

Bonus skills: Examining the effect of an unconditional cash transfer on child development

Jason Gaitz and Stefanie Schurer

School of Economics
The University of Sydney
and
ARC Centre for Excellence (Lifecourse Centre)
NHMRC Centre for Research Excellence EMPOWER

21 July 2017



ARC Centre of Excellence for Children and Families over the Life Course

Aim

- 1 Examine the causal impact of an unconditional transfers on child development;
- 2 Exploit information on the Australian Baby Bonus (ABB) which (initially) provided families with a new-born child with \$3000 cash handout;
- 3 Understand the heterogeneity in the the impact of ABB;
- 4 Understand the mechanisms.

The analysis is conducted with high-quality, longitudinal child cohort data (LSAC) and a D-i-D modelling approach.

Preview of findings

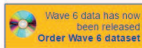
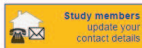
- 1 No **positive impact** – on average – of ABB on cognitive, socioemotional or physical health outcomes;
- 2 If anything, negative impact on socioemotional outcomes for boys and **physical outcomes for girls and children from low SES**;
- 3 No impact of ABB on parenting behaviour and parental wellbeing (potential channels);
- 4 Conclusion: non-targeted and not permanent structure of ABB may be the reason for lack of impact.

Literature

- Family income and child development (Fletcher & Wolfe 2016, Khanam & Nghiem 2016, Adhvaryu et al. 2015, Deckers et al. 2015, Delaney & Doyle 2012)
- Cash transfers and child development (Mullins 2017, Dahl & Lochner 2012, Duncan et al. 2011, Akee et al. 2015)
- Baby Bonus and maternal labor supply (Gonzalez, 2013), child health/care utilisation (Gonzalez, 2017)
- Effectiveness of Australian Baby Bonus:
 - School achievement (Deutscher & Brunig 2017)
 - Fertility (Einarsdottir et al. 2012, Drago et al. 2011, Lain et al. 2010 Gans & Leigh 2009)

Growing Up in Australia: The Longitudinal Study of Australian Children

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is a major study following the development of 10,000 children and families from all parts of Australia. The study commenced in 2004 with two cohorts - families with 4-5 year old children and families with 0-1 year old infants. *Growing Up in Australia* is investigating the contribution of children's social, economic and cultural environments to their adjustment and wellbeing. A major aim is to identify policy opportunities for improving support for children and their families and for early intervention and prevention strategies.



Complete your survey online!

For Wave 8, 18-19 year olds have the opportunity to complete part of their interview online. By completing some of your questions online you will help to make your home interview shorter.

News & latest publications

[New website for study participants](#) Its full of interesting information about the study, and shows how the data we collect is used and the impact it has on improving the lives of Australian kids now and into the future.

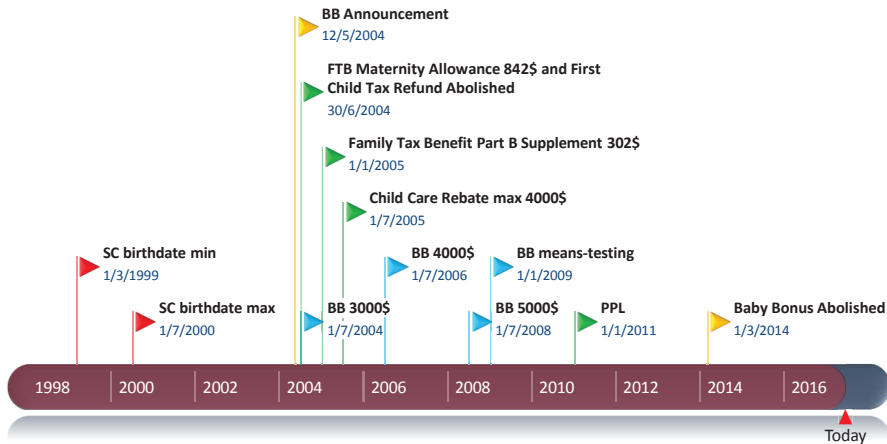
[November 2016 Newsletter](#)

Study News LSAC Annual Statistical Report 2014; Wave 6 design phase; Wave 7 home visits. **In the Media, Publications:** Recent papers using LSAC data; Flosse research database. **Resources for data users:** LSAC data user workshops; Online resources.

[Longitudinal Study of Australian Children Annual Statistical Report 2015](#)

Using five waves of LSAC data, this report covers a variety of aspects of the ways in which Australian children's experiences and environments affect their prospects and progress, from birth to 13 years old.

