and Chile (Maurizio & Vázquez, 2014) and in Ethiopia, Bangladesh (Barrientos & Nino-Zarazua, 2010) and Cambodia (Mideros et al., 2013). Some negative effects have been found by Fernandez and Saldarriaga (2014) in the case of Peru. They found a reduction on working hours in the week following the pay date (shortterm effect). However, they did not find any significant long-term effect on labour participation.

Finally, Alzúa et al. (2013) comparing results from three different experimental evaluations done in Mexico, Nicaragua and Honduras found no statistically significant effect of social transfers on labour supply, but a positive labour supply effect and increase in wages in some specific cases. Using the same data Novella et al. (2012) did not find any significant labour effect in the case of Honduras, positive effect on working hours of males but negative for female labour participation in Mexico, and negative effect on working hours of males but no effect on labour participation in Nicaragua.

In this paper, we estimate a unitary discrete choice labour supply model for the case of the Ecuadorian Bono de Desarrollo Humano (BDH). It is an unconditional cash transfer programme introduced in 1998 by the Government of Ecuador. The BDH is not conditioned on labour. However it has conditions on children health care and school attendance, but the accomplishment of those requirements is not supervised. Because of that reason the BDH is considered as a cash transfer with soft conditions, which can be related with a concept of basic income targeted to the poor (Cecchini & Martínez, 2011). Currently, the BDH is targeted using a proxy-means test index and provides a flat transfer (USD 35 per month in 2012). The case is relevant to analyse labour effects of social transfers in developing countries where this kind of instruments are largely being implemented as a poverty reduction strategy.

The rest of the paper is organized as follows: Section 2 discusses the theoretical framework, Section 3 presents the data and the empirical strategy. Section 4 presents the results and final remarks are presented in Section 5.

2 Theoretical framework

Receiving a social transfer increases household disposable income and subsequently affects the labour supply of its members. Following mainstream labour supply theory it can be argued that social transfers discourage labour due to the income effect. Additional non-labour income promotes more leisure (less work) and more consumption. However, this idea assumes that a person can work as much as she wants, and that leisure is a normal good. These are unlikely assumptions in the case of individuals in poor households.

Figure 1 presents the income effect of an increase in non-labour income.⁶ Panel A shows the general case where an increase in real income due to a noncontributory social transfer moves the budget constraint from AB to DE (transfer size is AD which is equivalent to BE) allowing an individual to increase both consumption and leisure, and then reducing labour time allocation.⁷ This produces an increase in the level of utility moving from U₀ (at point C) to U₁ (at point F).

However, it is likely to assume a minimum level of consumption (C_{min}) below which there is no normal trade-off between leisure and consumption, but instead a person is willing to give up leisure for some more consumption. It is hard to think on a person who values leisure if she cannot satisfy her basic needs. In this case time allocation will result in a corner solution at the

⁵ At January 2013, 1.2 million households received the BDH, while 594 thousand old-age and 118 thousand disables persons received a social pension. The transfer was increased to USD 50 per month in 2013 (it was USD 35 per month in 2012), given a total budget around USD 1 billion in 2013 (around 1.2% of GDP).

⁶ While an increase in real wage (labour income) may discourage work due to an income effect, it also encourages labour due to a substitution effect. However, in the case of a non-contributory social transfer there is only an income effect, if the transfer is received independently of labour.

⁷ Time is constrained at point A as it is limited, for example, to 24 h a day.

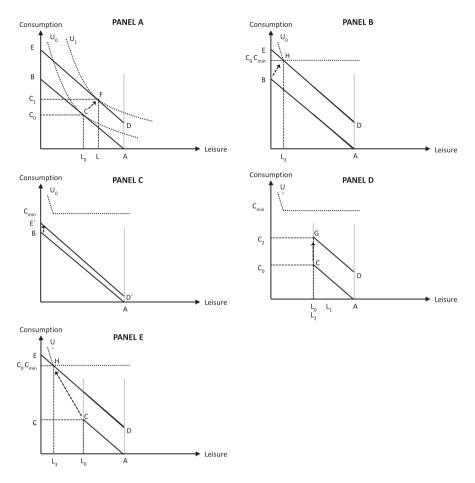


Figure 1: Income effect on labour supply. Source: Own elaboration.

maximum level of possible work-time (minimizing the gap to achieve C_{\min} , with horizontal indifference curves). It is the case of point B in panel B. Then, if a social transfer is enough to reach C_{\min} , it is likely that a person will assign time for leisure reducing labour by moving to point H in panel B. On the other hand, if the transfer is not enough to reach C_{\min} , the effect is higher consumption without any change on labour-leisure time assignation, moving to point E´ as in panel C.

In addition, access to and opportunities on the labour market may be constrained because of labour demand limitations but also due to personal and household conditions (i.e. opportunity and transaction costs). It means a

person may not be on paid-labour as much as she wants or needs. It is the case at panel D, where the budget constrain is restricted to the segment AC (it is not possible to allocate more time to labour than that for point C). In this case social transfer does not affect labour at all, if C_{min} stills not reachable. The result of introducing a social transfer is a movement from point C to point G.

Finally, if social transfers help individuals to overcome labour constrains by, for example, covering transaction and caring cost, financing labour search or acquiring productive assets, the final effect may be positive on labour supply.⁸ While the budget stills restricted without a social transfer (segment AC in panel E), it is not with the transfer (budget constrain becomes DE). Result is a movement from point C to point H in panel E.

Given this theoretical framework, social transfers may negatively affect labour supply in the case of individuals with income/consumption higher than C_{\min} , while producing positive or zero effects in the case of persons with income/ consumption below it. In this sense, our hypothesis is that social transfers produce no-negative labour effects in the case of poor adults.

2.1 The unitary discrete choice model

We rely on an unitary discrete choice model of household labour supply, which has been developed following van Soest (1995) and van Soest et al. (2002), and is widely used in the literature for similar analyses (e.g. Aaberge & Colombino, 2013; Beninger, Laisney, & Beblo, 2007; Bloemen, 2010; Blundell & Shephard, 2012; Breunig & Gong, 2010; Dagsvik, Jia, Kornstad, & Thoresen, 2014; Haan, 2004; Kabátek, van Soest, & Stancanelli, 2014; Kornstad & Thoresen, 2007; Löffler, Peichl, & Siegloch, 2013). It is quite intuitive that labour decisions are constrained on the choices of jobs and working hours, and then we prefer a discrete rather than a continuous labour supply model. Furthermore, as this study aims to analyse the effect of a social transfer delivered to households, we base our model on a household utility function (unitary model) rather than an individual utility function (collective model).9

⁸ Positive labour supply effects are likely to happen when social transfers lift credit and care constrains (Barrientos & Scott, 2008), and help to overcome transportation and other transaction costs (Posel et al., 2006).

⁹ While the unitary approach is most commonly used for policy analysis, some scholars argue in favour of a collective model in order to examine bargaining relations within households (e.g. Bloemen, 2009; Blundell, Chiappori, Magnac, & Meghir, 2007).

