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The effects of social transfers on adults labour supply: A unitary discrete choice model for the case of Ecuador.

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Outline:

1. What to expected?
2. Labour supply (context matter).
3. Ecuador and the *Bono de Desarrollo Humano (cash transfer programme).*
4. Empirical strategy and results.
5. Final remarks.

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Social protection, poverty eradication and economic performance:

- Social protection (SP):
  - It is a human right.
  - It is effective to reduce poverty and inequality.
  - It is affordable: at least a basic "floor".
  - It promotes human development: health, education, opportunities.

… How / Under what conditions SP promotes economic growth?

(Cherrier et al 2013)

Social protection, poverty eradication and economic performance:

- Social protection and growth:
  - Alleviate credit and liquidity constrains.
  - Foster consumption and asset security.
  - Help to cover transaction and transportation costs.
  - Spillovers on non-beneficiaries and local economy.
  - Stabilizing aggregate demand.
  - Peace building and social cohesion.

(Barrientos & Scott 2008; Barrientos 2012; Alderman & Yemtsov 2012; Mideros et al 2012; Tirivayi et al 2013).

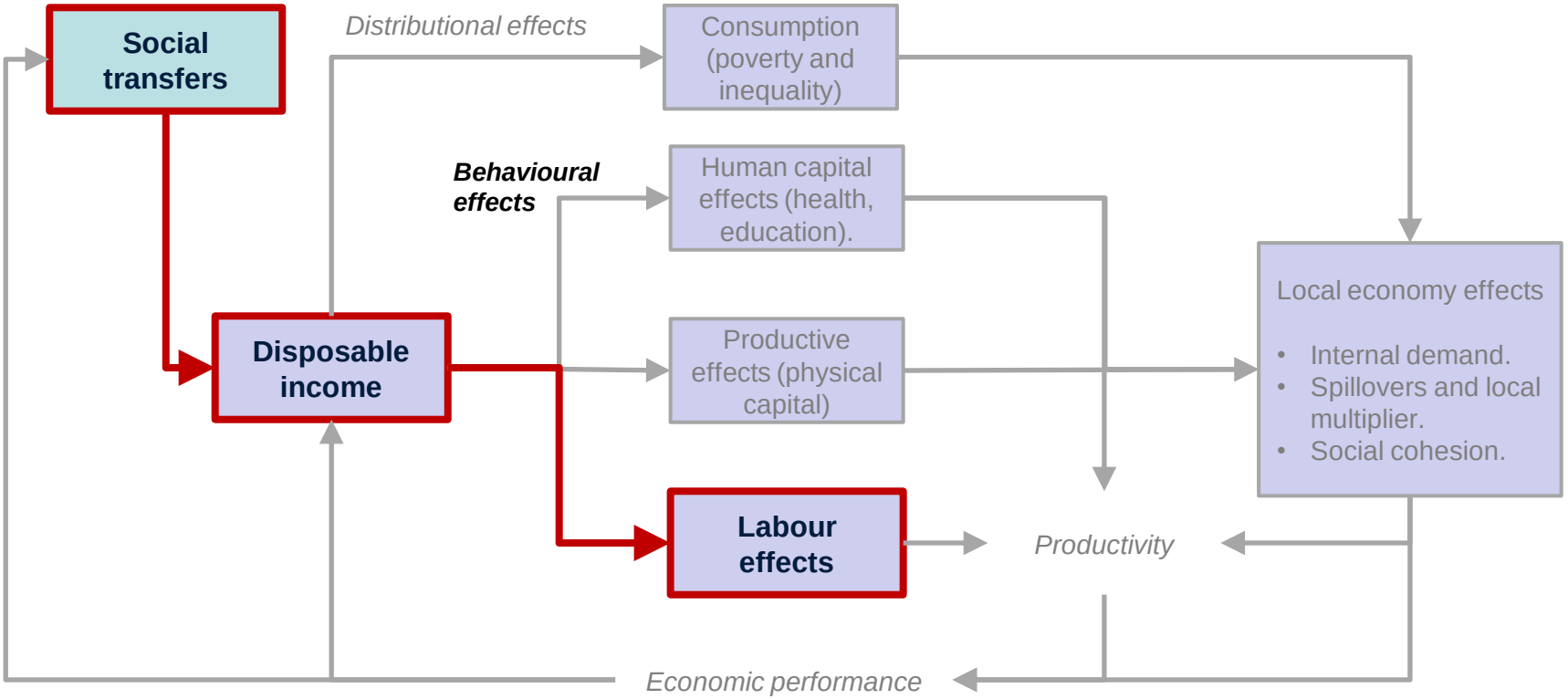
Social protection, poverty eradication and economic performance:

