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Fostering social mobility.

The case of the *Bono de Desarrollo Humano* in Ecuador.

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Washington D.C., 12 September 2015

2015 HDCA Annual Conference. Capabilities on the Move: Mobility and Aspirations.

Outline:

1. Introduction.

2. Social mobility in Ecuador.

3. The effect of the BDH.

4. Final remarks.

Motivation:

- **Social protection** programmes are being implemented in many low and middle income countries, with positive effects on poverty reduction, inequality decline, and on human capital, labour supply and assets accumulation.
- Literature is scarce regarding long-term effects on **social mobility**.
- **Origin independence** is a necessary condition to guarantee that a person achieve whatever she wants.

Whether and to what extent social transfers foster social mobility of poor households?

Social mobility:

- **Long-term process** by which individuals change their relative position in the welfare distribution

(Baulch & Hoddinott, 2009)

- Intra- and inter-generational:
 - [**Absolute**] Individual growth.
 - [**Relative**] Positional change: exchange mobility, structural mobility.
 - Long-term inequality.
 - Risk (behavioural interpretation).

(Jäntti & Jenkins, 2014)

It is desirable → Equality of opportunities.

The role of social transfers:

- **Social transfers** help poor households to:
 - Invest on human and physical capital.
 - Protect against economic shocks.
 - Smooth consumption.
 - Solve liquidity constrains.

Barrientos (2012); Alderman & Yemtsov (2012); Mideros et al (2013); Tirivayi et al (2013); Baulkch & Hoddinott (2000); Rodríguez-Oreggia & Freije (2000)

- **Social transfers** may help poor households to solve poverty traps.

Carter & Barrett (2006); Ghatak (2015)

- **Complementary policies:** training, self-employment, labour intermediation, local economy performance.

Sandberg (2012)

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Data:

- Administrative data – *Registro Social* (RS) – Ecuador:
 - Data is unlikely to include top welfare households.
 - Panel: 413,043 households (2004, 2009, 2014).
- RS index: multivariate index estimated by principal components (between 0 and 100):
 - 27 variables (2004), 30 variables (2009).
 - Poverty lines as a proxy of consumption.
- *Bono de Desarrollo Humano* (BDH) – Human Development Grant:
 - Monthly flat-cash transfer: USD 15 (2003), USD 30 (2007), USD 35 (2009), USD 50 (2013).
 - Proxy mean test – RS poor with children.
 - Soft-conditionality on school attendance and health control.

Descriptive statistics:

Variable	Observations	Mean	Standard deviation	Min.	Max.
<i>Human capital variables</i>					
Household's size in 2003	413,043	3.97	2.00	1.00	18.00
Household's size in 2009	413,043	3.77	1.97	1.00	16.00
Household's size in 2014	413,043	3.43	1.87	1.00	18.00
Household's dependency ratio in 2003	413,043	0.48	0.26	0.00	1.00
Household's dependency ratio in 2009	413,043	0.49	0.29	0.00	1.00
Household's dependency ratio in 2014	413,043	0.46	0.33	0.00	1.00
Household's median schooling in 2003	413,043	4.80	2.91	0.00	18.00
Household's median schooling in 2009	413,043	4.89	2.95	0.00	18.00
Household's median schooling in 2014	413,043	5.40	2.22	0.00	18.00
<i>Physical capital variables</i>					
Household's number of durables in 2003	413,043	1.15	0.98	0.00	10.00
Household's number of durables in 2009	413,043	1.80	1.20	0.00	10.00
Household's number of durables in 2014	413,043	2.32	1.19	0.00	10.00
<i>Labour variables</i>					
Share of working age with income in 2003	413,043	0.69	0.33	0.00	1.00
Share of working age with income in 2009	413,043	0.59	0.35	0.00	1.00
Share of working age with income in 2014	413,043	0.43	0.38	0.00	1.00
<i>Change variables</i>					
Change in household's size between 2003 and 2009	413,043	-0.21	1.62	-13.00	10.00
Change in household's size between 2003 and 2014	413,043	-0.54	2.00	-14.00	11.00
Change in household's size between 2009 and 2014	413,043	-0.33	1.24	-11.00	11.00
Change in household's dependency ratio between 2003 and 2009	413,043	-0.15	1.44	-10.00	10.00
Change in household's dependency ratio between 2003 and 2014	413,043	-0.46	1.83	-11.00	10.00
Change in household's dependency ratio between 2009 and 2014	413,043	-0.31	1.10	-9.00	8.00
Change in median schooling between 2003 and 2009	413,043	0.09	2.66	-20.00	18.00
Change in median schooling between 2003 and 2014	413,043	0.60	2.88	-17.00	18.00
Change in median schooling between 2009 and 2014	413,043	0.51	2.35	-21.00	17.00
Change in durables between 2003 and 2009	413,043	0.65	1.11	-5.00	5.00
Change in durables between 2003 and 2014	413,043	1.17	1.18	-5.00	5.00
Change in durables between 2009 and 2014	413,043	0.52	1.10	-5.00	5.00
Change in share of working age with income between 2003 and 2009	413,043	-0.10	0.39	-1.00	1.00
Change in share of working age with income between 2003 and 2014	413,043	-0.26	0.46	-1.00	1.00
Change in share of working age with income between 2009 and 2014	413,043	-0.16	0.44	-1.00	1.00

Determinants of social mobility.