We define household utility as a function of a couple's time allocation and household income. We assume zero leisure $(t_i^{ls}=0)$ in the case of poor households (those with a level of consumption below C_{\min}). Further, given that total time endowment (T) is fixed (at a maximum of 24 h per day) we take paid-labour participation as the decision variable (t_i^l) for the household's head (i=h) and her partner (i=p). In this sense, housework (including care-work) time is the complement in the case of poor adults $(t_i^{hw} = T - t_i^l)$, and a mix of housework and leisure in the case of non-poor adults $(t_i^{hw} + t_i^{ls} = T - t_i^l)$. Paid-labour participation options are defined by the elements of the choice set (L). In addition, we decompose total household income (y_j) into labour income for the household head $(w_h t_h^l)$ and her partner $(w_p t_p^l)$ considering income from wages (w_i) , social transfers (St), and other non-labour income (Y_0) .

The budgeting problem is then described by eq. [1]. The utility function $U_j(.)$ is expected to increase with income; but to decrease with labour if household income is equal to or higher than C_{\min} , while it is independent of labour otherwise.

$$\max \ \mathbf{U}_{j}(.) = \begin{cases} \left(t_{h}^{l}, t_{p}^{l}, y_{j}\right), & y_{j} \geq C_{\min} \\ \left(y_{j} - C_{\min}\right), & y_{j} < C_{\min} \end{cases}$$
[1]

subject to
$$y_j = w_h t_h^l + w_p t_p^l + St + Y_0$$

3 Data and empirical strategy

We use data from the Urban and Rural National Survey of Employment, Unemployment and Underemployment (ENEMDUR) of the National Institute of Statistics and Censuses (INEC) of Ecuador.¹⁰ The ENEMDUR is a cross section survey conducted quarterly for urban households and twice a year (June and December) for urban and rural households, excluding the Galapagos Islands. The sample framework is representative at the province level in the case of the

¹⁰ Ecuador is a middle-income country with a GNI per-capita (Atlas method, current) of USD 5,190 in 2012 (World Bank, 2013). Total population accounts for 15.8 inhabitants in 2013 (INEC, 2013). In December 2012, active population was 6.8 million people. Unemployment was 4.1% and underemployment 51.4% (SIISE, 2013). Poverty headcount by income is 27.3% and inequality is represented by a Gini coefficient of 0.47, in December 2012 (SIISE, 2013). From a multi-dimensional perspective, main poverty dimensions are related with basic services (safe water and sewerage), social protection and inequalities (Mideros, 2012).

Coast and the Sierra regions, and at the regional level in the case of the Amazon. The ENEMDUR's first objective is to collect labour and income data, but it also provides relevant information about individuals and households. Available income information includes, but is not limited to, social transfers. In this paper we use the round of December 2012. The sample includes 73,686 individual observations within 19,840 households; using weights the sample represents the national population, accounting for 14.7 million inhabitants in 3.9 million households.

The BDH is a monthly cash transfer targeted at deprived households by consumption, using a proxy means test index. 11 Targeting was done in 2008-2009 and it has not been updated afterwards. The BDH is part of household disposable income, and thus it affects poverty and inequality measures. The BDH (USD 35 per month, in 2012) reduces the extreme poverty head count by 2.9 percentage points, the poverty head count by 2.7 percentage points and the Gini coefficient by nearly 2.0%. 12 At December 2012, extreme poverty head count was 11.2%, poverty head count 27.3%, and the Gini coefficient 0.477; if the BDH is discounted these figures increases to 14.1%, 30.0% and 0.486, respectively. Poverty and extreme poverty lines are USD 76.35 (2.55) and USD 43.03 (1.43) monthly (daily) per-capita, at December 2012.¹³

As aforementioned the BDH accomplish the basic income's principles of unconditionality on labour and of being paid in cash on a regular basis. While it is not universal neither individual, it was targeted based on past characteristics but up to the date of our data there were not entry and exit procedures. Because of these reasons our study of the BDH's effects on adult labour supply generates insights for the analysis of unconditional basic income.

There are some studies evaluating the effects of the BDH on different dimensions of wellbeing (Figure 2). However, the effect on labour supply and economic returns has not been analysed. An exception is the study of Gonzales-Rozada and Llerena (2011), who studied the duration of unemployment for those around the eligibility threshold (exploiting a regression discontinuity setting). They found that the BDH may be financing job search which is related with longer periods of unemployment but with higher future income.

¹¹ The BDH also includes pensions for old-age and disabled persons.

¹² Own calculations using ENEMDUR, December 2012.

¹³ Official poverty lines in Ecuador were estimated in 2006 (using the Life Conditions Survey, ECV-2006) and then updated according to the consumer's price index (CPI). The extreme poverty line approximates the cost of food needed to cover a defined norm of kilocalories per-person; the poverty line adds up non-food goods and services expenses.

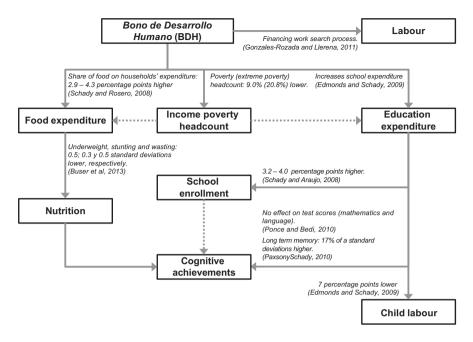


Figure 2: Effects of the *Bono de Desarrollo Humano* in Ecuador (Literature review). Source: Own elaboration based on Schady and Rosero (2008), Edmonds and Schady (2009), Schady and Araujo (2008), Ponce and Bedi (2010), Paxson and Schady (2010), Gonzalez-Rozada and Llerena (2011), and Buser et al. (2013).

The BDH has been proved to generate positive effects especially for individuals at the bottom of the income distribution (Edmonds & Schady, 2009; Oosterbeek, Ponce, & Schady, 2008; Paxson & Schady, 2010; Ponce, 2008). First, the BDH does increase school enrolment. In this sense it helps to reduce long-term poverty trough human capital accumulation. Second, the BDH does increase food expenditure (Schady & Rosero, 2008). However, León and Younger (2007) found rather small effects on child nutrition, and no difference with other kind of income effect.

Third, the BDH does reduce child labour (Edmonds & Schady, 2009). Finally, it may improve cognitive achievements. Ponce and Bedi (2010) found no statistically significant positive impact on test scores among children close to the program eligibility threshold.¹⁴ Nevertheless, Paxson and Schady (2010) found significant effects on developmental and health outcomes, especially for

¹⁴ The authors used data collected between November 2004 and February 2005 and relayed on a regression discontinuity model.

the poorest children in rural areas. 15 The study found positive effects on long term memory (17% of a standard deviation).¹⁶

3.1 Descriptive statistics

In order to estimate the effect of the BDH on adult labour supply we use three subsamples, restricting to households with a couple of non-unemployed adults (between 18 and 64 years old). ¹⁷ The first subsample (BDH recipients) includes only adults living in a BDH recipient household, accounting for 1,417 households (with a couple of adults). We use this subsample to analyze the effect of the transfer size among those receiving it. The second subsample (all adults) includes also individuals living in a non-recipient household, accounting for 2,853 couples (households). This subsample is used to estimate the effect of receiving the BDH. Finally, the third subsample includes single adults, accounting for 1,086 observations (households). In total we include 3,939 householdlevel observations, including 1,800 BDH recipient households.¹⁸

Table 1 presents summary statistics. Household size is 4.4 in the BDH recipients subsample, while it is 3.9 and 2.8 for the all adults and single adults subsamples. Average age is around 40 years old. BDH recipient adults have, on average, three years less of education. Women represent 50% of adults in both subsamples of couples, and 76% in the single adults subsample. Minority groups (indigenous, afroecuadorians and montubios) represent a higher percentage in the BDH recipients subsample, as it is also the case for individuals in rural areas. BDH recipient households have on average a higher number of

¹⁵ The authors used data from a base line survey collected between October 2003 and March 2004, and a follow up collected between September 2005 and January 2006.