- Two short- mid-term considerations:

  … "the dimension of growth relevant to social transfers is growth among the households in poverty".
  (Barrientos 2012).

  … "those in poverty generally face a qualitative different set of opportunities to those better off".
  (Barrientos & Scott 2008).

Social protection, poverty eradication and economic performance:



Social protection, poverty eradication and economic performance:

- The effect of social transfers on labour supply is ambiguous from a theoretical point of view. It is ultimately an empirical question:

  (Alzúa et al, 2013)

  - Income effect.
  - Behavioural responses to conditionalities.
  - Reallocation of resources.
  - Spill-overs and GE effects.

Social protection, poverty eradication and economic performance:

- Labour supply (international evidence):
  - 3.2 percentage points higher probability of employment in South Africa (Posel et al 2006).
  - Positive effect on male labour supply in Brazil (Foguel & de Barros 2010).
  - No effect on adult labour force participation in Mexico (Skoufias & Di Maro 2008), and short-term negative effects in Peru (Fernandez & Saldarriaga 2014).

Social protection, poverty eradication and economic performance:

- Labour supply (international evidence):
  - Positive effect on male and single adults in Colombia (Barrientos & Villa 2013).
  - Evidence suggesting no disincentives to work have been found in Argentina, Uruguay and Chile (Maurizio & Vázquez 2014), Ethiopia and Bangladesh (Barrientos & Nino-Zarazua 2010), Mexico, Nicaragua & Honduras (Alzúa et al 2012, Novella et al 2012).

Social protection, poverty eradication and economic performance:

- Labour supply (international evidence):
  - CT reduces mother's labour supply by 9% in Norway (Kornstad & Thoresen 2007).
  - Women living in regions with lack of adequate childcare facilities work less in Australia (Breunig & Gong 2010).