Woolard & Klasen (2015)

Determinants of social mobility:

Variable	Absolute mobility				Relative mobility			
	RS index change regression (OLS) - log RS index				Probability of a positive rank change (percentile) - average marginal effect			
	2003-2009*	2003-2014*	2009-2014*	2009-2014**	2003-2009*	2003-2014*	2009-2014*	2009-2014**
Log RS index (initial)	0.245 (0.002)	0.196 *** (0.001)	0.329 *** (0.002)	0.422 *** (0.002)	-1.422 *** (0.006)	-1.492 *** (0.006)	-1.671 *** (0.007)	-0.474 *** (0.002)
Head of house is female (Yes=1 / No=0)	-0.002 *** (0.000)	-0.008 *** (0.000)	-0.013 *** (0.000)	-0.004 *** (0.001)	-0.004 ** (0.001)	-0.020 *** (0.001)	-0.037 *** (0.001)	-0.008 *** (0.002)
Indigenous (Yes=1 / No=0)	-0.06 *** (0.00)				-0.127 *** (0.002)	-0.083 *** (0.002)	-0.081 *** (0.002)	-0.030 *** (0.003)
Afroecuadorian (Yes=1 / No=0)	0.00 (0.00)				0.003 (0.003)	0.008 ** (0.003)	0.009 ** (0.003)	0.007 * (0.004)
Montubio (Yes=1 / No=0)	-0.01 (0.00)				-0.029 *** (0.002)	-0.030 *** (0.002)	-0.030 *** (0.002)	-0.068 *** (0.002)
Rural area (Yes=1 / No=0)	-0.00 (0.00)				-0.015 *** (0.001)	-0.036 *** (0.001)	-0.062 *** (0.001)	-0.049 *** (0.001)
Head of house's age	0.001 *** (0.000)	0.003 *** (0.000)	0.003 *** (0.000)	0.000 ** (0.000)	0.001 ** (0.000)	0.006 *** (0.000)	0.008 *** (0.000)	-0.001 *** (0.000)
Household's size (initial)	-0.022 *** (0.000)				-0.049 *** (0.000)	-0.056 *** (0.001)	-0.069 *** (0.001)	-0.039 *** (0.001)
Household's dependency ratio (initial)	0.01 (0.00)				0.049 *** (0.003)	-0.138 *** (0.003)	-0.171 *** (0.003)	-0.072 *** (0.003)
Household's median schooling (initial)	0.01 (0.00)				0.025 *** (0.000)	0.021 *** (0.000)	0.014 *** (0.000)	0.020 *** (0.000)
Household's number of durables (initial)	0.07 (0.00)				0.162 *** (0.001)	0.165 *** (0.001)	0.154 *** (0.001)	0.129 *** (0.001)
Share of working age with income (initial)	0.02 (0.001)				0.074 *** (0.003)	0.070 *** (0.002)	0.040 *** (0.003)	-0.010 *** (0.003)
Change in household's size	-0.027 *** (0.000)	0.028 *** (0.000)	0.028 *** (0.000)	0.033 *** (0.001)	-0.066 *** (0.001)	-0.072 *** (0.001)	-0.079 *** (0.001)	-0.037 *** (0.001)
Change in household's dependency ratio	-0.00 (0.00)				-0.023 *** (0.001)	-0.029 *** (0.001)	-0.042 *** (0.001)	-0.052 *** (0.001)
Change in median schooling	0.05 (0.00)				0.014 *** (0.000)	0.016 *** (0.000)	0.014 *** (0.000)	0.018 *** (0.000)
Change in durables	0.08 (0.00)				0.216 *** (0.000)	0.202 *** (0.001)	0.231 *** (0.001)	0.195 *** (0.001)
Change in share of working age with income	0.03 (0.000)				0.086 *** (0.002)	0.095 *** (0.002)	0.110 *** (0.002)	0.020 *** (0.002)
Number of observations	413,043	413,043	413,043	412,917	413,043	413,043	413,043	413,029
Adjusted R2	0.7570	0.7531	0.7693	0.7107				

Segmentation characteristics

Initial conditions

Change variables

Determinants of social mobility:

Segmentation characteristics

Gender inequality
(Female)

Absolute mobility

-0.2%; -1,3%

Relative mobility

-0.4pp; -3.7pp

Ethnic inequality
(Indigenous)

Absolute mobility

-2.7%; -6.0%

Relative mobility

-3.0pp; 12.7pp

Determinants of social mobility:

Initial conditions

Demographic poverty trap
(Household's size)

Absolute mobility

-2.2%; -3,9%

Relative mobility

-3.9pp; -6.9pp

Low education poverty trap
(schooling)

Absolute mobility

0.6%; 1.7%

Relative mobility

1.4pp; 2.5pp

Determinants of social mobility:

Change variables

Change in education
(schooling)

Absolute mobility

0.6%; 1,4%

Relative mobility

1.4pp; 1.8pp

Change in labour participation

Absolute mobility

0.8%; 3.7%

Relative mobility

2.0pp; 11.0pp

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Evaluation strategy:

- Absolute mobility
- Difference in difference:

$$Y_{it} = \alpha + \beta T_{i1}t + \rho T_{i1} + \gamma t + \varepsilon_{it}$$

1. Intention to treat (ITT) effect in two periods: 2003-2009 and 2009-2014.
2. Treatment effect for the second period: 2009-2014.
3. The effect of variation of the BDH: *Crédito de Desarrollo Humano* (CDH) for the second period.

