

Youth Responses to Cash Transfers: Evidence from Brazil

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Institutional Context

- Brazil in the 2000s:
 - economic growth and decline of social inequality and poverty rates
 - universal enrollment of primary-school aged children after CCTs
- Indeed, 2009 amendment increased compulsory and free education for children aged 4–17 (vs. 6–14) with full transition by 2016
- But universalization of secondary education far from being reached:
 - In 2013, only 54.3% of young people aged up to 19 have completed upper secondary education (OECD rate is 80%)
 - Transition: youth neither studying nor working has increased
 - 27% of 20-24 years-old in 2015

Education at a Glance 2017

The screenshot shows a web browser displaying a news article on the G1 website. The article title is "53% dos jovens brasileiros estão no ensino médio; média da OCDE é de 95%". The sub-headline reads: "Dados integram a mais recente edição do estudo 'Education at a Glance' ('Um olhar sobre a educação', na tradução livre do inglês)." The author is "Por Vanessa Fajardo, G1" and the date is "12/09/2017 09:41". The article text begins with "Apenas 53% dos jovens brasileiros estavam matriculados no ensino médio em 2015. O índice é muito inferior ao observado nos países da Organização para Cooperação e Desenvolvimento Econômico (OCDE), onde a média de matrícula dos estudantes de 15 e 16 anos é de 95%." To the right of the text is a blue box for "VESTIBULAR 2018.1 MEDICINA VASSOURAS" with the text "Inscrições até 06/11" and the website "www.uss.br". The browser's address bar shows the URL "https://g1.globo.com/educacao/noticia/53-dos-jovens-brasileiros-estao-no-ensino-medio-media-da-ocde-e-de-95.ghtml". The taskbar at the bottom shows various application icons and the system clock indicating 09:34 on 25/09/2013.

53% dos jovens brasileiros estão no ensino médio; média da OCDE é de 95%

Dados integram a mais recente edição do estudo 'Education at a Glance' ('Um olhar sobre a educação', na tradução livre do inglês).

Por Vanessa Fajardo, G1
12/09/2017 09:41 - Atualizado 12/09/2017 09:41

Apenas 53% dos jovens brasileiros estavam matriculados no ensino médio em 2015. O índice é muito inferior ao observado nos países da Organização para Cooperação e Desenvolvimento Econômico (OCDE), onde a média de matrícula dos estudantes de 15 e 16

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OECD Indicators for Brazil

- Educational attainment of 25-64 year-olds (2016): 51% below upper secondary (Table A1.1)
 - 22% OECD average
- Educational attainment of 25-34 year-olds (2015): 36% below upper secondary (Table A1.2)
 - 16% OECD average
- Enrolment rates ages 15-19 (2015): 68% (Table C1.1)
 - 85% OECD average
 - in upper secondary: 43% (Table C1.3, ages 15-19, 2015)
 - age 18: 32% secondary and 14% tertiary (Table C1.2)

Causes and Consequences

- Reasons for dropping out of school: lack of income ($\approx 25\%$), supply issues ($\approx 10\%$), and pure lack of interest or parents not regarding school as an attractive option ($\approx 40\%$) – PNAD 2004, 2006
- Worse economic and social prospects for dropouts:
 - worse job prospects with lower wages and higher unemployment, even worse for disadvantaged youth
 - disadvantaged youth: higher levels of informality and more unemployment spells (Calero et al. (2016))
- Provision of financial incentives might help
 - **cash transfers**

Welfare Programs and Targeting

- **Welfare programs** (food stamps, disability rolls, unemployment insurances, cash transfers, etc.) have rapidly expanded
 - supporters: essential safety net
 - opponents: social and economic dependency
- In designing such programs, a key feature is **targeting**:
 - targeting is very costly to administer (Benhassine et al., 2015)
 - for example, manipulable incomes (e.g., Camacho and Conover, 2011; Alatas et al., 2012)
- In particular, **cash transfer programs**:
 - combined with conditionalities, can boost effectiveness
 - scaling up the program: which groups respond/benefit the most?

This paper

What is the effect of conditional cash transfers for teens on educational attainment, economic self-sufficiency, and labor market outcomes?

- **Bolsa Família** in Brazil provides an interesting setting:
 - sharp discontinuity embedded in the **exclusion rule**:
 - turning 18 right after December 31st renders the teen eligible for an entire year of cash assistance, whereas teens turning 18 before that date are excluded from the program
 - discontinuity does not rely on *per capita* income eligibility thresholds, which can be highly manipulated
 - most importantly, several sources of **administrative data** available

Preview of Preliminary Results

- We find:
 - very small, but still positive effect on school enrollment;
 - no evidence of positive impacts on educational attainment or economic self-sufficiency;
 - negative impact on formal labor market outcomes in the first year:
 - disincentive effect to work in the formal sector when young;
 - but positive effect at the age of 25.
 - effects concentrated on males
- Our findings support the view that interventions for disadvantaged youth might enhance non-cognitive abilities, not captured by formal educational attainment
 - importance of conditionalities and program enforcement (Brollo et al., 2017)