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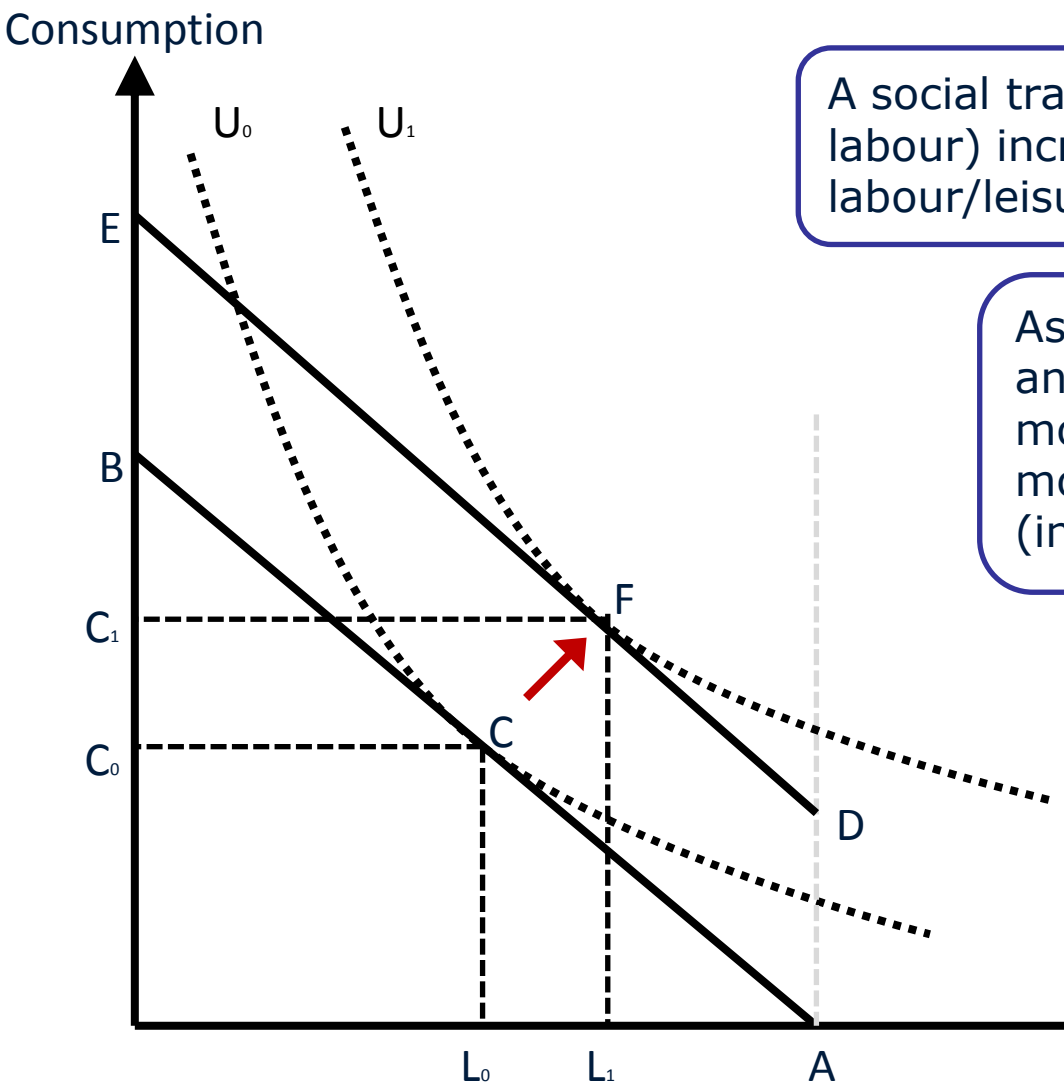
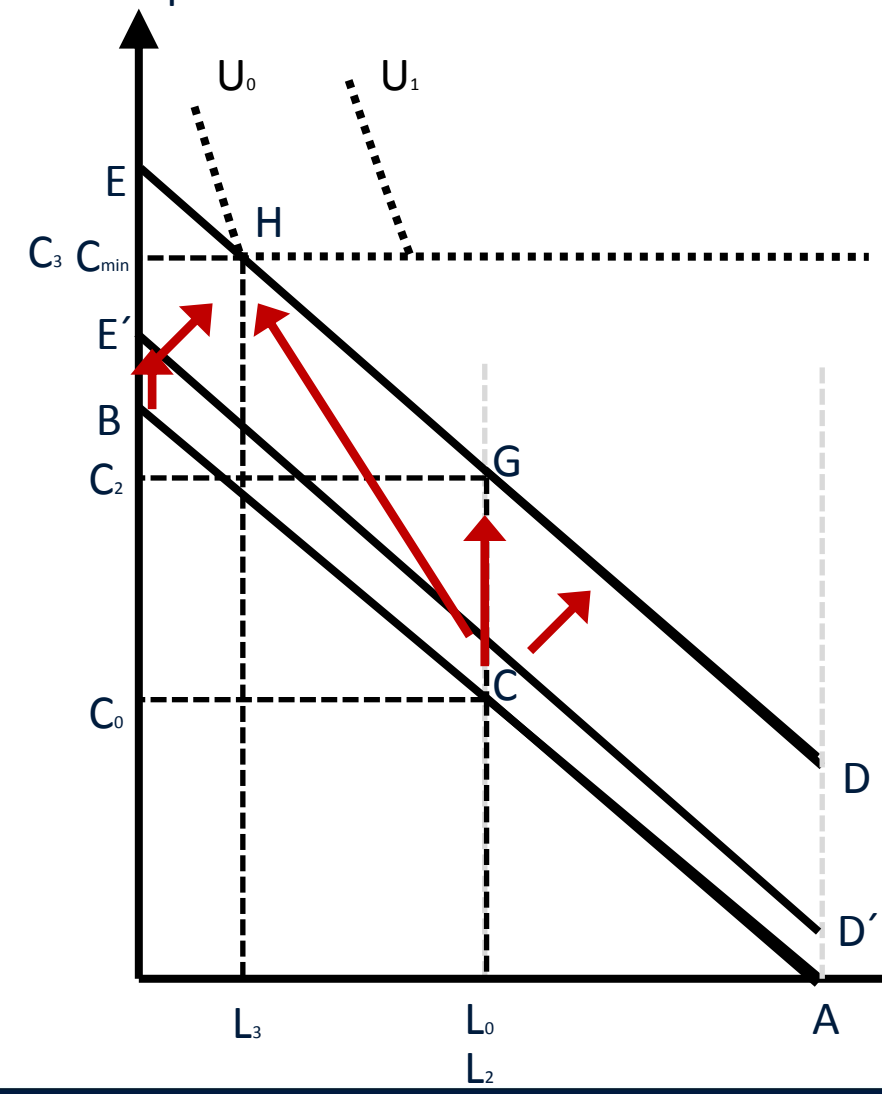