¹⁶ In addition the study found and elevation-adjusted haemoglobin (29% of a standard deviation), for households in the bottom quartile. Furthermore, poorest children in the treatment group had a 12 percentage points higher probability to received parasite treatments. Moreover, mothers in the treatment group perceive their selves to be better-off.

¹⁷ Age range is defined according with Ecuadorian legislation. While legal working age starts at 15 years old, they are excluded in order to analyse pure effects on adult labour supply. The subsamples include employed, underemployed and inactive adults. We leave out unemployed households because their paid-labour choice is not clear. Moreover, they represent a rather low percentage of adults (Table 2). By excluding them we drop out 18, 32 and 22 observations from each subsample, respectively.

¹⁸ Excluded BDH recipient households have an old-age household head (53% of cases), more than two adults (30% of the cases), two adults who are not partners (9% of the cases) or inconsistent/incomplete data for the model (8% of the cases).

Table 1: Descriptive statistics (ENEMDUR – December 2012).

Variable				BDH recipients	ipients				All	All adults				Single	adults
	Obs.	Mean	SD	Min	Мах	Obs.	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Мах
Household size (number of persons)	2834	4.4	1.4	2.0	7.0	5706	3.9	1.3	2.0	7.0	1086	2.8	1.0	2.0	7.0
Age Schooling (Years of education)	2834	39.8	10.2	18.0	64.0	5706	39.4	10.4	18.0	64.0	1086	42.6	11.4	18.0	64.0
Sex (Female = $1/\text{Male} = 0$) Member (Head = $1/\text{Partner} = 0$)	2834	0.500	0.500	0.000	1.000	5706	0.500	0.500	0.000	1.000	1086	0.762	0.426	0.000	1.000
Married (Yes = $1/No = 0$)	2834	0.995	0.070	0.000	1.000	57.06	0.995		0.000	1.000	1086	0.136	0.343	0.000	1.000
Indigenous (Yes = $1/No = 0$)	2834	0.105	0.307	0.000	1.000	9025	0.060		0.000	1.000	1086	0.059	0.235	0.000	1.000
Afroecuadorian (Yes = $1/No = 0$)	2834	0.056	0.230	0.000	1.000	5706	0.046	0.209	0.000	1.000	1086	0.063	0.242	0.000	1.000
White or mestizo (Yes = $1/No = 0$)	2834	0.709	0.454	0.000	1.000	57.06	0.830		0.000	1.000	1086	0.841	0.366	0.000	1.000
Number of children (younger than 3 years old)	2834	0.208	0.442	0.000	2.000	9029	0.198	0.423	0.000	3.000	1086	0.116	0.331	0.000	3.000
Number of children (between 3 and 5 years old)	2834	0.213	0.427	0.000	2.000	9029	0.185	0.399	0.000	2.000	1086	0.107	0.329	0.000	2.000
Number of children (between 6 and 11 vears old)	2834	1.035	0.925	0.000	4.000	9029	0.803	0.859	0.000	4.000	1086	0.566	0.739	0.000	4.000
Number of children (between 12 and 17 years old)	2834	0.870	0.893	0.000	5.000	9029	0.697	0.829	0.000	5.000	1086	0.744	0.796	0.000	4.000
Number of young (between 18 and 29 years old)	2834	0.302	0.618	0.000	2.000	9029	0.357	0.668	0.000	2.000	1086	0.137	0.344	0.000	1.000
Number of adults (between 30 and 64 years old)	2834	1.698	0.618	0.000	2.000	9029	1.643	0.668	0.000	2.000	1086	0.863	0.344	0.000	1.000
Number of old-age (older than 64 years old)	2834	0.053	0.249	0.000	2.000	9025	0.034	0.197	0.000	2.000	1086	0.245	0.480	0.000	3.000

Table 1: (continued)

Variable				BDH rec	BDH recipients				All	All adults				Single	Single adults
	Obs.	Mean	SD	Min	Мах	Obs.	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Мах
Number of unsatisfied basic	2834	1.008	0.857	0.000	4.000	9029	0.499	0.759	0.000	4.000	1086	0.428	0.678	0.000	4.000
needs Number of televisions Number of telephones	2834	0.885	0.471	0.000	3.000	5706	1.275	0.802	0.000	8.000	1086	1.074	0.645	0.000	4.000
Area (Rural = $1/Urban = 0$)	2834	0.677	0.468	0.000	1.000	9029	0.364	0.481	0.000	1.000	1086	0.296	0.457	0.000	1.000
Labour income per-month	2834	174.72	284.23	0.00	6,359	5706	376.43	513.15	0.00	17,000	1086	286.05	331.70	0.00	4,194
per-capita	407	44.33	103.30	9	2,740	90 /6	111.71	101.47	9	0,200	1000	110.20	132.74	0.0	7,037
W = Labour income per-hour (if W > 0)	1793	1.69	1.56	90.0	26	4566	2.74	2.99	0.04	106	925	2.21	2.00	0.03	21
Household's social transfer (BDH) per-month	2834	37.19	8.85	35.00	105	9029	15.17	19.13	0.00	105	1086	11.82	18.52	0.00	70
Household's social transfer (BDH) per-month per-capita	2834	9.47	4.08	5.00	35	9029	3.86	5.34	0.00	35	1086	4.48	7.41	0.00	35
Household's other non-labour income per-month	2834	4.53	26.31	0.00	1,000	9025	26.51	139.41	0.00	2,550	1086	104.08	190.59	0.00	2,000
Household's other non-labour income per-month per-capita	2834	1.22	7.66	0.00	333	5706	9.51	57.32	0.00	1,275	1086	43.29	87.60	0.00	1,000
Poor ($Ves = 1/No = 0$) Extreme poor ($Ves = 1/No = 0$)	2834 2834	0.464	0.499	0.000	1.000	5706 5706	0.214	0.410	0.000	1.000	1086 1086	0.313	0.464	0.000	1.000

Source: Own calculation based on ENEMDUR - December 2012.

Note: Yes/No and Rural/Urban variables are dummy, while others are continuous. Income and transfers are expressed in US dollars (USD). Poverty and extreme poverty lines are USD 76.35 (2.55) and USD 43.03 (1.43) monthly (daily) per-capita, at December 2012. school-age children (between 6 and 17 years old) and old-age persons, while they have less assets and higher number of unsatisfied basic needs.¹⁹

Average labour income per month is USD 174.72, USD 376.43 and USD 286.05 for the BDH recipients, all adults and single adults subsamples, respectively, including the inactive with zero income. Labour income per hour is, on average, USD 1.69, USD 2.74 and USD 2.21 for each of the subsamples, 46.4% (13.6%) of adults in the BDH recipients subsample are poor (extreme poor), in comparison with 21.4% (6.3%) in the all adults subsample, and 31.3% (13.0%) in the single adults subsample.

