Spillover Effects of Early-Life Medical Interventions

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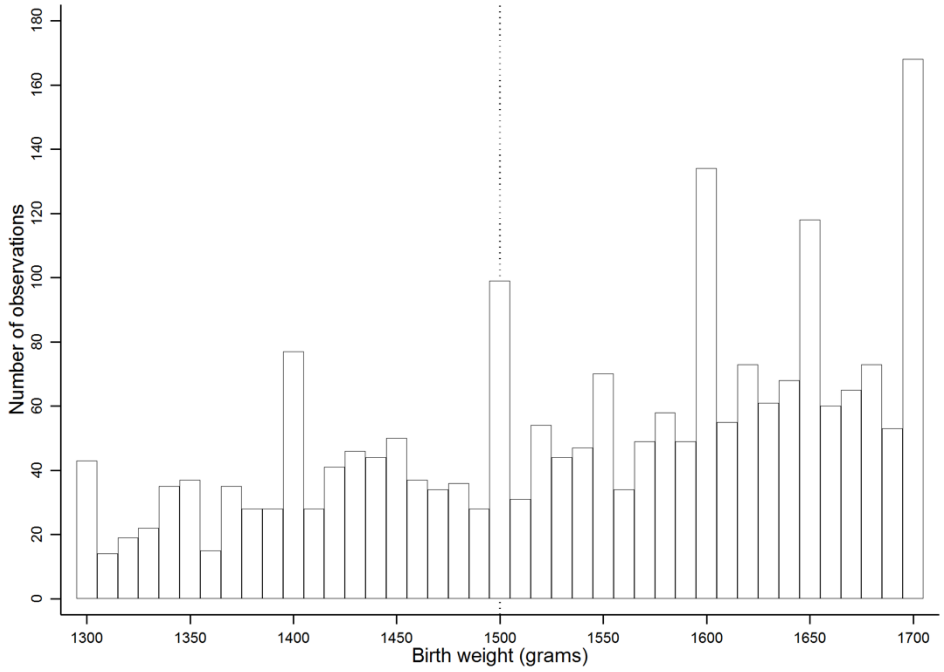
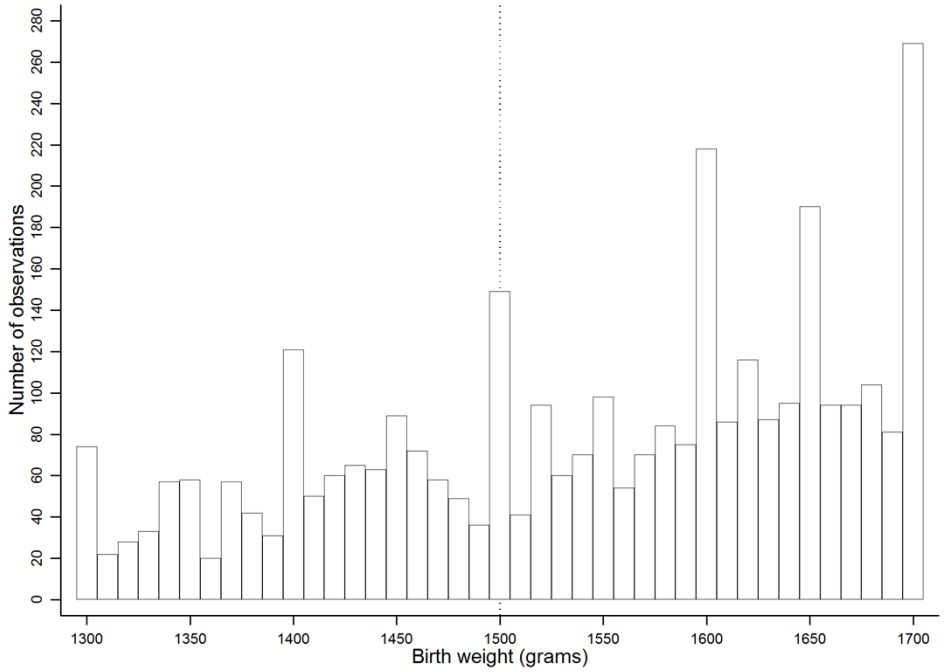
Online Appendix
(Not for publication)

