

# The Impact of Microcredit on Child Education: Quasi-experimental Evidence from Rural China

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## Online Appendix

The estimation results for constructing the forcing variable are presented in [Table A1](#).

**Table A1.** Correlates of the probability of borrowing RCCs

Independent variable	2000	2004
	(1)	(2)
Hh size	-0.009 (0.060)	-0.064 (0.068)
No. of members not living in the household	-0.055 (0.091)	0.048 (0.078)
No. of employed members	-0.108 (0.080)	-0.067 (0.215)
Average education of household members	0.176 (0.077)**	-0.119 (0.127)
Average age of household members	-0.011 (0.009)	0.008 (0.005)
Household wealth status within the village	0.044 (0.069)	-0.069 (0.055)
Quality of housing	-0.092 (0.078)	0.083 (0.081)
Share of irrigated land	0.599 (0.411)	-0.184 (0.210)
Whether borrowing RCCs for child education (yes = 1)	0.603 (0.125)***	0.548 (0.087)***
Whether household income was sufficient in the past year (yes = 1)	-0.239 (0.083)***	-0.235 (0.065)***
Ln(informal credits)	-0.096 (0.044)**	-0.173 (0.090)*
Village dummies	Yes	Yes
R <sup>2</sup>	0.236	0.134

Notes: \*\*\*, \*\* and \* denote 1 per cent, 5 per cent and 10 per cent significance levels in turn. Heteroscedasticity-robust standard errors are in parentheses. Village dummies and the constants are not reported.

Table A2 includes the results of standard IV estimation of Equation (10). The standard IV estimation overall yields consistent results as the CF estimation under the FRD framework. However, as suggested by Van der Klaauw (2008), IV estimation easily yields larger standard errors than FRD. Specifically, the static IV analysis shows that borrowing RCCs narrows educational gap in both years (columns 1–2 of Table A2), but the estimator in 2000 is insignificant compared with significant impact in CF estimation (columns 2–3 of Table 4). Insignificantly positive and negative effects on average scores in 2000 and 2004 (columns 3–6 of Table 5), respectively, can also be confirmed by IV estimation (columns 4–5 of Table A2). Dynamically, previous borrowing in 2000 could help narrow schooling gap and improve academic performance, while immediate outcome of borrowing behaviour in 2004 might have aggravated schooling gap and decrease children’s average scores (columns 3 and 6 of Table A2). This is consistent with our findings in the dynamic FRD in columns 1–3 and 5–6 of Table 6, while IV estimators are insignificant due to large standard errors.