Table 2: Paid-labour condition (ENEMDUR - December 2012).

Paid-labour condition	BD	H recij	oients		Alla	adults	5	ingle	adults
	Non-poor	Poor	All	Non-poor	Poor	All	Non-poor	Poor	All
All									
Inactive (% of persons)	30.1	42.6	35.9	11.0	38.1	16.8			
Paid-labour (% of persons)	69.9	57.4	64.1	89.0	61.9	83.2			
Unemployed (% of persons)	0.6	0.3	0.5	0.4	0.3	0.4			
Underemployed (% of persons)	35.5	47.1	40.9	31.7	52.4	36.2			
Employed (% of persons)	33.7	9.9	22.7	56.9	9.2	46.7			
Household head									
Inactive (% of persons)	1.4	2.2	1.8	1.9	2.3	2.0	12.0	23.1	15.6
Paid-labour (% of persons)	98.6	97.8	98.2	98.1	97.7	98.0	88.1	76.9	84.4
Unemployed (% of persons)	0.0	0.0	0.0	0.2	0.0	0.1	0.9	6.7	2.8
Underemployed (% of persons)	41.8	78.2	58.7	28.1	79.7	39.2	39.0	67.0	48.1
Employed (% of persons)	56.8	19.6	39.6	69.9	18.0	58.7	48.2	3.3	33.5
Partner									
Inactive (% of persons)	58.8	83.0	70.0	20.1	73.9	31.6			
Paid-labour (% of persons)	41.3	17.0	30.0	79.9	26.1	68.4			
Unemployed (% of persons)	1.3	0.7	1.0	0.6	0.7	0.6			
Underemployed (% of persons)	29.2	16.0	23.1	35.4	25.0	33.1			
Employed (% of persons)	10.7	0.3	5.9	44.0	0.4	34.7			

Source: Own calculation based on ENEMDUR - December 2012.

Table 2 shows that unemployment is low in all the subsamples, ranging between 0.4% and 2.8%. The rate is almost zero for household heads in the couple

¹⁹ Official index of unsatisfied basic needs is calculated by the National Institute of Statistics (INEC) and includes: (i) low quality of dwelling (floor and walls materials), (ii) inadequate access to basic services (water and sewerage), (iii) children, between 6 and 12 years old, do not attending school, (iv) economic dependence (schooling of the head of house lower than four years, and more than 3 dependent members per active person), and (v) more than 3 persons per bedroom. A household/person is defined as poor if she is deprived in only one indicator, as extreme poor if deprived in two or more, and as non-poor otherwise.

subsamples, while it is higher in the case of poor single adults. ²⁰ On the other hand, underemployment affects 40.9%, 36.2% and 48.1% of adults in the BDH recipients, all adults and single adults subsamples, respectively. Underemployment is defined by labour-income below the minimum wage or working less than 40 h per week. ²¹ In the case of BDH recipient adults, 60% of underemployed comply with both conditions. This percentage is 59% and 68% in the all adults and single adults subsamples, respectively. Underemployed is higher in the case of poor adults in the couple subsamples, as they may be more willing to take any available job.

Finally, inactivity is higher in the case of the BDH recipients subsample and for the poor, but it is concentrated among partners, while it is only 1.8% in the case of household heads. Paid-labour participation rate for all adults is 83%, including unemployed (0.4%), underemployed (36.2%) and employed (46.7%). In the BDH recipient subsample the paid-labour participation rate is 64%, while it is 84% for single adults. Paid-labour participation is higher for non-poor individuals (70%) compared to the poor (57%) among those receiving the BDH. For household heads the participation rate is 98% in both subsamples of couples, while it is substantially lower for partners in BDH recipient households (30%) than in the all adults subsample (68%). This difference is related with access to other income sources and with household's needs of care work. While 96% of inactive partners in the BDH recipient households do housework, this percentage is 64% in the case of partners in non-recipient households, but landlords and pensioners represent 26%. It means that in the case of BDH recipients households no participation on the labour market does not mean more leisure but more housework, while in the case of non-BDH recipient households it is also due to more leisure and thanks to other non-labour-income sources. In the case of inactive single adults 61% do housework and 20% are pensioners.

Housework depends on household composition. If there are more dependent persons, then more care work will be necessary. Table 3 presents the average dependency ratio by paid-labour condition for different subsamples. In the case of household heads there is a positive correlation between paid-labour participation and the number of dependents. It means that a person is expected to be more active in paid-activities if there are more members of the household to be taken care of, because of more resources are needed to satisfy their needs. However, it also means that the head of the household has the role of generating income. Nevertheless, the behaviour of partners is not clear. Looking at partners

²⁰ While unemployment is not a real issue in most of the cases it is rather high in the case of poor single adults.

²¹ According with Ecuadorian legislation, the minimum wage was USD 292 per-month in 2012.

Paid-labour participation	Head of house	Partner	Total
BDH recipients			
Inactive	0.31	0.49	0.49
Active	0.49	0.48	0.49
Total	0.49	0.49	0.49
All adults			
Inactive	0.20	0.47	0.46
Active	0.43	0.40	0.42
Total	0.43	0.43	0.43
Single adults			
Inactive	0.58		0.58
Active	0.61		0.61
Total	0.60		0.60

Table 3: Dependency ratio (ENEMDUR - December 2012).

Source: Own calculation based on ENEMDUR - December 2012.

Note: Dependency ratio is estimated as the relation between the total number of dependents (children under 18 years old and persons older than 64 years old) and the total number of household's members. The difference between head of house and partners is due to the inclusion of single adults.

at the all adults subsample, it appears that they reduce labour-participation if the number of dependents increases, which may be related with a higher role on work care.²²

Based on the theoretical framework presented in section two and these empirical data, we establish as hypotheses that the BDH has non-negative effects on labour participation of household heads, while it may finance care work done by the partners and single adults. It is important to mention that in the all adults subsample 96% of partners are women (97% in the BDH recipients subsample).

3.2 Empirical specification

For the empirical model we divide the utility function $(U_j = V_j + \varepsilon_j)$ of the household in an observable part (V_j) and unobserved characteristics (ε_j) . We assume the latest to be independent and identically distributed (i.i.d.) which leads us to follow

²² Kornstad and Thoresen (2007) estimated that mothers' labour supply could be reduced by 9% by cash transfers in Norway. In the same way Breunig and Gong (2010) found that women living in regions with lack of adequate childcare facilities work less than their peers in opposite conditions, in Australia.

distribution assumptions for a conditional logit type probability of household *j* to choose $t_j^{l,k}$ from a discrete and finite set of options: $L = \left\{t_j^{l,1}, \ldots, t_j^{l,k}, \ldots t_j^{l,L}\right\}$. Furthermore we assume the observed part of the utility function $(V_j = X_i^s \beta)$ to be linear in parameters, with vectors X_i^{s} of observable variables and β of parameters. In the same way as described by Haan (2004); Kornstad and Thoresen (2007), Löffer et al. (2013), and Kabátek et al. (2014), the logit choice probability can be then defined as:

$$Pr_j^k = \frac{\exp\left(X_j'^k\beta\right)}{\sum_{s=1}^L \exp\left(X_j'^s\beta\right)}, \ t_j^{l,k} \in L, s = \{1, \ldots, k, \ldots, L\}$$
 [2]

We specify 16 alternatives of working hours for the combinations between nonpaid labour, part-time, full-time and more than full-time labour for the household head and her partner, and four choices in the case of single adults (Table 4).²³ Choices with inactive partners are the most frequents, while fulltime and full-time-plus options are more common in the case of households heads. Based on empirical data we use the median number of working hours per week for each individual choice. It is zero hours for no paid-labour, 28 and 20 h for part-time paid-labour of household heads and partners respectively, 24 h for part-time paid-labour of single adults, 40 h for full-time paid-labour and 50 h for full-time-plus paid-labour.