A social transfer (unconditional on labour) increases consumption at any labour/leisure level.

Assuming that consumption and leisure are normal goods: more leisure (less work) and more consumption is preferred (income effect).

There is no substitution effect if the social transfer does not affect real wage.



Leisure should not be considered a normal good if basic needs are not satisfied (poverty).

There exists credit and liquidity constrains, transportation costs and exclusion factors which affects poor individuals.

Social transfers may help people to solve those constrains, promoting labour.

Unitary discrete choice model:

$$max\ \mathrm{U_j}(.) = \begin{cases} \left(t_h^l,\ t_p^l,\ y_j\right),\ y_j \geq C_{min} \\ \left(y_j - C_{min}\right),\ y_j < C_{min} \end{cases}$$

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

- Unitary: Labour decision at the household level.
- Discrete: Constrained in the choice of working hours.

(van Soest 1995, van Soest et al 2002, Haan 2004, Beninger et al 2007, Kornstad & Thoresen 2007, Bloemen 2010, Breunig 2010, Breunig & Gong 2010, Blundell & Shephard 2012, Löffler et al 2013, Aaberge & Colombino 2013, Kabátek 2014, Dagsvik et al 2014).

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Data and programme information:

- Data is from the Urban and Rural National Survey of Employment, Unemployment and Underemployment (ENEMDUR).
  - Round of December 2012.

- The *Bono de Desarrollo Humano*, BDH, is a cash transfer programme targeted at poor households by a proxy means test index (updated in 2008).
  - Flat transfer of USD 35 with no labour conditionalities.
  - To guarantee a minimum level of consumption.
  - To incorporate (soft) conditionalities on health and education.
  - To protect old-age and disable persons.
  - Positive effects on poverty, nutrition, school attendance, child labour, etc. ⇨