The effect of the BDH:

Variable	2003-2009*	2009-2014**	2009-2014**	2009-2014**	2009-2014** (p)	2009-2014** (p)	2009-2014** (p)
BDH - ITT (Yes=1 / No=0)							
BDH - Intention to treat (ITT)							
BDH - recipient (Yes=1 / No=0)							
BDH - Treatment effect							
CDH - recipient (Yes=1 / No=0)							
Credito de desarrollo humano (CDH)							
t = period (Final=1 / Initial=0)	-0.054 *** (0.000)	0.079 *** (0.001)	0.034 *** (0.001)	0.125 *** (0.001)	0.074 *** (0.000)	0.035 *** (0.001)	0.133 *** (0.001)
DD - Interaction (T * t)	0.111 *** (0.000)	0.148 *** (0.001)	0.120 *** (0.001)	0.040 *** (0.002)	0.148 *** (0.001)	0.136 *** (0.001)	0.042 *** (0.001)
Head of house is female (Yes=1 / No=0)	-0.003 *** (0.000)	0.029 *** (0.001)	0.027 *** (0.001)	0.025 *** (0.001)	0.051 *** (0.000)	0.041 *** (0.000)	0.048 *** (0.001)
Indigenous (Yes=1 / No=0)	-0.062 *** (0.001)	-0.136 *** (0.001)	-0.134 *** (0.002)	-0.126 *** (0.002)	-0.134 *** (0.001)	-0.134 *** (0.001)	-0.125 *** (0.001)
Afroecuadorian (Yes=1 / No=0)	0.002 ** (0.001)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	0.006 *** (0.001)	0.006 *** (0.001)	0.009 *** (0.001)
Montubio (Yes=1 / No=0)	-0.014 *** (0.001)	-0.134 *** (0.001)	-0.140 *** (0.001)	-0.147 *** (0.001)	-0.134 *** (0.001)	-0.134 *** (0.001)	-0.143 *** (0.001)
Rural area (Yes=1 / No=0)						-0.105 *** (0.000)	-0.106 *** (0.001)
Head of house's age						0.002 *** (0.000)	0.003 *** (0.000)
Household's size	-0.035 *** (0.000)	-0.056 *** (0.000)	-0.072 *** (0.000)	-0.077 *** (0.000)	-0.050 *** (0.000)	-0.065 *** (0.000)	-0.073 *** (0.000)
Household's dependents share	-0.033 *** (0.000)	-0.019 *** (0.001)	-0.018 *** (0.001)	-0.025 *** (0.001)	-0.007 *** (0.001)	-0.003 *** (0.001)	-0.014 *** (0.001)
Household's median schooling	0.011 *** (0.000)	0.031 *** (0.000)	0.030 *** (0.000)	0.033 *** (0.000)	0.033 *** (0.000)	0.031 *** (0.000)	0.036 *** (0.000)
Household's number of durables	0.092 *** (0.000)	0.184 *** (0.000)	0.189 *** (0.000)	0.198 *** (0.000)	0.172 *** (0.000)	0.173 *** (0.000)	0.189 *** (0.000)
Share of working age with income	0.022 *** (0.000)	0.005 *** (0.001)	-0.003 *** (0.001)	-0.006 *** (0.001)	0.019 *** (0.001)	0.010 *** (0.001)	0.012 *** (0.001)
Number of observations	413,043	412,979	412,979	336,882	1,258,463	1,258,463	938,830
Adjusted R2	0.7504	0.6492	0.6326	0.5764	0.6583	0.6476	0.5601

Difference in difference

The effect of the BDH:

The effect of social transfers on social mobility

Intention to treat (ITT)

2003-2009

11.1%

2009-2014

14.8%

Treatment effect (BDH)

2009-2014

12.0%; 13.6%

Treatment effect (CDH / BDH)

2009-2014

4.0%; 4.2%

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Final remarks:

- Analytical contribution:
 - Administrative panel data allow us to evaluate long-term effect of social transfers on social mobility.
- Empirical evidence:
 - **There are clear poverty traps (demographic, low education, low labour participation) and inequalities which constrains social mobility.**
 - **We find new evidence of the positive effects of social transfers on social mobility.**
 - **Social transfers have a higher positive effect if they are part of a comprehensive strategy for poverty eradication.**
- Results are policy relevant:
 - **Social transfers should not be seen only by their protective objectives, but also for their transformative power.**
 - Social transfers should be designed to solve context specific poverty traps.
 - Social transfers are not a silver bullet. Complementary policies are needed to develop a comprehensive strategy to eradicate poverty.