The *Bolsa Família* Program

- Created in 2003 with two major goals:
 - promoting an immediate poverty alleviation
 - reinforcing access to education and health services to break the persistence of poverty across generations
- Initial target: poor families with children up to 15 years of age, conditional on school attendance
 - positive effects on educational outcomes (De Janvry et al. (2012), Glewwe and Kassouf (2012))
- In 2008, a new stipend was introduced for disadvantaged families with youth aged 16 and 17 if enrolled in school
 - e.g., Reynolds (2015), Chitolina et al. (2016)
- Currently reaching 50 million people, it is the largest cash transfer program in the world (Kaufmann et al. (2015), Brollo et al. (2015))

Program Rules

- Two types of benefits:
 - **basic or unconditional:** for *extremely poor* families (*per capita* income up to 85 BRL), 85 BRL \approx 27 USD per month
 - **variable or conditional:** for *poor* families (*per capita* income up to 170 BRL), demographic composition (number of family members and their age) determines the final amount
 - up to 15 (BV15): 39 BRL (max. 5 per family)
 - age 16–17 (BVJ): 46 BRL (max. 2 per family)
- Exclusion rule:
 - eligibility to receive transfers until the end of the academic year (December 31st) of their 18th birthday
 - those turning 18 shortly after December 31st can remain in the program over the next year conditional on school enrollment, while those turning 18 slightly before are no longer qualified

Data

- *Cadastro Único* database (2014)
 - *Bolsa Família* Program's registry data
 - very rich individual and family characteristics
- BFP payroll data (2009–2015)
 - monthly information of **all** transfers to **all** beneficiaries
 - distinction between types of transfers: *basic* vs. *variable*
- School Census (2008–2014)
 - students' enrollment status and grade levels
- Higher Education Census (2009–2014)
- Brazilian matched employer-employee dataset, RAIS (2009–2015)
 - comprehensive formal labor market records
 - information on individual participation and wages

Sample Restriction

- Our first cohort: from the payroll data of December 2009, we recover individuals born between nov/1991 – feb/1992 who received the variable benefit in that month of reference
- Our initial full sample consists of **five** cohorts born between:
 1. nov/1991 – feb/1992 (payroll data from dec/2009)
 2. nov/1993 – feb/1994 (payroll data from dec/2011)
 3. nov/1994 – feb/1995 (payroll data from dec/2012)
 4. nov/1995 – feb/1996 (payroll data from dec/2013)
 5. nov/1996 – feb/1997 (payroll data from dec/2014)
- We match individuals in the full sample to the School Census using the following sequential linking variables:
 - a) name and date of birth
 - b) social identification (NIS)
 - c) name and mother's name
 - d) mother's name and date of birth
- Matching rate is about 80%, generating the **matched sample**

Regression Model

- Baseline specification:

$$y_{ik} = \alpha + f(a_{ik} - c) + \beta * 1[a_{ik} > c] + \gamma * 1[a_{ik} = 01/01] + \varepsilon_{ik}$$

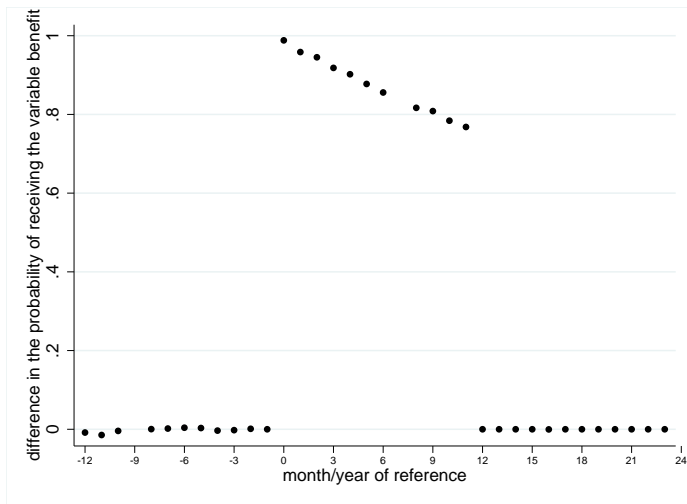
y_{ik} : outcome for individual i from cohort k
(education, labor market, self-sufficiency)

a_{ik} : date of birth

c : birthday cutoff after which i is eligible to receive
one additional year of the program

- β measures the effect of one additional year of exposure
- Triangular kernel, 30-days window, and linear slope
- Standard errors clustered at the birthday level

Compliance with Program Eligibility (Pooled Cohorts)