Subsamples: Descriptive statistics

Variable	BDH recipients		All adults		Single adults	
	Obs.	Mean	Obs.	Mean	Obs.	Mean
Household size (number of persons)	**2834**	**4.4**	**5706**	**3.9**	**1086**	**2.8**
Age	2834	39.8	5706	**39.4**	1086	42.6
Schooling (Years of education)	2834	6.3	5706	9.4	1086	8.7
Sex (Female=1 / Male=0)	2834	0.500	5706	0.500	1086	**0.762**
Member (Head=1 / Partner=0)	2834	0.500	5706	0.500	1086	1.000
Indigenous (Yes=1 / No=0)	2834	**0.105**	5706	0.060	1086	0.059
Afroecuadorian (Yes=1 / No=0)	2834	0.056	5706	0.046	1086	0.063
Number of children (younger than 3 years old)	2834	0.208	5706	0.198	1086	0.116
Number of children (between 3 and 5 years old)	2834	0.213	5706	0.185	1086	0.107
Number of children (between 6 and 11 years old)	2834	**1.035**	5706	0.803	1086	0.566
Number of children (between 12 and 17 years old)	2834	**0.870**	5706	0.697	1086	0.744
Number of young (between 18 and 29 years old)	2834	0.302	5706	0.357	1086	0.137
Number of adults (between 30 and 64 years old)	2834	1.698	5706	1.643	1086	0.863
Number of old-age (older than 64 years old)	2834	0.053	5706	0.034	1086	0.245
Number of unsatisfied basic needs	2834	**1.008**	5706	0.499	1086	0.428
Area (Rural=1 / Urban=0)	2834	**0.677**	5706	0.364	1086	0.296
Labour income per-month per-capita	2834	44.39	5706	111.91	1086	116.20
Household's social transfer (BDH) per-month per-capita	2834	**9.47**	5706	3.86	1086	4.48
Poor (Yes=1 / No=0)	2834	0.464	5706	0.214	1086	0.313
Extreme poor (Yes=1 / No=0)	2834	0.136	5706	0.063	1086	0.130

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Empirical strategy:

- Conditional logit model.

$U_j = V_j + \varepsilon_j$, where Ej (unobserved characteristics) is i.i.d.

$V_j = X`^s_j \beta$, where Vj is linear in parameters

$$Pr_j^k = \frac{exp\left(X`^k_j \beta\right)}{\sum_{s=1}^{L} exp\left(X`^s_j \beta\right)}, t_j^{l,k} \in L, s = \{1, \ldots, k, \ldots, L\}$$

(Haan 2004, Kornstad & Thoresen 2007, Löffer 2013, Kabátek 2014).

- 16 possible paid-labour choices at the household level (no-paid labour, part-time, full-times, more than full-time).

Empirical strategy:

- Working hours per week are defined empirically at:
  - 0 hours for no paid labour,
  - 28, 20 and 24 for part-time labour of heads, partners and singles.
  - 40 for full time paid labour, and
  - 50 for more than full time paid labour.

- Paid labour income is estimated by a Heckman selection equation.⇨

- Potential endogeneity of receiving the BDH is tested using a replica of the proxy means test index as IV.
  - Conclusions do not change if the model is estimated without the IV.

Utility function (summary):

Positive effect (household heads)

Negative effect (partners & single adults)

Variable	BDH recipients		All adults		Single adults	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
lj = Paid-labour working hours per week of the head	0.205 ***	(0.007)	0.185 ***	(0.004)	0.119 ***	(0.005)
l_j = Paid-labour working hours per week of the partner	-0.017 ***	(0.004)	0.069 ***	(0.002)		
lj * social transfer (BDH) per week per capita	0.000	(0.001)	0.015 ***	(0.000)	-0.001 ***	(0.000)
lj * (social transfer (BDH) per week per capita)^2	-0.002 ***	(0.000)	-0.003 ***	(0.000)	0.000 ***	(0.000)
lj * probability of receiving the BDH			0.014 ***	(0.001)	-0.019 ***	(0.001)
l_j * social transfer (BDH) per week per capita	-0.006 ***	(0.001)	-0.045 ***	(0.000)		
l_j * (social transfer (BDH) per week per capita)^2	0.000 ***	(0.000)	0.005 ***	(0.000)		
l_j * probability of receiving the BDH			0.031 ***	(0.001)		
lj * household dependency ratio	-0.029 ***	(0.003)	0.043 ***	(0.002)	-0.007 ***	(0.003)
lj * number of children under 5 attending a public nursery	-0.015 ***	(0.001)	-0.014 ***	(0.001)	-0.018 ***	(0.001)
lj * number of children under 5 not attending a public nursery	0.005 ***	(0.001)	0.007 ***	(0.000)	-0.010 ***	(0.000)
lj * number of old age persons (65+)	0.013 ***	(0.001)	-0.009 ***	(0.001)	0.024 ***	(0.001)
l_j * household dependency ratio	-0.095 ***	(0.003)	-0.114 ***	(0.001)		
l_j * number of children under 5 attending a public nursery	-0.001 **	(0.000)	0.000	(0.000)		
l_j * number of children under 5 not attending a public nursery	-0.012 ***	(0.000)	-0.006 ***	(0.000)		
l_j * number of old age persons (65+)	0.029 ***	(0.001)	0.041 ***	(0.001)		