Figure: Institutional set up of the Australian Baby Bonus



Control group sibling born
7/1/2002 - 6/30/2004

Treatment group sibling born
7/1/2004 - 6/30/2006

Table: Summary Statistics

	Treatment	Control	p-value	N
Panel A: Demographic Characteristics				
Annual Family Income	66608	70389	0.348	480
Mother's Age	32.393	33.705	0.000	515
Mother Completed Year 12	0.664	0.714	0.224	516
Father Completed Year 12	0.579	0.587	0.855	494
Mother's Weekly Work Hours	14.348	13.900	0.737	516
Father's Weekly Work Hours	43.534	42.825	0.627	516
Sibling's Age Difference (Days)	2065	1293	0.000	479
Study Child's Age (Months)	56.676	56.353	0.154	516
Male	0.579	0.580	0.982	516
Child was Firstborn	0.810	0.941	0.000	516
Number of Siblings	0.794	1.067	0.000	516
ATSI	0.016	0.022	0.613	516
Both Biolog. Parents	0.951	0.963	0.525	516
Low Birth Weight	0.061	0.059	0.953	516

Table: Summary Statistics

	Treatment	Control	p-value	N
Panel B: Parental Investment				
Housing Tenure	0.109	0.097	0.638	516
Over 30 Books at Home	0.879	0.896	0.535	516
Has a Computer at Home	0.781	0.766	0.673	516
Panel C: Family Stress				
Mother is in Excellent Health	0.147	0.160	0.698	462
Father is in Excellent Health	0.104	0.099	0.869	424
Mother's Parenting Style	4.471	4.414	0.126	515
Father's Parenting Style	4.076	4.153	0.134	425
Depression Scale of Mothers	4.366	4.333	0.542	461
Depression Scale of Fathers	4.458	4.373	0.125	409
Panel D: Neighborhood Effects				
Neighborhood Facilities	1.964	1.969	0.936	516
% Residents Compl. Year 12	39.814	43.093	0.005	516
% of Residents Speak English	86.494	86.227	0.809	516

Empirical Strategy

$$\Delta h_{it}^k = \gamma_0^k + \gamma_1^k \text{Bonus}_i + \gamma_2^k X'_i + \varepsilon_{it}, \quad (1)$$

- Δh_{it}^k : change in individual i 's outcome between wave 1 (age 4-5) and wave 3 (age 8-9);
- k : learning, socio-emotional or physical outcomes;
- Bonus_i : binary indicator = 1 if the family received the \$3000 baby bonus, 0 otherwise;
- X'_i : vector of pre-treatment variables (maternal age, first born, number of siblings, age, age difference between SC and sibling, gender, main language spoken at home, percentage of residents in the study child's region that completed secondary education).

Modelling assumptions

- 1 The treatment and control groups must be on the same trend pre-treatment.
- 2 There were no other contemporaneous or past shocks to the treatment group aside from treatment.

We cannot test 1., but reasonable to assume as true. We are able to rule out eg that ABB affect probability to receive more family-related transfers. (Parenting Payment Partnered (-0.10), Parenting Payment Single (-0.010), Carer Allowance (-0.093))

Table: Estimation Rules: Impact of ABB on Child Development

	OLS (1)	OLS (2)	VA (3)	D-i-D (4)	D-i-D (5)
<i>Panel A. Learning Outcomes (N=244/260)</i>					
Treat	-0.059 (0.089)	0.014 (0.21)	-0.035 (0.18)	0.047 (0.091)	0.26 (0.18)
<i>Panel B. Social/Emotional Outcomes (N=218/231)</i>					
Treat	-0.17 (0.095)	-0.19 (0.21)	-0.23 (0.17)	-0.14 (0.094)	-0.23 (0.18)
<i>Panel C. Physical Outcomes (N=245/260)</i>					
Treat	-0.080 (0.091)	-0.22 (0.23)	-0.31 (0.20)	-0.16 (0.098)	-0.69 (0.21)
Controls	N	Y	Y	N	Y

Notes: All outcome measures are standardized with mean 0 and standard deviation 1. Standard errors in parentheses.

Table: Impact of ABB on Physical Health Components

	Parent-assess. Child Health (1)	Special Health Care Needs (2)	BMI (3)	Gross Motor Skills (4)
Treat	0.29 (0.19)	-0.082 (0.21)	-0.21 (0.202)	-0.13 (0.25)
Observations	505	505	284	413

Notes: Each outcome has been standardized to have mean 0 and standard deviation 1. Standard errors in parentheses. All models are estimated using a difference-in-difference strategy with baseline controls. Column (1) Parent-assessed measure of child health health problems; Column (2) child had any special health child needs; Column (3) Body Mass Index (BMI); Column (4) PEDS QL physical health sub-scale.