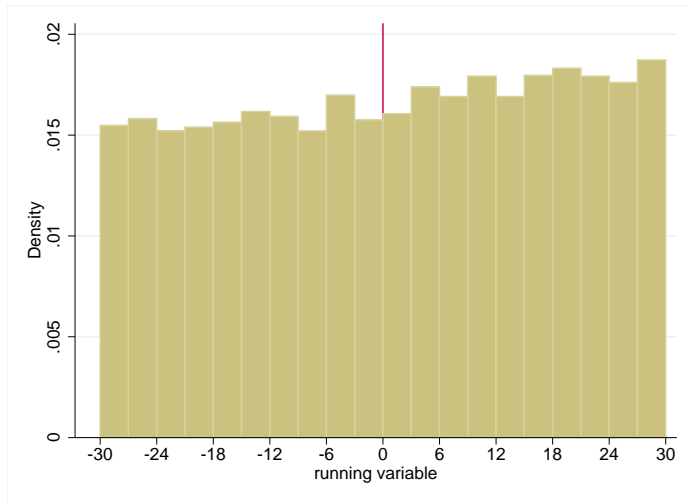
Only recipients turning 18 years old after January 1st are eligible for an extra year of cash transfer if they are enrolled in school.

Other Policies at the Cutoff?

- Confounding factors unlikely around the cutoff
 - but many states have **school starting age** relative to birth dates before/after December 31st
 - and could persist until age 18
- To address this concern, we restrict the **matched sample** to beneficiaries **born in the state of Rio de Janeiro** for which the school starting age is unrelated to the December 31st cutoff
 - further data availability on tests scores and enrollment (next steps)

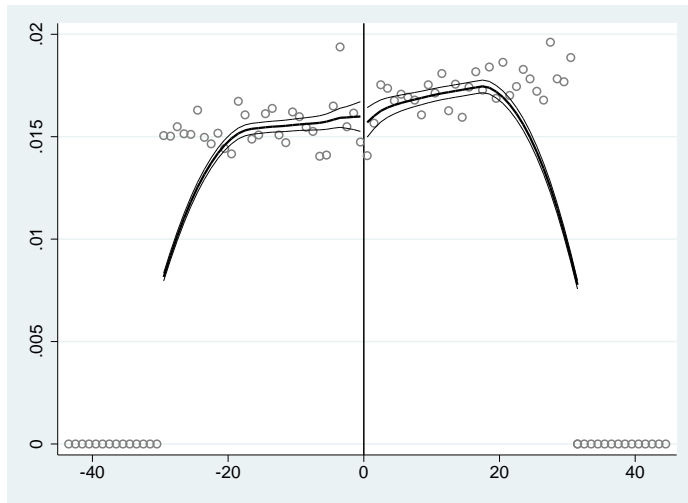
» checking school entry age

Density of Birthday Distribution (Pooled Cohorts)



Source: BFP payroll data

McCrary Density Test (Pooled Cohorts)



Source: BFP payroll data

Summary Statistics

	(1) Full Sample (BR)	(2) Full Sample (RJ)	(3) 30-Days Window (RJ)	(4) Matched Sample (RJ)
Individual Characteristics				
% female	0.49	0.49	0.49	0.49
% black	0.76	0.71	0.71	0.71
N	1,774,713	92,367	46,529	34,671
Household Characteristics				
% receive basic benefit	0.87	0.83	0.83	0.84
# benefits by family	2.58	2.46	2.46	2.45
registration year	2009.04	2009.13	2009.15	2009.2
% living in urban areas	0.7	0.91	0.91	0.91
per capita income	77.63	80.14	79.81	80.56
% child labor	0.03	0.01	0.01	0.01
% piped water	0.73	0.87	0.87	0.87
% electricity	0.93	0.96	0.96	0.96
# people	4.3	4.02	4.02	4.02
# rooms	4.6	4.22	4.22	4.25
N	1,774,713	92,367	46,529	34,671
Head of Household Characteristics				
% female	0.94	0.95	0.95	0.95
% lower sec. school	0.83	0.8	0.8	0.79
% dummy if works	0.41	0.45	0.45	0.45
N	1,666,562	87,637	44,074	32,933

Balancing Test of Several Characteristics

	(1)	(2)	(3)	(4)	(5)
	female	black	urban area	registration year	<i>per capita</i> income
extra year	0.0011 (0.0124)	-0.0031 (0.0108)	-0.0061 (0.0083)	0.1381 (0.1986)	-2.0919 (2.9014)
N	34,671	34,159	34,274	34,240	34,274
	pipel water	total family members	female (head)	elemendary school (head)	dummy if works (head)
extra year	-0.0120 (0.0093)	-0.0172 (0.0473)	-0.0036 (0.0058)	-0.0022 (0.0131)	0.0038 (0.0127)
N	33,446	33,186	32,933	30,350	29,589

Educational Outcomes

- Is there a higher educational attainment due to an extension eligibility in a cash transfer program?
- School Census:
 - enrollment information are annually collected in May and students' situation are reported by the end of the school year, in December
 - six possible status: pass, fail, abandonment, deceased, missing, and graduated
- Higher Education Census:
 - we are also able to track whether individuals went to college
- By combining information on enrollment and situation, we track individuals in years $t-1$, t , $t+1$, and $t+2$, and construct the following variables:
 1. indicator if not enrolled
 2. indicator if high school graduate
 3. indicator if educational attainment is elementary school
 4. indicator if educational attainment is high school
 5. indicator if individual is enrolled in college institution