Gender

Childcare

Average marginal effects (summary):
(Household heads)

... but, size matter

Variable	Choice	BDH recipients	All adults	Single adults
		Household heads		
Social transfer (BDH) per week per capita	Pr(no paid-labour)	**0.011** ***	0.004 **	0.020 ***
		(0.002)	(0.002)	(0.007)
	Pr(part-time paid-labour)	0.026	0.009 *	-0.006
		(0.017)	(0.005)	(0.009)
	Pr(full-time paid-labour)	0.008	**-0.036** ***	**-0.025** **
		(0.026)	(0.013)	(0.010)
	Pr(full-time-plus paid-labour)	-0.046	0.022	0.011
		(0.029)	(0.014)	(0.010)
Probability of receiving the BDH	Pr(no paid-labour)		**-0.061** **	**-0.184** *
			(0.024)	(0.100)
	Pr(part-time paid-labour)		-0.037	**0.301** ***
			(0.040)	(0.077)
	Pr(full-time paid-labour)		-0.021	0.039
			(0.081)	(0.105)
	Pr(full-time-plus paid-labour)		**0.119** *	**-0.157** *
			(0.069)	(0.087)

Positive effect

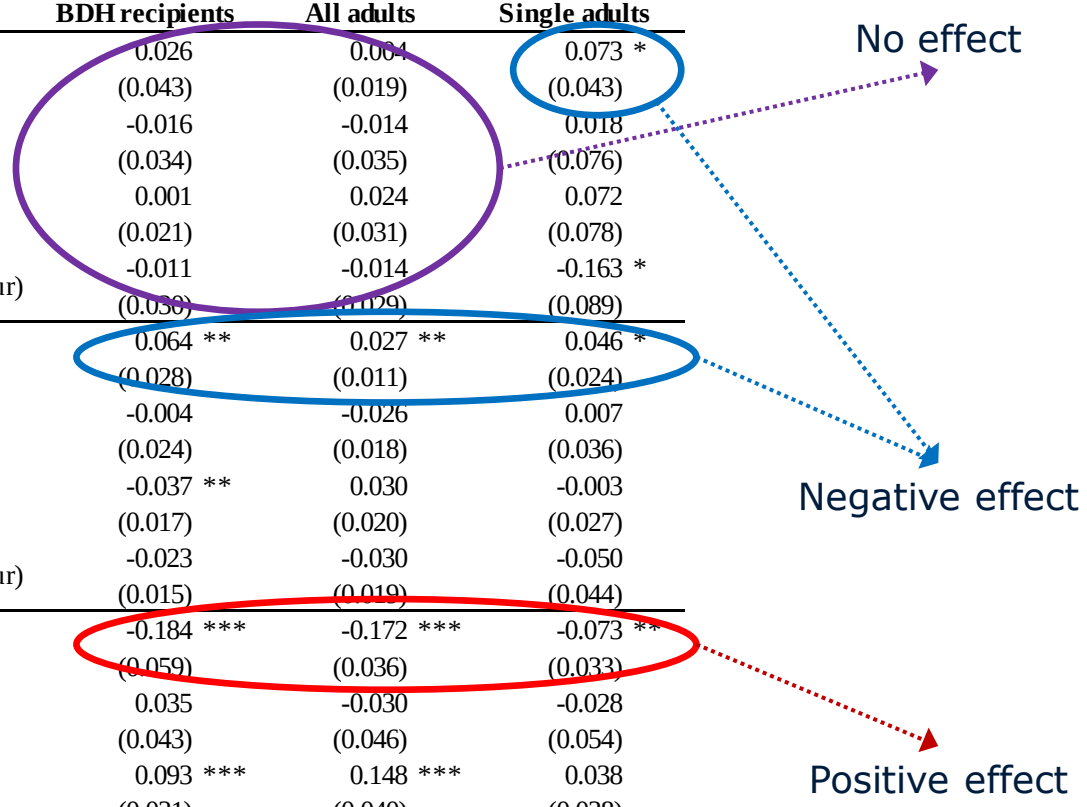
Average marginal effects (summary):
(Partners)