We estimate paid-labour income per hour by a Heckman selection equation (Annex 1). Results are used to define household labour income for each possible choice. In this sense we use paid-labour income and working hours as the choice specific variables, and we interact them with other household specific characteristics. Income variables (including transfers) are presented in USD per week, and we use per capita values in order to take into account household size. Finally, we use population weights for all the estimations.

4 Results

4.1 Utility function coefficients

Table 5 presents results of a standard conditional logit estimation of the above derived labour supply model. As it is expected the average marginal utility of

²³ As aforementioned we exclude households with unemployed adults.

Table 4: Distribution of households across labour choices.

BDH rec	ipients					
					House	ehold head
		No paid- labour	Part-time paid-labour	Full-time paid-labour	Full-time-plus paid-labour	Total
Partner	No paid-labour	9	185	380	439	1,013
		(1,275)	(30,184)	(56,209)	(70,742)	(158,410)
	Part-time paid-	5	41	62	77	185
	labour	(730)	(8,352)	(9,458)	(10,805)	(29,345)
	Full-time paid-	7	6	70	37	120
	labour	(993)	(1,156)	(10,259)	(5,814)	(18,222)
	Full-time-plus	7	13	16	63	99
	paid-labour	(1,060)	(1,911)	(2,955)	(12,142)	(18,068)
	Total	28	245	528	616	1,417
		(4,058)	(41,603)	(78,881)	(99,503)	(224,045)

All adults

					House	ehold head
		No paid- labour	Part-time paid-labour	Full-time paid-labour	Full-time-plus paid-labour	Total
Partner	No paid-labour	21	189	402	470	1,082
		(5,283)	(31,437)	(60, 267)	(77,769)	(174,756)
	Part-time paid-	7	86	201	219	513
	labour	(970)	(17,591)	(40,662)	(39,381)	(98,604)
	Full-time paid-	17	44	532	230	823
	labour	(2,352)	(9,092)	(106,829)	(56,794)	(175,067)
	Full-time-plus	13	33	100	289	435
	paid-labour	(2,320)	(8,975)	(21,026)	(68,447)	(100,768)
	Total	58	352	1,235	1,208	2,853
		(10,925)	(67,095)	(228,784)	(242,391)	(549,195)

Single adults

			House	ehold head
No paid- labour	Part-time paid-labour	Full-time paid-labour	Full-time-plus paid-labour	Total
161 (33,831)	303 (56,049)	340 (66,331)	282 (54,923)	1,086 (211,134)

Source: Own calculation based on ENEMDUR - December 2012.

Note: Numbers of households expanded by population weights are presented between brackets.

Table 5: Labour supply effects (reduced utility function coefficients).

Variable	ВОН	BDH recipients		All adults		Single adults
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
y = Paid-labour income per week per capita	0.128 ***	(0.004)	0.097 ***	(0.001)	-0.030 ***	(0.001)
y^2	0.001 ***	(0.000)	0.000	(0.000)	0.000	(0.000)
) * \(\)	-0.002 ***	(0.000)	-0.001 ***	(0.000)	0.001 ***	(0.000)
y * U	-0.001 ***	(0.000)	0.001 ***	(0.000)		
Ij = Paid-labour working hours per week of the head	*** 990.0	(0.002)	0.062 ***	(0.001)	0.056 ***	(0.001)
 _j = Paid-labour working hours per week of the partner	-0.148 ***	(0.001)	-0.081 ***	(0.001)		
1,142	0.000	(0.000)	-0.001 ***	(0.000)	-0.001 ***	(0.000)
Lj^2	0.002 ***	(0.000)	-0.000 ***	(0.000)		
·: * []	0.001 ***	(0.000)	0.001 ***	(0.000)		
Number of observations	224,045		549,195	5	52,	52,784
rseudo R	0.270		0.130		0.0	0.025

Note: Heteroskedasticity consistent standard errors are between brackets. ***Significance at 1%, **significance at 5%, *significance at 10%. Source: Own calculation based on ENEMDUR - December 2012.

paid-labour income is positive, but decreasing on labour, except for the case of single adults where it is positive only in 23% of the observations. The marginal utility of paid-labour is positive for household heads and single adults (l_i) , but it decreases with working hours and paid-labour income. It is consistent with our hypothesis that leisure is not a normal good until a certain level of income/ consumption is achieved. On the other hand, marginal utility of paid-labour is negative in the case of partners (l_i) .

Table 6 extend the model by including interactions with different household characteristics. We consider the BDH as exogenous as it is a flat transfer without any condition on household composition or labour.²⁴ However, this assumption can be relaxed with no relevant effects on the main results. ²⁵ Consistent with our hypothesis the BDH has non-negative effects on the marginal utility of the paidlabour working hours in the case of household heads (l_i*BDH). The amount of the BDH is not significant in the BDH recipients subsample (BDH*social transfer(BDH)per weekper capita), while receiving the social transfer has positive but decreasing (on transfer size) labour effects in the all adults subsample. It can be seen in the negative coefficient of the square term (BDH*social transfer (BDH)per week per capita²). It means that negative effects may appear if the transfer is big enough. Using the coefficients of the all adults subsample, we estimate that negative effects occur at a transfer level of USD 4.53 per week per person (around USD 71 per month, for an average household size).

However, the BDH generates negative effects on the marginal utility of paidlabour working hours of partners $(l_j *BDH)$ and single adults $(l_i *BDH)$. Nevertheless, partners and single adults paid-labour participation is determinate by other household needs (i.e. care work) which can be paid by the BDH.²⁶ The marginal utility of paid-labour working hours decreases if the household dependency ratio increases in the case of partners (l_i *house hold dependency ratio). It

²⁴ In order to analysis potential endogeneity bias we estimate a linear probability model for paid-labour participation. The difference between the BDH's coefficients in the OLS and the 2SLS (with IV) is not statistically significant. In this sense even assuming endogeneity bias, it does not change the interpretation of our results. The IV procedure to estimate programme participation follows Ponce and Bedi (2010) by including a third-degree polynomial of the replicated proxy means test index, and the decision rule (It is 1 if the index is below the cutoff of 36.5, and 0 otherwise) in the first stage. All the models can be obtained from the authors upon request.

²⁵ Utility function coefficients using an IV approach, to estimate program participation, are lower in magnitude but signs and significance level remains the same. All the models can be obtained from the authors upon request.

²⁶ It is consistent with evidence found by Kornstad and Thoresen (2007), and Breuning and Gong (2010) on the relation between childcare and labour supply.

Table 6: Utility function coefficients.