Summary Statistics

	C1	C2	C3	C4	C5	Pooled
N initial	7,403	5,470	10,371	10,423	11,113	44,780
N available	6,182	5,455	10,011	10,316	10,877	42,841
% matched to School Census in t-1	0.87	0.85	0.82	0.82	0.86	0.84
N sample	5,391	4,653	8,218	8,448	9,332	36,042

Panel A: Education Level in Year t-1

% high school graduate	0.00	0.00	0.00	0.00	0.00	0.00
% not enrolled	0.00	0.00	0.00	0.00	0.00	0.00
% elementary school	0.53	0.50	0.45	0.45	0.40	0.46
% high school	0.47	0.50	0.51	0.53	0.56	0.52
% 1st year HS	0.23	0.26	0.26	0.28	0.26	0.26
%2nd year HS	0.21	0.21	0.23	0.23	0.27	0.24
%3rd year HS	0.02	0.01	0.02	0.02	0.02	0.02
% college education	0.00	0.00	0.00	0.00	0.00	0.00

Panel B: Year t

% high school graduate	0.01	0.01	0.01	0.01	0.01	0.01
% not enrolled	0.13	0.15	0.17	0.17	0.13	0.15
% elementary school	0.31	0.25	0.23	0.22	0.19	0.23
% high school	0.55	0.57	0.58	0.57	0.66	0.59
% 1st year HS	0.17	0.20	0.18	0.17	0.18	0.18
%2nd year HS	0.15	0.16	0.17	0.18	0.19	0.18
%3rd year HS	0.18	0.17	0.19	0.19	0.24	0.20
% college education	0.00	0.00	0.00	0.00	0.00	0.00

	C1	C2	C3	C4	C5	Pooled
Panel C: Year t+1						
% high school graduate	0.13	0.12	0.14	0.13	-	0.13
% not enrolled	0.30	0.33	0.33	0.33	-	0.32
% elementary school	0.14	0.11	0.10	0.10	-	0.11
% high school	0.40	0.40	0.39	0.41	-	0.40
% 1st year HS	0.10	0.07	0.05	0.06	-	0.07
%2nd year HS	0.08	0.09	0.09	0.09	-	0.09
%3rd year HS	0.10	0.11	0.11	0.13	-	0.12
% college education	0.02	0.03	0.03	0.03	-	0.03
Panel D: Year t+2						
% high school graduate	0.22	0.22	0.21	-	-	0.21
% not enrolled	0.45	0.46	0.46	-	-	0.46
% elementary school	0.06	0.05	0.04	-	-	0.05
% high school	0.23	0.22	0.22	-	-	0.22
% 1st year HS	0.04	0.02	0.02	-	-	0.03
%2nd year HS	0.05	0.03	0.03	-	-	0.04
%3rd year HS	0.05	0.05	0.06	-	-	0.06
% college education	0.04	0.05	0.06	-	-	0.05

Educational Outcomes

	(1)	(2)	(3)	(4)	(5)
	Outcomes				
	not enrolled	HS graduate	element. school	high school	college educat.
Panel A: Pooled Cohorts, Year t					
extra year	0.002 (0.010)	-0.003 (0.002)	0.009 (0.015)	-0.002 (0.014)	0.000 (0.001)
Mean of Dep. Var.	0.150	0.010	0.340	0.632	0.003
Observations	36,042	36,042	36,042	36,042	36,042
R-squared	0.003	0.000	0.008	0.007	0.001
Panel B: Pooled Cohorts, Year t+1					
extra year	-0.026* (0.013)	0.001 (0.011)	0.008 (0.016)	-0.011 (0.015)	0.004 (0.004)
Mean of Dep. Var.	0.329	0.134	0.301	0.522	0.029
Observations	26,710	26,710	26,710	26,710	26,710
R-squared	0.002	0.001	0.003	0.001	0.002
Panel C: Pooled Cohorts, Year t+2					
extra year	-0.007 (0.014)	-0.004 (0.015)	0.022 (0.019)	-0.019 (0.015)	-0.000 (0.007)
Mean of Dep. Var.	0.459	0.211	0.286	0.437	0.055
Observations	18,262	18,262	18,262	18,262	18,262
R-squared	0.001	0.000	0.002	0.001	0.003

Educational Outcomes by Gender

	(1)	(2)	(3)	(4)	(5)
	Outcomes				
	not enrolled	high school graduate	elementary school	high school	college education
Panel A: Pooled Cohorts (Male), Year t					
after	0.004 (0.012)	0.003 (0.003)	0.027 (0.019)	-	-0.001 (0.002)
Observations	18,113	18,113	18,113	-	18,113
R-squared	0.000	0.000	0.001	-	0.000
Panel B: Pooled Cohorts (Female), Year t					
after	0.001 (0.016)	-0.008** (0.003)	-0.011 (0.018)	-	0.001 (0.002)
Observations	17,929	17,929	17,929	-	17,929
R-squared	0.000	0.001	0.001	-	0.000
Panel C: Pooled Cohorts (Male), Year t+1					
after	-0.055*** (0.014)	0.018 (0.013)	0.005 (0.021)	-	0.001 (0.003)
Observations	13,404	13,404	13,404	-	13,404
R-squared	0.002	0.001	0.001	-	0.001
Panel D: Pooled Cohorts (Female), Year t+1					
after	0.001 (0.019)	-0.014 (0.014)	0.004 (0.020)	-	0.009 (0.007)
Observations	13,306	13,306	13,306	-	13,306
R-squared	0.000	0.000	0.000	-	0.000

Educational Outcomes by Gender (cont.)