Table: Impact of ABB on School Achievement (NAPLAN)

	Year 3 (1)	Year 5 (2)	Year 7 (3)
<i>Panel A. Reading</i> (N=352/436/416)			
Treat	-0.13 (0.25)	-0.054 (0.19)	-0.16 (0.20)
<i>Panel B. Writing</i> (N=353/436/416)			
Treat	0.26 (0.21)	-0.025 (0.20)	0.017 (0.22)
<i>Panel E. Numeracy</i> (N=350/437/419)			
Treat	-0.11 (0.21)	0.059 (0.19)	-0.11 (0.20)

Notes: Each outcome has been standardized to have mean 0 and standard deviation 1. Standard errors in parentheses. OLS model with baseline controls.

Table: Long-Term SDQ Results

	Wave 3 (1)	Wave 4 (2)	Wave 5 (3)
<i>Panel A. Pro-Social Scale</i>			
Treat	0.15 (0.22)	0.050 (0.18)	0.20 (0.22)
<i>Panel B. Hyperactivity Scale</i>			
Treat	0.33 (0.19)	0.057 (0.19)	0.056 (0.21)
<i>Panel C. Emotional Symptoms Scale</i>			
Treat	0.024 (0.19)	-0.077 (0.19)	-0.0017 (0.20)
<i>Panel D. Peer Problems</i>			
Treat	0.41 (0.21)	0.52 (0.19)	0.37 (0.22)
<i>Panel E. Conduct Problems</i>			
Treat	0.24 (0.22)	0.071 (0.17)	-0.17 (0.20)

Notes: Each outcome has been standardized to have mean 0 and standard deviation 1. Standard errors in parentheses. Difference-in-difference

Table: Robustness check on baseline specification

	Base- line (1)	Smaller birth window (2)	Two child. only (3)	NL Sib.-age differ. (4)	Control newborn (5)	Control transfer (6)	Excl. June July 04 (7)	Control Attrition (8)
<i>Panel A. Learning Outcomes</i>								
Treat	0.26 (0.18)	0.31 (0.22)	0.49 (0.29)	0.24 (0.17)	0.27 (0.18)	0.26 (0.18)	0.35 (0.19)	0.32 (0.22)
<i>Panel B. Social/Emotional Outcomes</i>								
Treat	-0.23 (0.18)	-0.18 (0.22)	-0.41 (0.60)	-0.25 (0.18)	-0.21 (0.18)	-0.24 (0.18)	-0.20 (0.19)	-0.21 (0.22)
<i>Panel C. Physical Outcomes</i>								
Treat	-0.69 (0.21)	-0.52 (0.25)	-1.12 (0.48)	-0.66 (0.22)	-0.68 (0.21)	-0.68 (0.21)	-0.73 (0.22)	-0.59 (0.22)

Notes: Each outcome has been standardized to have mean 0 and standard deviation 1. Standard errors in parentheses. Difference-in-difference model with basic controls for the baseline controls.

Table: Mechanisms

	Treat	Base $P(x)$	N
<i>Panel A. Parental Investment</i>			
Housing Tenure (1 = Owned Outright)	0.0076 (0.056)	0.1027	505
Over 30 Books at Home (1 = Yes)	0.032 (0.084)	0.8876	516
Computer at Home (1 = Yes)	-0.042 (0.077)	0.7733	505
<i>Panel B. Household Environment</i>			
Not Comfortable Financially (1 = Yes)	-0.016 (0.037)	0.0271	505
Can Raise \$2000 Quickly (1 = Yes)	0.21 (0.073)	0.8112	491
Anger and Hostility in the Household (1 = Yes)	-0.15 (0.13)	-	368

Notes: Standard errors in parentheses. Difference-in-difference models with baseline controls.

Table: Mechanisms

	Treat	Base $P(x)$	N
<i>Panel C. Parental Health</i>			
Stressful Life Events Index	0.023 (0.17)	-	505
Mother in Excellent Health (1 = Yes)	0.095 (0.082)	0.1976	411
Father in Excellent Health (1 = Yes)	0.02 (0.12)	0.2158	312
Mother's Depression Scale	0.022 (0.21)	-	505
Father's Depression Scale	0.04 (0.21)	-	505
<i>Panel D. Parenting Style</i>			
Mother's Parenting Style	-0.062 (0.21)	-	449
Father's Parenting Style	-0.22 (0.25)	-	311

Notes: Standard errors in parentheses. Difference-in-difference models with baseline controls.