Variable		BDH recipients		All adults		Single adults
	Coefficient	it Standard error	Coefficient	Standard error	Coefficient	Standard error
y = Paid-labour income per week per capita	0.063 ***	* (0.009)	0.035 ***	(0.004)	-0.141 ***	(0.007)
y^2	*** 0000		*** 0000	(0.000)	-0.001 ***	(0.000)
y * lj	-0.002 ***	* (0.000)	-0.001 ***	(0.000)	0.003 ***	(0.000)
y * U	-0.002 ***	* (0.000)	-0.001 ***	(0.000)		
lj = Paid-labour working hours per week of the head	0.205 ***	* (0.007)	0.176 ***	(0.004)	0.104 ***	(0.005)
Lj = Paid-labour working hours per week of the partner	-0.017 ***	* (0.004)	0.051 ***	(0.002)		
13/2	-0.002 ***	* (0.000)	-0.002 ***	(0.000)	-0.002 ***	(0.000)
Lj^2	0.001 ***	* (0.000)	-0.000 ***	(0.000)		
<u></u>	0.001 ***	* (0.000)	0.002 ***	(0.000)		
lj * other non-labour-income per week per capita	-0.007	* (0.000)	-0.001 ***	(0.000)	-0.002 ***	(0.000)
lj * social transfer (BDH) per week per capita	0.000	(0.001)	0.001	(0.001)	0.022 ***	(0.001)
lj * (social transfer (BDH) per week per capita) $^{\wedge}$ 2	-0.002 ***	* (0.000)	-0.002 ***	(0.000)	-0.002 ***	(0.000)
(j * BDH (Yes = 1/No = 0))			0.032 ***	(0.001)	-0.056 ***	(0.002)
[_] * other non-labour-income per week per capita	0.000	(0.000)	-0.001 ***	(0.000)		
Lj * social transfer (BDH) per week per capita	*** 900.0-	* (0.001)	0.004 ***	(0.001)		
[_j * (social transfer (BDH) per week per capita)^2	0.000	* (0.000)	-0.001 ***	(0.000)		
$\lfloor \rfloor * BDH \text{ (Yes} = 1/No = 0)$			-0.091 ***	(0.001)		
lj * age	0.002 ***	* (0.000)	0.001 ***	(0.000)	0.006 ***	(0.000)
lj * age²	0.000	* (0.000)	0.000 ***	(0.000)	0.000	(0.000)
lj * schooling (years of education)	0.000	(0.000)	-0.004 ***	(0.000)	-0.003 ***	(0.000)
<pre>lj * sex dummy (Female = 1/Male = 0)</pre>	-0.141 ***	* (0.002)	-0.115 ***	(0.001)	-0.079 ***	(0.001)
[j * indigenous dummy (Yes = 1/No = 0)]	-0.030 ***	* (0.001)	-0.024 ***	(0.001)	-0.005 ***	(0.001)
lj * afro dummy (Yes = $1/No = 0$)	-0.029 ***	* (0.001)	-0.022 ***	(0.001)	0.008 ***	(0.001)

lj * montubio dummy (Yes= $1/No=0$)	-0.023 ***	* *	(0.001)	-0.020 ***	***	(0.001)	-0.057 ***	(0.003)
[_j] * age	0.002	**	(0.000)	0.005	***	(0.000)		
Lj * age²	0.000	* * *	(0.000)	0.000	***	(0.000)		
Lj * schooling (years of education)	0.000	* * *	(0.000)	0.001	***	(0.000)		
$\lfloor \rfloor$ * sex dummy (Female = 1/Male = 0)	-0.081	* * *	(0.002)	-0.095	***	(0.001)		
$\lfloor \cdot \rfloor$ * indigenous dummy (Yes=1/No=0)	0.010	***	(0.001)	0.037	***	(0.001)		
$\lfloor \cdot \rfloor$ * afro dummy (Yes = 1/No = 0)	0.008	***	(0.001)	0.004	***	(0.001)		
$\lfloor \cdot \rfloor$ * montubio dummy (Yes = 1/No = 0)	-0.011	***	(0.001)	-0.021	***	(0.001)		
y * head's age	0.001	***	(0.000)	0.000	***	(0.000)	0.000	(0.000)
y * head's age²	0.000	***	(0.000)	0.000	***	(0.000)	0.000	(0.000)
y * head's schooling (years of education)	0.003	***	(0.000)	0.003	***	(0.000)	0.010 ***	(0.000)
y * head's sex dummy (Female = $1/Male = 0$)	0.025	***	(0.004)	0.029	***	(0.001)	0.012 ***	(0.002)
y * head's indigenous dummy (Yes = $1/No = 0$)	0.094	***	(0.003)	0.016	***	(0.001)	-0.013 ***	(0.003)
y * head's afro dummy (Yes = $1/No = 0$)	0.016	***	(0.002)	0.010	**	(0.001)	-0.008 ***	(0.002)
y * head's montubio dummy (Yes = $1/No = 0$)	-0.031	**	(0.003)	-0.020	***	(0.001)	0.069 ***	(0.005)
lj * household dependency ratio	-0.029	***	(0.003)	0.035 ***	**	(0.002)	0.009	(0.003)
lj * number of children under 5 attending a public nursery	-0.015 ***	***	(0.001)	-0.014 ***	**	(0.000)	-0.019 ***	(0.001)
lj * number of children under 5 not attending a public	0.005	* *	(0.001)	900.0	* * *	(0.000)	-0.010 ***	(0.000)
nursery								
lj * number of old age persons (65+)	0.013	***	(0.001)	-0.007 ***	***	(0.001)	0.022 ***	(0.001)
[_j * household dependency ratio	-0.095 ***	***	(0.003)	-0.080 ***	***	(0.001)		
Lj * number of children under 5 attending a public	-0.001	*	(0.000)	-0.001		(0.000)		
nursery		1	(000)	0	1	(000)		
 * number of children under 5 not attending a public nursery 	-0.012 ***	* * *	(0.000)	*** 900.0-	* * *	(0.000)		
(_j * number of old age persons (65 +)	0.029 ***	* * *	(0.001)	0.034 ***	* * *	(0.001)		

Table 6: (continued)

Variable	вон	BDH recipients		All adults	Sin	Single adults
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
y * number of unsatisfied basic needs	-0.029 ***	(0.000)	-0.018 ***	(0.000)	-0.034 ***	(0.001)
y * number of televisions	0.021 ***	(0.001)	0.007 ***	(0.000)	0.002 ***	(0.000)
y * number of telephones	0.015 ***	(0.000)	0.007 ***	(0.000)	0.008 ***	(0.000)
y * area dummy (Rural = $1/U$ rban = 0)	-0.005 ***	(0.001)	*** 600.0-	(0.000)	*** 900.0	(0.001)
y * parish's poverty by basic needs head count	-0.044 ***	(0.003)	0.047 ***	(0.001)	-0.122 ***	(0.003)
lj * parish's poverty by basic needs head count	-0.036 ***	(0.002)	-0.044 ***	(0.001)	0.057 ***	(0.002)
Lj * parish's poverty by basic needs head count	*** 600.0-	(0.001)	-0.038 ***	(0.001)	0.000	(0.000)
Number of observations	224,045		549,195)5	52,784	
Pseudo R2	0.339		0.260		0.152	

Source: Own calculation based on ENEMDUR – December 2012.