	(1)	(2)	(3)	(4)	(5)
	Outcomes				
	not enrolled	high school graduate	elementary school	high school	college education
Panel E: Pooled Cohorts (Male), Year t+2					
after	-0.012 (0.020)	0.005 (0.019)	0.032 (0.026)	- -	-0.003 (0.006)
Observations	9,155	9,155	9,155	-	9,155
R-squared	0.001	0.000	0.001	-	0.000
Panel F: Pooled Cohorts (Female), Year t+2					
after	-0.009 (0.024)	-0.009 (0.017)	0.001 (0.021)	- -	0.006 (0.014)
Observations	9,107	9,107	9,107	-	9,107
R-squared	0.000	0.000	0.000	-	0.001

Labor Market Outcomes

- Welfare Programs:
 - supporters: essential for those who face barriers to labor market entry
 - opponents: perverse incentives to push them away from work as programs often require beneficiaries not be employed in the formal labor market
- In Brazil:
 - informality rates reach 33% of employed workers
 - limitation: we can only track individuals in the formal sector
- Is there an disincentive effect to work in the **formal sector** due to an extension eligibility in a cash transfer program?
- We track individuals from year t to year $t+6$ and construct the following variables:
 1. formal labor market participation
 2. earnings (in minimum wage) — if not working, zero

Labor Market Outcomes

	(1) year t	(2) year t+1	(3) year t+2	(4) year t+3	(5) year t+4	(6) year t+5	(7) year t+6
Panel A: Employment							
extra year	-0.0046 (0.0070)	-0.0340** (0.0162)	-0.0220 (0.0160)	-0.0110 (0.0240)	0.0287 (0.0256)	0.0477* (0.0266)	0.0222 (0.0289)
Mean of Dep. Var.	0.09	0.26	0.41	0.48	0.52	0.55	0.52
N	34,671	34,671	25,724	17,619	9,646	5,173	5,173
Panel B: Wage							
extra year	-0.0039 -0.0102	-0.0405* -0.022	-0.0372 -0.0275	-0.0218 -0.0376	0.0026 -0.0457	0.1239* -0.067	0.0524 -0.0621
Mean of Dep. Var.	0.09	0.32	0.54	0.67	0.77	0.9	0.84
N	34,671	34,671	25,724	17,619	9,646	5,173	5,173

Labor Market Outcomes by Gender

	(1) year t	(2) year t+1	(3) year t+2	(4) year t+3	(5) year t+4	(6) year t+5	(7) year t+6
Panel A: Employment (Women)							
extra year	-0.0116 (0.0085)	-0.0134 (0.0183)	-0.0181 (0.0191)	-0.0115 (0.0277)	0.02 (0.0403)	-0.0157 (0.0540)	-0.0481 (0.0515)
Mean of Dep. Var.	0.09	0.25	0.37	0.42	0.45	0.49	0.46
N	17,066	17,066	12,709	8,749	4,817	2,563	2,563
Panel B: Employment (Men)							
extra year	0.0022 (0.0100)	-0.0538** (0.0218)	-0.0278 (0.0237)	-0.0169 (0.0330)	0.0374 (0.0291)	0.1142*** (0.0320)	0.0959*** (0.0347)
Mean of Dep. Var.	0.1	0.26	0.45	0.54	0.58	0.61	0.57
N	17,605	17,605	13,015	8,870	4,829	2,610	2,610
Panel C: Wage (Women)							
extra year	-0.0145 (0.0142)	-0.0166 (0.0254)	-0.0098 (0.0332)	-0.0229 (0.0387)	0.0182 (0.0565)	0.0052 (0.0915)	-0.0588 (0.071)
Mean of Dep. Var.	0.08	0.3	0.46	0.55	0.62	0.69	0.68
N	17,066	17,066	12,709	8,749	4,817	2,563	2,563
Panel D: Wage (Men)							
extra year	0.0064 (0.0148)	-0.0633** (0.0312)	-0.0679* (0.0391)	-0.0331 (0.0605)	-0.0139 (0.0668)	0.2541** (0.1217)	0.1745* (0.0991)
Mean of Dep. Var.	0.1	0.33	0.62	0.79	0.93	1.09	1
N	17,605	17,605	13,015	8,870	4,829	2,610	2,610