Negative effect

Variable	Choice	BDH recipients	All adults	Single adults
		Partners		
Social transfer (BDH) per week per capita	Pr(no paid-labour)	**0.056** *	**0.116** ***	
		(0.034)	(0.006)	
	Pr(part-time paid-labour)	0.009	-0.017 *	
		(0.018)	(0.010)	
	Pr(full-time paid-labour)	-0.059 **	-0.056 ***	
		(0.028)	(0.009)	
	Pr(full-time-plus paid-labour)	-0.007	-0.043 ***	
		(0.022)	(0.009)	
Probability of receiving the BDH	Pr(no paid-labour)		**0.155** ***	
			(0.039)	
	Pr(part-time paid-labour)		-0.105 **	
			(0.054)	
	Pr(full-time paid-labour)		-0.057	
			(0.061)	
	Pr(full-time-plus paid-labour)		0.008	
			(0.049)	

Average marginal effects (summary):
(Partners - childcare)

Variable	Choice	BDH recipients	All adults	Single adults
Number of children under 5 attending a public nursery	Pr(no paid-labour)	0.026	0.004	0.073 *
		(0.043)	(0.019)	(0.043)
	Pr(part-time paid-labour)	-0.016	-0.014	0.018
		(0.034)	(0.035)	(0.076)
	Pr(full-time paid-labour)	0.001	0.024	0.072
		(0.021)	(0.031)	(0.078)
	Pr(full-time-plus paid-labour)	-0.011	-0.014	-0.163 *
		(0.030)	(0.029)	(0.089)
Number of children under 5 not attending a public nursery	Pr(no paid-labour)	0.064 **	0.027 **	0.046 *
		(0.028)	(0.011)	(0.024)
	Pr(part-time paid-labour)	-0.004	-0.026	0.007
		(0.024)	(0.018)	(0.036)
	Pr(full-time paid-labour)	-0.037 **	0.030	-0.003
		(0.017)	(0.020)	(0.027)
	Pr(full-time-plus paid-labour)	-0.023	-0.030	-0.050
		(0.015)	(0.019)	(0.044)
Number of old age persons (65+)	Pr(no paid-labour)	-0.184 ***	-0.172 ***	-0.073 **
		(0.059)	(0.036)	(0.033)
	Pr(part-time paid-labour)	0.035	-0.030	-0.028
		(0.043)	(0.046)	(0.054)
	Pr(full-time paid-labour)	0.093 ***	0.148 ***	0.038
		(0.031)	(0.040)	(0.038)
	Pr(full-time-plus paid-labour)	0.055	0.053	0.063 *
		(0.036)	(0.046)	(0.038)



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Final remarks (summary):

- Social transfers are largely being implemented as a poverty and inequality reduction strategy.

- Recent literature develops an analytical framework to argue in favour of potential economic returns, specially at the micro-level, but there still a gap regarding empirical evidence.

- Traditional labour supply intuition indicates that social transfers may discourage labour (income effect).

  ... But, leisure is not a normal good if basic needs are not satisfied. Context matter.

Final remarks (contribution):

- Using a unitary discrete choice model for the case of Ecuador we found:
  - No labour disincentives in the case of household heads, and positive effects but up to a certain transfer size. It is consistent with our theoretical framework.
  - Negative effects in the case of partners and single adults, related with childcare role and gender inequalities in the labour market.

- Results are policy relevant:
  - To see social transfers as an instrument for economic inclusion: It is possible to promote labour.
  - To care about targeting and design: size matter.
  - To implement complementary policies: childcare, gender equity, access to productive assets.