

Appendix 3: Summary tables of studies by outcome

Table A2: Studies examining the effect of income on children’s social, emotional and behavioural outcomes

Study	Country	Method	Source of variation in money	Negative effect	No effect	Positive effect	Non-linear effect?	Notes
<i>Milligan and Stabile (2011)</i>	Canada	Quasi-experimental	Variation in child benefit.		Prosocial behaviour	Hyper-activity-inattention score, emotional disorder-anxiety score, conduct-disorder-physical aggression score. Also indirect aggression score for girls from lower education backgrounds.	Effects mostly stronger for whole sample apart from results for indirect aggression which is only significant for girls from low education background.	
<i>Dooley and Stewart (2007)</i>	Canada	Observational	Variation in income within households.		No effect on behavioural problems as reported by teacher and parent ¹ .	Improvement in child-reported behavioural problems.	Whole sample only.	They control for parenting which is likely to be a mechanism.
<i>Manley, Fernald and Gertler (2015)</i>	Mexico	Quasi-experimental	Oportunidades conditional cash transfer.		No effect on behavioural problems		Low income sample.	

¹ Behavioural scores taken from 5 - 8 questions on four problem areas: hyperactivity disorder, conduct disorder, emotional disorder and property offense. A higher score on a question means the event occurs more often/ a higher aggregate score means more behavioural/emotional problems. Reported by teacher for ages 4 - 11, parent for 4 -11 and child for 11- 15.

Study	Country	Method	Source of variation in money	Negative effect	No effect	Positive effect	Non-linear effect?	Notes
					measured by SDQ ² .			
<i>Fernald, Gertler and Neufeld (2009)</i>	Mexico	Quasi-experimental	Oportunidades conditional cash transfer.			Reduced number of behavioural problems measured by SDQ.	Low income sample/	Looking at long-term effects of the programme after 8-10 years.
<i>Zachrisson and Dearing (2015)</i>	Norway	Observational	Variations in income within households.			Decreases in internalizing and externalizing problems ³	Found the effect was bigger for lower income families.	The effect size was similar for those who experienced gains and losses.
<i>Cesarini et al (2016)</i>	Sweden	Quasi-experimental	Lottery winnings.		No effect on armed forces psychological assessment.		Whole sample only.	Use three different lotteries. Sample is of males only.
<i>Wickham et al (2017)</i>	UK	Observational	Variations in income within households.			Transitions into poverty increased odds of behavioural problems (SDQ).	Focus on low income.	
<i>Fitzsimons et al (2017)</i>	UK	Observational	Variations in income within households.			Moving into poverty associated with worse externalising conduct (SDQ) score at age 11.	Focus on low income.	They control for potential mechanisms (parental mental health and bedtimes) so likely to be underestimating effect.

² Strengths and Difficulties Questionnaire.

³ Measured using mother reported Child Behaviour Checklist.

Study	Country	Method	Source of variation in money	Negative effect	No effect	Positive effect	Non-linear effect?	Notes
<i>Violato et al (2011)</i>	UK	Observational	Variations in income within households.		No effect on behavioural problems ⁴		Breaks down sample into one and two parent households.	Controls for mechanisms e.g. maternal depression and parenting behaviours.
<i>Hamad and Rehkopf (2015)</i>	US	Quasi-experimental	Variation in EITC.			Reduced behavioural problems at the 2 year follow up ⁵ .	Low income sample.	Effects on behavioural problems were no longer significant at the 4 year follow up.
<i>Gennetian and Miller (2002)</i>	US	Randomised controlled trial	Evaluation of Minnesota Family Investment Program		Social competence subscale, autonomy subscale	Positive behaviour and compliance subscale. Behavioural Problems Index (BPI), and externalising and internalising subscales only marginally significant. ⁶	Low income sample.	
<i>Morris and Gennetian (2003)</i>	US	Randomised controlled trial.	Evaluation of Minnesota Family		No effect on problem behaviour. Marginally		Low income sample.	

⁴ Behavioural problems measured At ages 3 and 5 by mothers report using the Strengths and Difficulties questionnaire - a Total Difficulty Score was generated by summing the scores from the emotional, conduct, peer problems and hyperactivity subscales.

⁵ Behavioural outcomes measured using Behavioural Problems Index (BPI) 29 item questionnaire measuring behavioural problems in 6 domains - antisocial behaviour, headstrongness, hyperactivity, immature dependency, peer conflict and anxiousness/depression. The score is normalised to account for typical changes in the score.

⁶ Included these results as significant but note that the authors do not distinguish between significance levels of at 5% and 10%.

Study	Country	Method	Source of variation in money	Negative effect	No effect	Positive effect	Non-linear effect?	Notes
			Investment Program.		significant Increase in positive social behaviour.			
<i>Akee et al (2010)</i>	US	Quasi-experimental	Casino profits distributed to all adult tribal members in Eastern Cherokee reservation.		Any crime age 18-19 and 20-21, ever committed a moderate crime by age 21, ever committed a violent crime by age 21.	Reduction in any crime committed age 16-17, ever committed any crime by age 21 and ever dealt drugs by 21.	Greatest impact on poorest households and no significant effect on households not previously in poverty, apart from for drug dealing.	
<i>Costello et al (2003)</i>	US	Quasi-experimental	Casino profits distributed to all adult tribal members in Eastern Cherokee reservation.			Reduction in total number of psychiatric symptoms and emotional and behavioural psychiatric symptoms ⁷ for children who moved out of poverty.	No effect on never-poor families and persistently poor families.	
<i>Dearing, McCartney</i>	US	Observational	Variation in income within families.		No effect on internalizing problems.	Reduction in externalizing problems.	Significantly larger effect for children	Outcomes measured using two versions of

⁷ Measured using the child and Adolescent Psychiatric Assessment - structured interview with both children and parents. Results in 2 categories - emotional disorder and behavioural disorder

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<i>and Taylor (2006)</i>							who were chronically poor.	Child Behaviour Checklist reported by teacher/childcare provider.
<i>Votruba-Drzal (2006)</i>	US	Observational	Variation in income within households.			Improvement in behavioural problems ⁸	Whole sample only.	Timing of income - middle childhood income had a significant impact on change in middle childhood behaviour problems, but early childhood income was only significant for the residualised change model. Home environment was found to mediate the impact of income on both maths/ reading skills and behaviour problems.

⁸ Behavioural problems reported by parent using the Behavioural Problems Index (BPI).