Economic Self-Sufficiency Outcomes

- Transmission of poverty across generations as a major interest for both scholars and policy-makers
- Safety net programs to break this intergenerational transmission of poverty
 - lack of randomized experiments and data as major obstacles for researchers to evaluate these programs
- Could an eligibility extension for one additional year affect the probability of receiving any benefit from the cash program as a household head or for being extremely poor?
- We track individuals from year $t+1$ to year $t+6$
- Focus on **women** due to priority rules

Economic Self-Sufficiency Outcomes

	(1) year t+1	(2) year t+2	(3) year t+3	(4) year t+4	(5) year t+5	(6) year t+6
Panel A: Women						
extra year	-0.0019 (0.004)	0.001 (0.0077)	0.011 (0.0109)	-0.0213 (0.0193)	0.0171 (0.0236)	0.0381** (0.019)
Mean of Dep. Var.	0.01	0.03	0.06	0.11	0.13	0.17
N	17,066	12,709	8,749	4,817	2,563	2,563
Panel B: Men						
extra year	0.0005 (0.0011)	0.0007 (0.0017)	0.0004 (0.0037)	-0.0072 (0.0055)	-0.0125* (0.0066)	-0.0092 (0.0071)
Mean of Dep. Var.	0	0	0	0.01	0	0
N	17,605	13,015	8,870	4,829	2,610	2,610

What Comes Next?

- Very preliminary results, but suggestive evidence of insignificant effects on various education outcomes
 - results by gender
 - mechanisms behind this ineffectiveness using very detailed data from the Secretariat of Education (Rio de Janeiro):
 - attendance
 - cognitive measures
 - socioeconomic questionnaires
 - external validity
- Family labor supply
- Same empirical strategy for children aged up to 15
 - » quasi-experimental variation
- Results restricted to the youngest sibling

Final Remarks

- Targeting as a key feature for welfare programs
- Exploiting a sharp discontinuity induced by the exclusion rule of a very large cash transfer program in Brazil, we find:
 - Very small and positive effect on school enrollment;
 - No evidence of positive impacts on educational attainment or economic self-sufficiency;
 - Negative impact on formal labor market outcomes in the first year;
 - Suggestive evidence of heterogeneous effects by gender;
 - Next steps will investigate the mechanisms behind these results.

Discontinuities by State and by Cohort (Correct Grade)

	C1	C2	C3	C4	C5	C6	C7	C8	Pooled
AC	0.0787	0.0492	0.0166	0.0312	-0.0252	0.0129	-0.0113	-0.0040	0.0138
AL	-0.0153	-0.0004	-0.0043	0.0108	-0.0001	-0.0176	0.0109	0.0192	0.0012
AM	-0.0352*	0.0385	0.0216	0.0023	-0.0091	0.0370	-0.0316*	-0.0230	-0.0002
AP	-0.0793	0.0892	-0.0044	0.0577	0.1127**	0.1577***	0.1100***	0.2502***	0.0965***
BA	0.0004	-0.0013	-0.0286***	0.0035	0.0074	0.0086	-0.0043	0.0414***	0.0029
CE	-0.0445***	-0.0024	-0.0121	0.0095	0.0065	-0.0086	0.0176	0.0177	-0.0007
DF	-0.0126	-0.0074	0.0358	0.0310	0.0386	0.0257	-0.0415	0.0016	0.0099
ES	0.0974***	0.0293	0.0586**	0.0625*	0.1205***	0.0840***	0.1061**	0.1158***	0.0859***
GO	0.0420	0.0316**	0.0802***	0.0533***	0.0688***	0.0263	0.0690***	0.0624***	0.0547***
MA	-0.0148	0.0001	-0.0524***	-0.0146	-0.0178	-0.0155	-0.0067	-0.0008	-0.0154***
MG	0.0240*	0.0144	0.0260***	0.0760***	0.1069***	0.1140***	0.1330***	0.1528***	0.0850***
MS	-0.0015	0.0315	0.0242	0.0752***	0.0263	0.0425**	0.1354***	0.0649**	0.0542***
MT	0.0256	-0.0272	0.0103	0.0264	0.0685***	0.0694***	0.0447**	0.0490**	0.0355***
PA	-0.0107	-0.0036	-0.0218**	-0.0019	-0.0016	-0.0202	-0.0137	0.0261**	-0.0057
PB	0.0144	-0.0350*	0.0097	-0.0260	-0.0267	0.0061	-0.0011	0.0542**	0.0000
PE	0.0302***	-0.0128	0.0037	0.0024	0.0178**	-0.0072	0.0407**	0.0516**	0.0153***
PI	0.0103	-0.0066	0.0323**	0.0267	0.0295	-0.0040	-0.0131	-0.0079	0.0081
PR	0.1138***	0.1722***	0.1424***	0.1301***	0.1959***	0.2759***	0.2550***	0.2499***	0.1984***
RJ	-0.0101	-0.0003	-0.0212	0.0254*	0.0155	-0.0052	0.0000	-0.0011	0.0008
RN	0.0047	0.0080	-0.0243	-0.0047	0.0210	0.0319	-0.0341	-0.0482*	-0.0048
RO	0.0336	0.0536*	-0.0341	-0.0395	0.0015	0.1121***	0.0638*	0.0572**	0.0321***
RR	0.0312	0.0284	0.0569	-0.0408	-0.0412	-0.0169	-0.0100	0.0536	0.0075
RS	0.0237	0.0275*	0.0488***	0.0458***	0.0582***	0.0548***	0.0669***	0.0691***	0.0505***
SC	0.0979***	0.1249***	0.1824***	0.1565***	0.2098***	0.2215***	0.2100***	0.3032***	0.1970***
SE	-0.0159	-0.0305	0.0140	-0.0439**	-0.0613**	0.0038	0.0626***	0.0348	-0.0042
SP	0.0167*	0.0396***	0.0304**	0.0929***	0.1649***	0.2033***	0.2312***	0.2592***	0.1369***
TO	-0.0652*	0.0120	0.0118	0.0460	-0.0019	-0.0134	-0.0143	0.1011***	0.0142
Grade	3rd - HS	2nd - HS	1st - HS	8th - ES	7th - ES	6th - ES	5th - ES	4th - ES	
Year of Birth	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	