Table: Mechanisms - Mother's Labour Supply

	OLS (1)	OLS (2)	Diff-in- Diff (3)	Diff-in- Diff (4)
<i>Panel A. Entire Sample</i>				
Treat	-4.28 (1.36)	-8.24 (2.93)	-4.15 (1.37)	-4.79 (3.03)
<i>Panel B. Narrow Birth Window</i>				
Treat	-3.04 (1.51)	-8.19 (3.52)	-3.05 (1.50)	-5.98 (3.31)
<i>Panel C. Two Children</i>				
Treat	0.76 (2.20)	-11.9 (8.64)	-7.07 (2.64)	-3.49 (5.20)
Controls	N	Y	N	Y

Notes: Standard errors in parentheses. The mother's labour supply is measured in the amount of weekly hours worked. Panels A reports the results for the entire sample. Panel B reports results for a restricted sample where the treatment group has siblings born in the narrower birth window of July 1st 2004 to July 1st 2005. Panel C reports results from a restricted sample of only two children in the household. Observations (Panel A/Panel B/Panel C) = 505/300/285

Table: Other Government Payments

	Treatment	Control	<i>p</i> -value of diff.	N
Panel A. Pre-Treatment				
Parenting Payment Partnered	0.162	0.119	0.162	516
Parenting Payment Single	0.036	0.026	0.499	516
Carer Allowance	0.045	0.033	0.518	516
New Start Allowance	0.016	0.011	0.624	516
Disability Pension	0.008	0.015	0.469	516
Other Government Allowances Payments	0.008	0.022	0.184	516
Family Tax Benefit or Family Payment	0.749	0.751	0.960	516
Panel B. Post-Treatment				
Parenting Payment Partnered	0.184	0.104	0.011	504
Parenting Payment Single	0.033	0.066	0.086	504
Carer Allowance	0.078	0.027	0.011	504
New Start Allowance	0.012	0.008	0.605	498
Disability Pension	0.021	0.012	0.426	498
Other Government Allowances Payments	0.016	0.000	0.045	504
Family Tax Benefit or Family Payment	0.567	0.452	0.009	504

Notes: All government payments are binary variables (1=Individual received the payments, 0=individual did not receive the payment. *p*-values are reported for the pre-treatment (wave_one) statistical difference between the treatment and control groups.

Table: Heterogeneous Effects - Gender

	Learning (1)	Social/ Emotional (2)	Physical (3)
Treat (Base = Female)	0.32 (0.21)	-0.0012 (0.22)	-0.70 (0.24)
Male	0.46 (0.13)	0.21 (0.13)	0.092 (0.14)
Treat x Male	-0.098 (0.18)	-0.40 (0.19)	-0.023 (0.20)

Notes: All results are standardised to have a mean of 0 and a standard deviation of 1. Standard errors in parentheses. Each model is estimated using a difference-in-difference strategy with baseline controls.

Table: Heterogeneous Effects - Income

	Learning (1)	Social/ Emotional (2)	Physical (3)
<i>Panel A. Entire Sample</i>			
Treat (Base = Tercile 1 of Income)	0.25 (0.24)	-0.28 (0.24)	-0.91 (0.25)
Treat x Tercile 2 of Income	-0.20 (0.24)	0.035 (0.25)	0.46 (0.24)
Treat x Tercile 3 of Income	0.35 (0.24)	0.099 (0.24)	0.094 (0.25)

Notes: All results are standardised to have a mean of 0 and a standard deviation of 1. Standard errors in parentheses. Each model is estimated using a difference-in-difference strategy with baseline controls.

Table: Dynamic Complementarity

	Learning (1)	Social- Emotional (2)	Physical (3)
Treat (Base = Tercile 1 of Initial Skills)	0.26 (0.23)	-0.12 (0.23)	-0.69 (0.23)
Treat x Tercile 2 of Initial Skills	-0.13 (0.23)	-0.31 (0.25)	0.37 (0.22)
Treat x Tercile 3 of Initial Skills	0.15 (0.22)	-0.059 (0.24)	0.20 (0.22)

Notes: All results are standardised to have a mean of 0 and a standard deviation of 1. Standard errors in parentheses. Each model is estimated using a difference-in-difference strategy with baseline controls.