Note: Heteroskedasticity consistent standard errors are between brackets. *** Significance at 1%, **significance at 5%, *significance at 10%.

is also the case if the number of children under 5 years old rises. However, the effect is lower or not significant if children attend to a public nursery (*l_i*number* of children under 5 attending a public nursery) than if they do not (l_i*number of children under 5 not attending a public nursery), except for single adults. It means that partners allocate more time to childcare. Finally, there is a positive effect related with the presence of old-age persons in the household (number of old age persons). We interpret these results in the sense that paid-labour participation of partners and single adults may be promoted by increasing access to childcare facilities and by the presence of additional carers (i.e. oldage persons) because the burden of care work is reduced.

Finally, it has to be noted that the marginal utility of paid-labour working hours is lower for women than for men. We relate this effect with childcare role but also due to paid-labour income inequality against women (Annex 1). In this sense both childcare and gender equity policies may be seen as complements of social transfers if paid-labour participation is to be promoted.

All these results are consistent with our hypotheses that the BDH does not generate negative labour effects in the case of household heads. Even more, we find positive effects under some conditions. However, the size of the transfer does matter because if it is big enough paid-labour disincentives may be generated. In the case of partners and single adults we argue that households may be using social transfers to finance childcare.

4.2 Average marginal effects

Relying in a multinomial logit equation we estimate average marginal effects (AME) on the probability of choosing a specific paid-labour option. In this case we assume the decision of one adult as given. It means that we estimate the effects independently for household heads and partners, considering four possible choices. Summary results are presented in Table 7.

Among those adults receiving the BDH, an increase of USD 1 per week per capita on the transfer size (it is an increment of 42%, at the mean level of the BDH amount) increases the probability of no paid-labour by 1.1 and 5.6 percentage points in the case of household heads and partners, respectively. However there is not any significant effect on other choices in the case of household heads, but a reduction of 5.9 percentage points on full-time paid-labour in the case of partners. On the other hand, looking at the all adults subsample, receiving the BDH reduces the probability of no paid-labour by 2.1 percentage points for household heads, and increases the probability of full-time-paid labour by 9.2 percentage points (but not significantly). However, as

Table 7: Average marginal effects of the BDH on paid-labour.

le Choice		BDH recipi	ents	All ac	lults	Single adults
hold heads						
transfer Pr(no	aid-labour)	0.011	***	0.006	**	0.015
		(0.002)		(0.003)		(0.014)
ek per Pr(part	time paid-labour)	0.026		0.022	***	0.010
		(0.017)		(0.008)		(0.025)
Pr(full-	ime paid-labour)	0.008		-0.032		-0.038 *
		(0.026)		(0.025)		(0.023)
•	ime-plus paid-	-0.046		0.004		0.013
labour		(0.029)		(0.024)		(0.021)
'es = 1/ Pr(no	aid-labour)			-0.021	**	0.002
				(0.010)		(0.057)
Pr(par	time paid-labour)			-0.059	*	-0.043
				(0.031)		(0.089)
Pr(full-	ime paid-labour)			-0.012		0.058
				(0.081)		(0.084)
Pr(full-	ime-plus paid-			0.092		-0.018
labour				(0.079)		(0.071)
rs						
	aid-labour)	0.056	*	0.001		
tiunsiei i i(no	ara taboar)	(0.034)		(0.010)		
ek per Pr(par	time paid-labour)	0.009		0.028	*	
Tr(pan	time para taboar)	(0.018)		(0.017)		
Pr(full-	ime paid-labour)	-0.059	**	-0.031		
(. 2		(0.028)		(0.022)		
Pr(full-	ime-plus paid-	-0.007		0.002		
labour		(0.022)		(0.021)		
'es = 1/ Pr(no	aid-labour)			0.346	***	
	aiu-laboui)					
	time naid-lahour)				***	
Πίβαι	time para taboar)					
Pr(full-	ime naid-lahour)					
Hutt	para (about)					
Pr(full-	ime-plus paid-				**	
•	pras para					
Pr(full-	time paid-labour) ime paid-labour) ime-plus paid-			(0.026) -0.162 (0.050) -0.061 (0.058) -0.123 (0.062)		

Note: Heteroskedasticity consistent standard errors are between brackets. All specifications include as explanatory variables (even if not reported): paid-labour income (household head and partner), other non-labour income, age, age square, schooling, sex dummy, ethnic group dummy, household dependency ratio, number of children under 5, number of old-age persons, number of unsatisfied basic needs, assets (number of televisions and telephones), are dummy and parish's head count of poverty by unsatisfied basic needs.

Source: Own calculation based on ENEMDUR - December 2012.

^{***}Significance at 1%, **significance at 5%, *significance at 10%.

aforementioned the transfer size reduces the positive effect, as an additional USD 1 increases the probability of no paid-labour by 0.6 percentage points. In the case of partners, receiving the BDH increases the probability of no paidlabour by 34.6 percentage points. Finally, we find that receiving the BDH has no significant effects in the case of single adults.²⁷

In the case of partners (Table 8), if the dependency ratio of the household increases by 0.01 (between 1.7% and 2.3%, at the mean level) the probability of no paid-labour increases by 0.5 percentage points in the BDH recipients subsamples, while the effect is not significant for the all adults subsample, and it is negative (reduction of 0.2 percentage points) in the case of single adults. On the other hand, the presence of an additional old-age person in the households reduces the probability of no paid-labour by 18.4, 8.3 and 6.5 percentage points in each subsample, respectively, by increasing the probability of full-time paidlabour by 9.3 and 12.2 percentage points in the BDH recipients and the all adults subsamples, respectively, and the probability of full-time-plus paid-labour by 6.6 percentage points in the case of single adults. Finally, the number of children under 5 years old increases the probability of no paid-labour by between 3.4 and 6.4 percentage points in the subsamples of couples, if the children do not attend to a public nursery. However, this effect is not significant if the children attend to a public nursery. In the case of single adults, one additional child under 5, not attending to a public nursery, increases the probability of no paid-labour by 4.6 percentage points; however additional estimations show that this negative labour effect does not happen in the case of men.²⁸

All our estimations show that the BDH does not generate negative labour supply effects on household heads, while we find positive effects in some cases. However, the amount of the transfer should be defined at an optimal level. From our theoretical framework we relate this effect with the idea that leisure cannot be considered a normal good in the case of poor individuals, and that a social transfer may help households to solve liquidity constrains and to cover different transaction costs. Nevertheless, we find negative paid-labour effects for partners and in some cases for single adults. The BDH may be paying for childcare, as we

²⁷ In addition to the results presented in this paper we estimate different models for the probability of paid-labour participation using logit, probit and linear regressions (with and without IV) for each subsample, as well as average treatment effect of the BDH using propensity score matching. In all the cases the BDH has non-negative effect on household heads and single adults labour participation, but negative effects in the case of partners. All the models can be obtained from the authors upon request.

²⁸ In the case of households heads in the subsamples of couples, average marginal effects of the dependency ratio, number of children and number of old-age persons are not statistically significant on the probability of no paid-labour.

Table 8: Average marginal effects on paid-labour (partners).