►► Mean of Dep. Var.

►► Number of Obs.

Focusing on Rio de Janeiro

	(1)	(2)	(3)	(4)
extra year	-0.0069*** (0.0018)	-0.0037 (0.0025)	-0.0061*** (0.0018)	-0.0021 (0.0028)
Observations	219,549	133,504	216,778	110,157
Sample	inc. federal	inc. federal	exc. federal	exc. federal
Cohort	All	All	All	All
Cohort FE	Yes	Yes	Yes	Yes
Kernel	Triangular	Triangular	Triangular	Triangular
Bandwidth	30 days	Optimal	30 days	Optimal

- most importantly, when we restrict the sample to recipients, we do **not** find any sharp differences around the cutoffs for education variables

» back

Discontinuities by State and by Cohort (Mean of Dep. Var.)

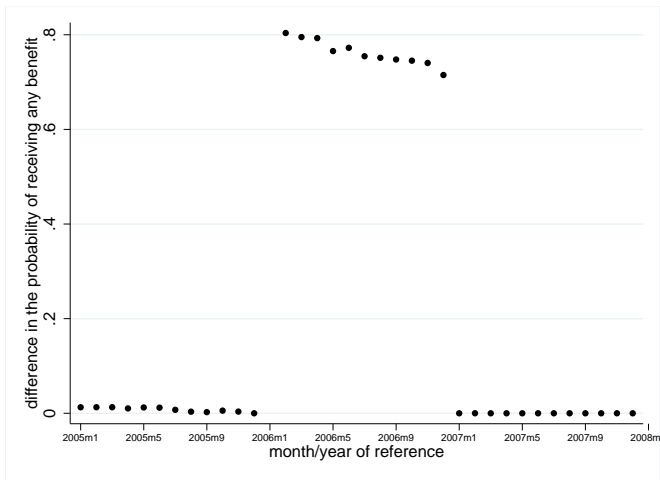
	C1	C2	C3	C4	C5	C6	C7	C8	Pooled
AC	0.22	0.25	0.3	0.29	0.29	0.32	0.37	0.4	0.31
AL	0.11	0.15	0.18	0.21	0.24	0.27	0.31	0.34	0.23
AM	0.18	0.21	0.25	0.25	0.27	0.32	0.37	0.43	0.29
AP	0.25	0.27	0.32	0.33	0.38	0.37	0.39	0.45	0.35
BA	0.17	0.19	0.23	0.22	0.25	0.29	0.35	0.34	0.26
CE	0.27	0.28	0.31	0.33	0.36	0.39	0.44	0.48	0.36
DF	0.27	0.27	0.32	0.38	0.4	0.46	0.55	0.57	0.42
ES	0.37	0.36	0.4	0.41	0.43	0.48	0.55	0.59	0.46
GO	0.33	0.34	0.4	0.42	0.43	0.47	0.52	0.5	0.43
MA	0.16	0.18	0.23	0.25	0.28	0.33	0.37	0.41	0.28
MG	0.43	0.43	0.45	0.46	0.47	0.51	0.58	0.62	0.5
MS	0.24	0.24	0.27	0.27	0.28	0.33	0.36	0.37	0.3
MT	0.29	0.31	0.32	0.3	0.34	0.41	0.48	0.51	0.38
PA	0.13	0.15	0.18	0.2	0.22	0.26	0.3	0.34	0.23
PB	0.15	0.17	0.21	0.21	0.24	0.28	0.33	0.34	0.25
PE	0.2	0.2	0.23	0.25	0.27	0.32	0.38	0.39	0.28
PI	0.14	0.16	0.2	0.23	0.24	0.28	0.33	0.35	0.24
PR	0.39	0.33	0.34	0.32	0.36	0.41	0.44	0.4	0.38
RJ	0.26	0.27	0.33	0.35	0.39	0.45	0.53	0.58	0.4
RN	0.2	0.2	0.21	0.21	0.22	0.26	0.34	0.36	0.25
RO	0.26	0.27	0.32	0.33	0.32	0.4	0.46	0.49	0.36
RR	0.3	0.35	0.39	0.37	0.4	0.43	0.5	0.58	0.43
RS	0.29	0.28	0.36	0.36	0.39	0.47	0.54	0.56	0.41
SC	0.48	0.4	0.42	0.42	0.42	0.47	0.5	0.51	0.45
SE	0.13	0.15	0.19	0.19	0.22	0.26	0.33	0.36	0.23
SP	0.55	0.57	0.65	0.68	0.66	0.68	0.69	0.73	0.66
TO	0.25	0.27	0.3	0.36	0.38	0.44	0.47	0.51	0.39
Grade	3rd - HS	2nd - HS	1st - HS	8th - ES	7th - ES	6th - ES	5th - ES	4th - ES	-
Year of Birth	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	back