**Table A2.** Standard IV estimation of causal impact of RCCs on child education

Independent variables	Schooling gap			Average scores		
	2000	2004	2004	2000	2004	2004
	(1)	(2)	(3)	(4)	(5)	(6)
$\hat{\theta}_0$	-5.430 (7.872)	-0.039 (1.758)	1.150 (1.070)	8.574 (29.275)	-11.740 (12.203)	-4.899 (8.585)
$\hat{\theta}_1$			-0.539 (0.600)			5.332 (5.311)
Child’s characteristics						
Age	0.526*** (0.153)	0.402*** (0.124)	0.508** (0.219)	-0.944 (0.601)	0.012 (1.159)	1.503 (1.843)
Gender	0.050 (0.271)	0.514*** (0.191)	0.028 (0.422)	-0.414 (1.265)	-3.701** (1.754)	-4.189 (3.569)
Health status	-0.161 (0.144)	0.073 (0.130)	0.049 (0.227)	-0.569 (0.573)	-0.322 (1.193)	-1.804 (2.454)
Ethnic minority	0.535 (1.231)	-0.507 (0.790)	-0.467 (1.646)	-13.141 (10.601)	1.200 (4.838)	-2.747 (11.693)
Birth order	0.606 (0.484)	0.125 (0.204)	0.113 (0.446)	0.297 (1.805)	-4.105* (2.365)	-12.715*** (4.264)
Child labour	-0.019 (0.015)	0.003 (0.007)	-0.014 (0.020)	0.062 (0.064)	-0.085 (0.066)	-0.127 (0.192)
Capability of studying	-0.231 (0.314)	-0.200 (0.126)	-0.047 (0.196)	10.266*** (1.165)	6.251*** (0.973)	6.963*** (2.266)
Siblings’ education	-0.065* (0.038)	0.092 (0.273)	0.020 (0.538)	-0.227 (0.170)	2.638 (3.116)	8.987* (4.991)
Attending the nearest school	-0.342 (0.903)	-0.898** (0.389)	-1.022 (1.425)	-1.845 (4.253)	0.530 (4.081)	13.884 (14.519)
Parents’ characteristics						
Father’s education	-0.053 (0.058)	-0.049 (0.047)	-0.071 (0.065)	0.113 (0.205)	-0.585* (0.326)	-0.324 (0.529)
Mother’s education	0.007 (0.027)	-0.011 (0.042)	-0.059 (0.076)	-0.005 (0.098)	-0.029 (0.389)	0.386 (0.543)
Parents’ attitude: child education	-0.157 (0.188)	-0.256 (0.274)	-0.823 (0.757)	1.488* (0.795)	0.066 (1.474)	4.645 (4.043)
Parents’ attitude: child’s income	0.040 (0.187)	0.101 (0.174)	-0.012 (0.367)	0.199 (0.657)	-0.033 (1.768)	-0.927 (3.696)
Women’s empowerment on child education	0.055 (0.193)	0.133 (0.236)	0.327 (0.466)	-1.431** (0.696)	1.710 (1.542)	2.998 (2.505)

(continued)

**Table A2. (Continued)**

	Schooling gap			Average scores		
	2000	2004	2004	2000	2004	2004
Independent variables	(1)	(2)	(3)	(4)	(5)	(6)
<b>Household characteristics</b>						
Ln(household wealth per capita)	0.250 (0.361)	0.146 (0.132)	0.163 (0.549)	-0.358 (1.321)	0.321 (0.992)	-0.818 (6.539)
Ln(sample child's tuition)	-0.112 (0.227)	-0.018 (0.302)	-0.284 (0.551)	3.494** (1.589)	0.855 (2.085)	3.381 (6.551)
Ln(sample child's other education costs)	-0.143 (0.199)	-0.229 (0.168)	0.061 (0.213)	-0.920 (0.809)	-0.966 (1.229)	-3.757** (1.828)
<b>Teacher and school characteristics</b>						
Teachers' average education	-0.252 (0.178)	-1.137*** (0.159)	-1.109** (0.468)	-0.156 (0.807)	1.070 (1.083)	2.679 (4.241)
Student-teacher ratio	-0.032 (0.036)	0.0002 (0.006)	-0.020 (0.044)	-0.198 (0.127)	-0.029 (0.067)	0.293 (0.335)
% unsafe classrooms	-0.023 (0.793)	1.048** (0.415)	0.324 (0.660)	-2.058 (3.322)	4.295 (3.353)	-0.145 (8.016)
<b>Village characteristics</b>						
Distance to the nearest primary school	-0.051 (0.139)	0.213 (0.149)	0.423 (0.602)	0.877* (0.531)	1.837 (1.289)	1.565 (4.106)
Distance to the nearest junior middle school	-0.164 (0.370)	0.048 (0.052)	-0.294 (0.591)	0.120 (1.359)	-0.232 (0.395)	0.133 (3.858)
Age at the first enrolment	0.179 (0.195)	-0.186 (0.233)	-0.212 (0.695)	0.441 (0.915)	1.986 (2.029)	2.080 (6.661)
Proceed to secondary education	0.269 (1.074)	-2.688** (1.063)	-2.055 (2.028)	-6.702 (4.950)	-0.620 (8.970)	8.797 (15.081)
Percentage of RCCs borrowers	-0.728 (0.780)	-0.916 (1.602)	3.485 (6.216)	-0.734 (2.758)	-7.402 (12.696)	-15.021 (47.353)
Ln(village per capita income)	-0.009 (0.068)	-0.076 (0.056)	-0.070 (0.124)	-0.252 (0.274)	-0.198 (0.814)	-0.795 (1.316)
County dummies	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.338	0.765	0.733	0.392	0.467	0.737