Variable Household dependency	Choice Pr(no paid-labour)	BDH recipients		All adults		Single adults	
		0.513	**	0.047		-0.233	**
ratio		(0.225)		(0.088)		(0.112)	
	Pr(part-time paid-	-0.057		-0.110		0.103	
	labour)	(0.143)		(0.087)		(0.242)	
	Pr(full-time paid-	-0.323	**	0.163	*	0.085	
	labour)	(0.149)		(0.087)		(0.302)	
	Pr(full-time-plus paid-	-0.133		-0.100		0.044	
	labour)	(0.123)		(0.097)		(0.188)	
Number of children	Pr(no paid-labour)	0.026		0.011		0.072	
under 5 attending		(0.043)		(0.020)		(0.044)	
a public nursery	Pr(part-time paid-	-0.016		-0.017		0.012	
	labour)	(0.034)		(0.035)		(0.074)	
	Pr(full-time paid-	0.001		0.022		0.071	
	labour)	(0.021)		(0.030)		(0.077)	
	Pr(full-time-plus paid-	-0.011		-0.016		-0.155	*
	labour)	(0.030)		(0.029)		(0.089)	
Number of children	Pr(no paid-labour)	0.064	**	0.034	***	0.046	*
under 5 not attending		(0.028)		(0.013)		(0.024)	
a public nursery	Pr(part-time paid-	-0.004		-0.029		0.006	
	labour)	(0.024)		(0.018)		(0.035)	
	Pr(full-time paid-	-0.037	**	0.028		-0.002	
	labour)	(0.017)		(0.019)		(0.027)	
	Pr(full-time-plus paid-	-0.023		-0.033	*	-0.050	
	labour)	(0.015)		(0.020)		(0.042)	
Number of old age	Pr(no paid-labour)	-0.184	***	-0.083	***	-0.065	*
persons (65 +)	•	(0.059)		(0.028)		(0.036)	
	Pr(part-time paid-	0.035		-0.073		-0.040	
	labour)	(0.043)		(0.047)		(0.055)	
	Pr(full-time paid-	0.093	***	0.122	***	0.039	
	labour)	(0.031)		(0.040)		(0.040)	
	Pr(full-time-plus paid-	0.055		0.034		0.066	*
	labour)	(0.036)		(0.043)		(0.037)	

Source: Own calculation based on ENEMDUR - December 2012.

Note: Heteroskedasticity consistent standard errors are between brackets. All specifications include as explanatory variables (even if not reported): paid-labour income (household head and partner), other non-labour income, social transfers (BDH), the probability of receiving the BDH, age, age square, schooling, sex dummy, ethnic group dummy, number of unsatisfied basic needs, assets (number of televisions and telephones), are dummy and parish's head count of poverty by unsatisfied basic needs.

^{***} Significance at 1%, ** significance at 5%, * significance at 10%

relate this effect with lack of access to alternative childcare options, and because of paid-labour income inequality against women. If paid-labour participation is to be promoted social transfers should be complemented by policies addressing gender equity and childcare.

5 Final remarks

Social transfers are largely being implemented as a poverty and inequality reduction strategy. Recent literature provides new analytical frameworks to rely on social transfers as an instrument to generate positive economic returns. However, empirical evidence remains scarce in this field. This study provides a theoretical framework and contributes with empirical evidence on the effects of unconditional cash transfers on adult labour supply, which we believe is a key question to understand the economic effects of social transfers. Moreover, results are relevant to discuss unconditional cash transfers as a first stage for the implementation of universal basic income in developing countries.

Following traditional labour supply theories it can be argued that a social transfer discourage labour due to an income effect, assuming that leisure is a normal good. We argue that it is not the case for poor individuals which cannot cover her basic needs. For example, it is difficult to value leisure without sufficient water, food and clothing. In this sense, social transfers may not generate such kind of income effect in the case of poor households. Furthermore, international evidence suggests non-negative labour effects of social transfers under certain circumstances.

We estimate a unitary discrete labour supply model using data from Ecuador. Results for the utility function and average marginal effects are consistent with our theoretical framework, and prove our hypothesis, as we find non-negative effects of social transfers on household heads labour supply, but limited to a certain transfer level. Moreover, we find positive effects which we relate with the idea of social transfers helping poor households to solve liquidity constrains and to cover different transaction costs. On the other hand, we find negative labour supply effects on partners (who are mainly women) and single adults where a social transfer may be paying for childcare, but also because of idiosyncratic characteristics and labour market inequality against women. We believe that policies addressing gender equity and childcare should complement social transfers if paid-labour participation of partners is a final objective; however, it should be carefully thought regarding child wellbeing and the freedom to choose any kind of work.

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Annex 1: Paid-labour income (Heckman selection equation)

Log of labour income per-hour	BDH recipients	All adults	Single adults	
Age	0.020	0.026 *	0.019	
	(0.019)	(0.014)	(0.025)	
Age squared	0.000	0.000	0.000	
	(0.000)	(0.000)	(0.000)	
Schooling (Years of education completed)	0.033 ***	0.078 ***	0.064 ***	
	(0.006)	(0.003)	(0.007)	
Sex (Female = 1/Male = 0)	-0.232 ***	-0.144 ***	-0.183 **	
	(0.062)	(0.039)	(0.077)	
Indigenous (Yes = 1/No = 0)	-0.131 *	-0.104	-0.366 ***	
	(0.078)	(0.064)	(0.124)	
Afroecuadorian (Yes = 1/No = 0)	0.107	-0.122 **	-0.186 **	
	(0.078)	(0.055)	(0.089)	
Montubio (Yes = $1/No = 0$)	-0.076	0.023	-0.001	
	(0.070)	(0.060)	(0.137)	
Number of persons by age group	Yes	Yes	Yes	
Rural-urban dummy	Yes	Yes	Yes	
Province dummy	Yes	Yes	Yes	
Parish's rate of poverty by unsatisfied basic needs	Yes	Yes	Yes	
Constant	Yes	Yes	Yes	
Selection equation				
Number of unsatisfied basic needs (between 0 and 5)	-0.244 ***	-0.384 ***	-0.259 ***	
	(0.051)	(0.039)	(0.080)	
Number of televisions	0.005	0.239 ***	-0.237 *	
	(0.106)	(0.055)	(0.124)	
Number of telephones	0.088 *	0.165 ***	-0.099	
	(0.049)	(0.033)	(0.095)	
Age and age square variables	Yes	Yes	Yes	
Schooling (Years of education completed)	Yes	Yes	Yes	
Sex dummy	Yes	Yes	Yes	
Married dummy	Yes	Yes	Yes	
Constant	Yes	Yes	Yes	
Number of observations:	2,834	5,706	1,086	
Inverse mills ratio	0.617	0.316	0.275	
	(0.012)	(0.005)	(0.006)	

Source: Own calculation based on ENEMDUR - December 2012.

Interpretation: Combining the final and selection equations, an additional year of education is related with an 8.1% higher labour income per-hour for all adults. This result is at international levels (Psacharopoulos & Patrinos, 2002). However, the return is lower in the case of the single adults (6.4%) and the BDH recipients (3.3%) subsamples, which may be related with both lower quality of education and lower access to labour opportunities. Results also show gender disparities against women. Being woman is related with a between 12% and 29% lower labour-income.

Note: Heteroskedasticity consistent standard errors (between brackets) are estimated clustering at the parish level. We use columns two and three to estimate labour-income for the labour supply model.

^{***}Significance at 1%, **significance at 5%, *significance at 10%.