Discontinuities by State and by Cohort (Number of Obs.)

	C1	C2	C3	C4	C5	C6	C7	C8	Pooled
AC	1,628	1,682	2,091	2,048	2,221	2,422	2,602	2,583	17,277
AL	6,714	7,493	8,935	9,397	9,468	9,927	10,058	9,913	71,905
AM	7,494	8,059	9,807	10,077	10,948	10,994	11,142	11,635	80,156
AP	1,253	1,336	1,599	1,623	1,692	1,682	1,938	2,055	13,178
BA	35,167	37,675	42,235	42,515	43,116	44,062	39,460	37,002	321,232
CE	18,391	18,874	23,858	24,423	23,133	28,010	26,027	24,687	187,403
DF	4,323	5,261	5,897	6,460	6,719	7,190	7,161	7,414	50,425
ES	5,423	6,518	7,338	7,612	7,773	8,762	8,537	8,150	60,113
GO	8,683	10,595	11,116	11,318	11,415	11,919	12,008	11,652	88,706
MA	18,141	18,920	21,629	21,067	22,575	22,291	23,737	23,275	171,635
MG	38,243	42,725	45,720	48,166	48,306	52,154	50,912	50,541	376,767
MS	4,114	5,254	6,005	6,701	6,726	7,387	7,162	6,593	49,942
MT	5,362	6,132	6,944	7,049	7,367	7,730	7,611	7,312	55,507
PA	18,556	19,703	23,520	23,199	25,125	25,070	25,322	25,328	185,823
PB	8,172	8,810	10,488	10,421	9,735	11,417	10,508	10,217	79,768
PE	19,058	19,476	22,529	22,822	21,258	23,570	22,886	21,086	172,685
PI	9,001	8,823	10,162	9,538	9,791	10,987	10,372	10,013	78,687
PR	17,570	23,267	25,382	26,999	26,575	29,250	28,067	27,463	204,573
RJ	25,864	27,627	30,128	32,748	31,352	34,082	32,630	30,982	245,413
RN	6,028	6,721	7,386	7,989	7,828	8,916	7,728	7,582	60,178
RO	3,437	3,986	4,185	4,505	4,870	5,033	4,990	5,044	36,050
RR	743	925	1,026	1,047	1,092	1,271	1,171	1,368	8,643
RS	19,259	25,029	25,269	26,008	26,429	29,317	27,450	26,959	205,720
SC	8,378	11,783	12,880	14,097	14,477	16,211	15,338	14,804	107,968
SE	4,080	4,554	5,191	5,426	5,649	5,719	5,427	5,478	41,524
SP	74,318	80,780	84,333	89,431	88,332	94,212	94,771	95,208	701,385
TO	2,639	3,197	3,701	3,940	4,355	4,517	4,407	4,595	31,351
Grade	3rd - HS	2nd - HS	1st - HS	8th - ES	7th - ES	6th - ES	5th - ES	4th - ES	
Year of Birth	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	

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Compliance with Program Eligibility



Recipients of variable benefits (up to 15) born between dec/1989 and jan/1990

Related Literature

- Social Welfare Programs
 - medium- and long-term impacts in the U.S.: Aizer et al. (2016), Hoynes et al. (2016), Price and Song (2016)
 - youth: Humlum and Vejlín (2013), Deshpande (2016a, 2016b)
 - cash transfers and economic outcomes: Gertler (2004), Schultz (2004), de Janvry et al. (2006), Bobonis and Finan (2009), Fiszbein et al. (2009), De Brauw and Hoddinott (2011), De Janvry et al. (2012), Dubois et al. (2012), Gertler et al. (2012), Glewwe and Kassouf (2012)
- Targeting: de Janvry et al. (2006), Ravallion (2009), Alatas et al. (2012)
- Childhood vs. Youth Investments
 - few evidence of positive impacts for disadvantaged youth: Cook et al. (2014), Oreopoulos et al. (2014), Heller et al. (2016)
 - early childhood interventions: Heckman and Carneiro (2003), Heckman (2006), Heckman et al. (2013)