Notes: \*\*\*, \*\* and \* denote 1 per cent, 5 per cent and 10 per cent significance levels in turn.

Figures A1 and A2 show the sensitivity of non-parametric estimation of causal impact to different bandwidths.

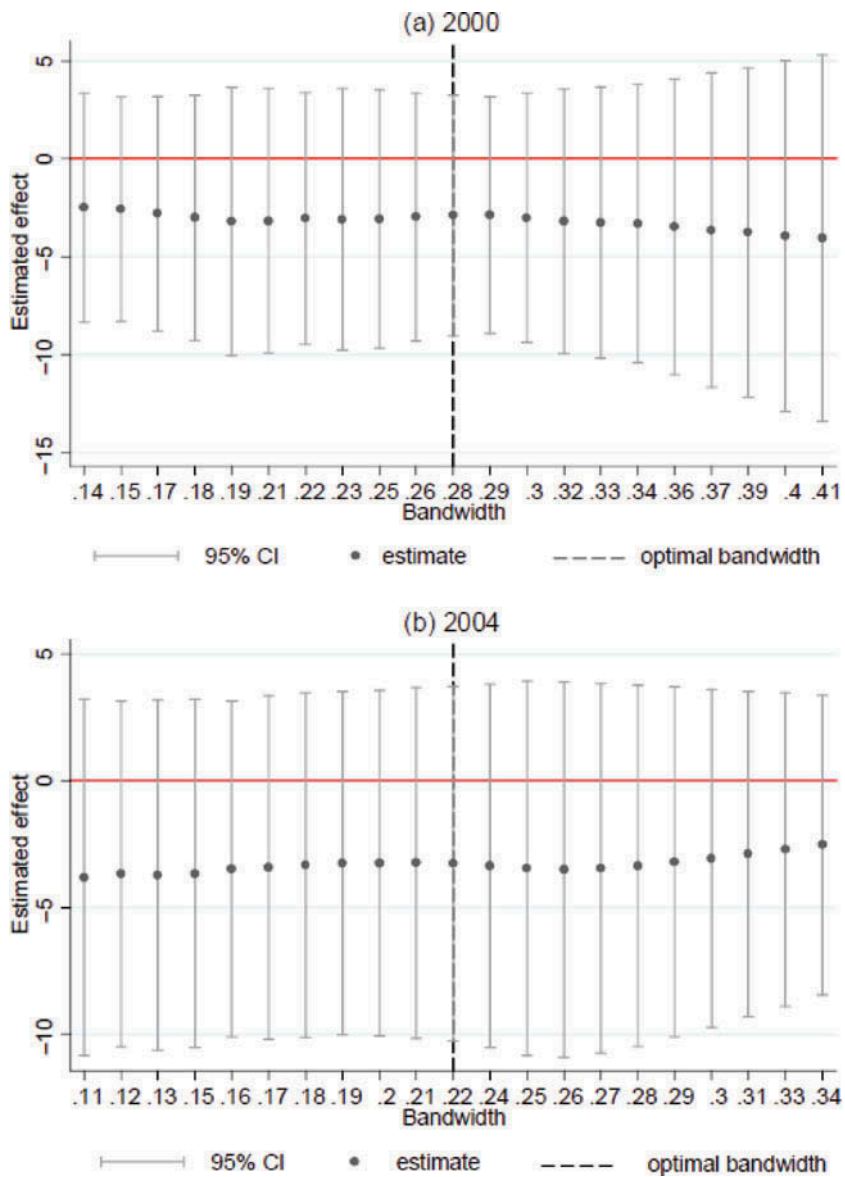
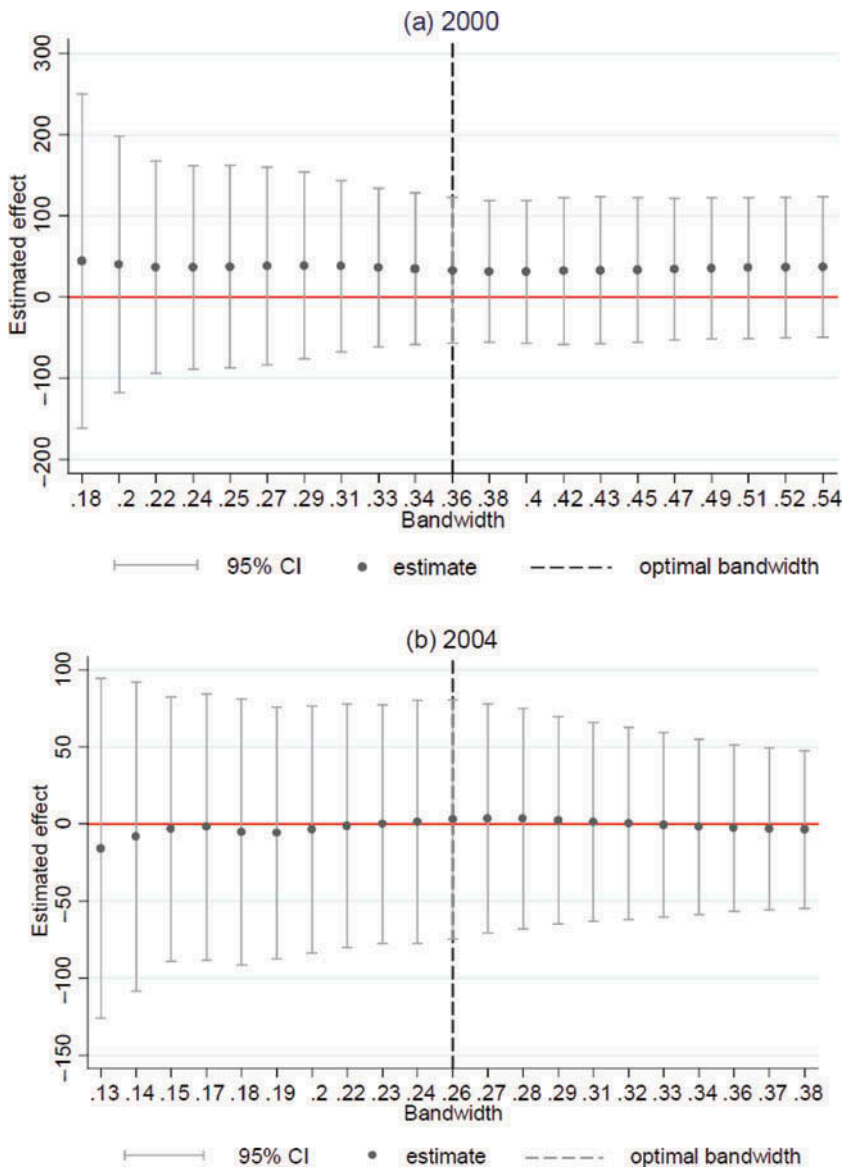


Figure A1. Sensitivity of the estimated impact on schooling gap to the bandwidth.



**Figure A2.** Sensitivity of the estimated impact on average scores to the bandwidth.

## Reference

Van der Klaauw, W. (2008). Breaking the link between poverty and low student achievement: An evaluation of Title I. *Journal of Econometrics*, 142(2), 731–756.