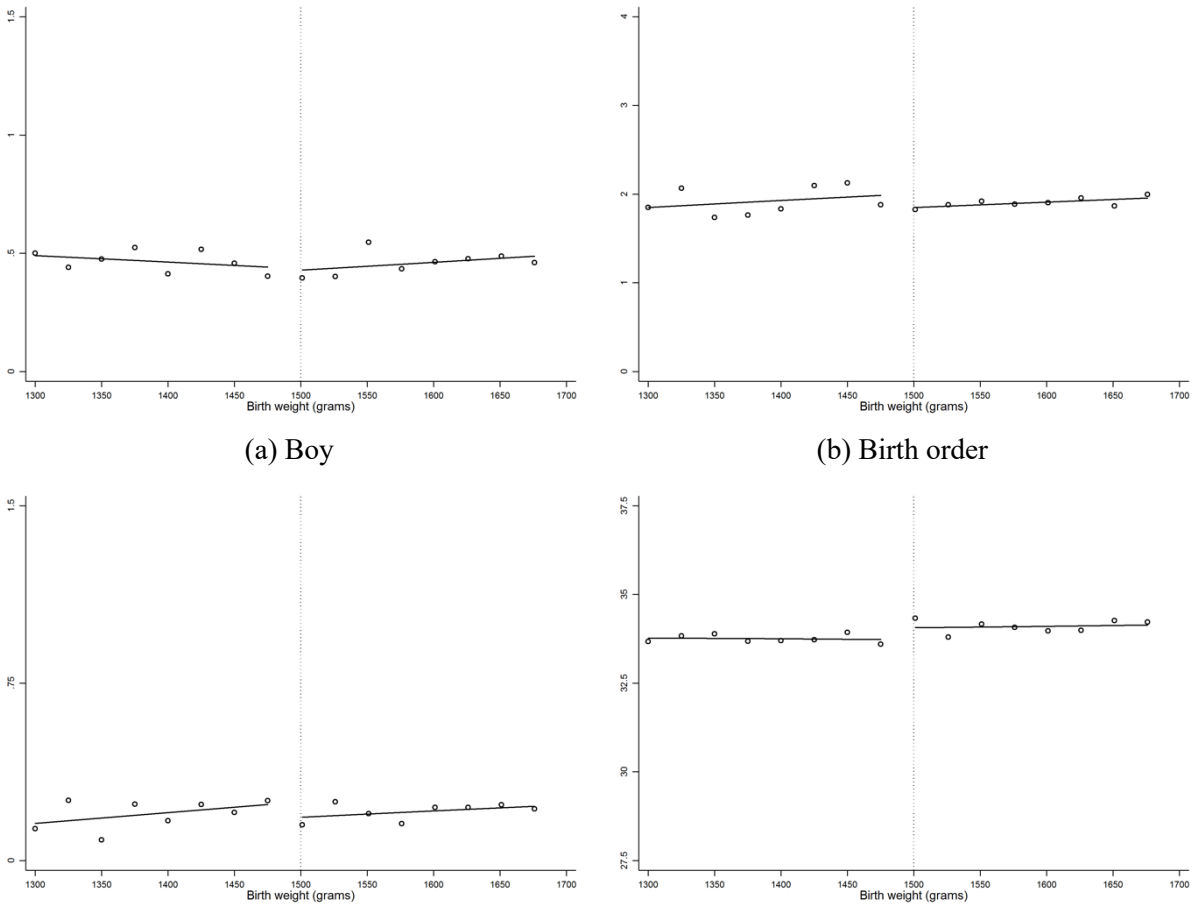


(a) Focal child/parent sample



(b) Sibling sample

Figure A1: Frequency of observations around the VLBW cutoff, GA32+ sample

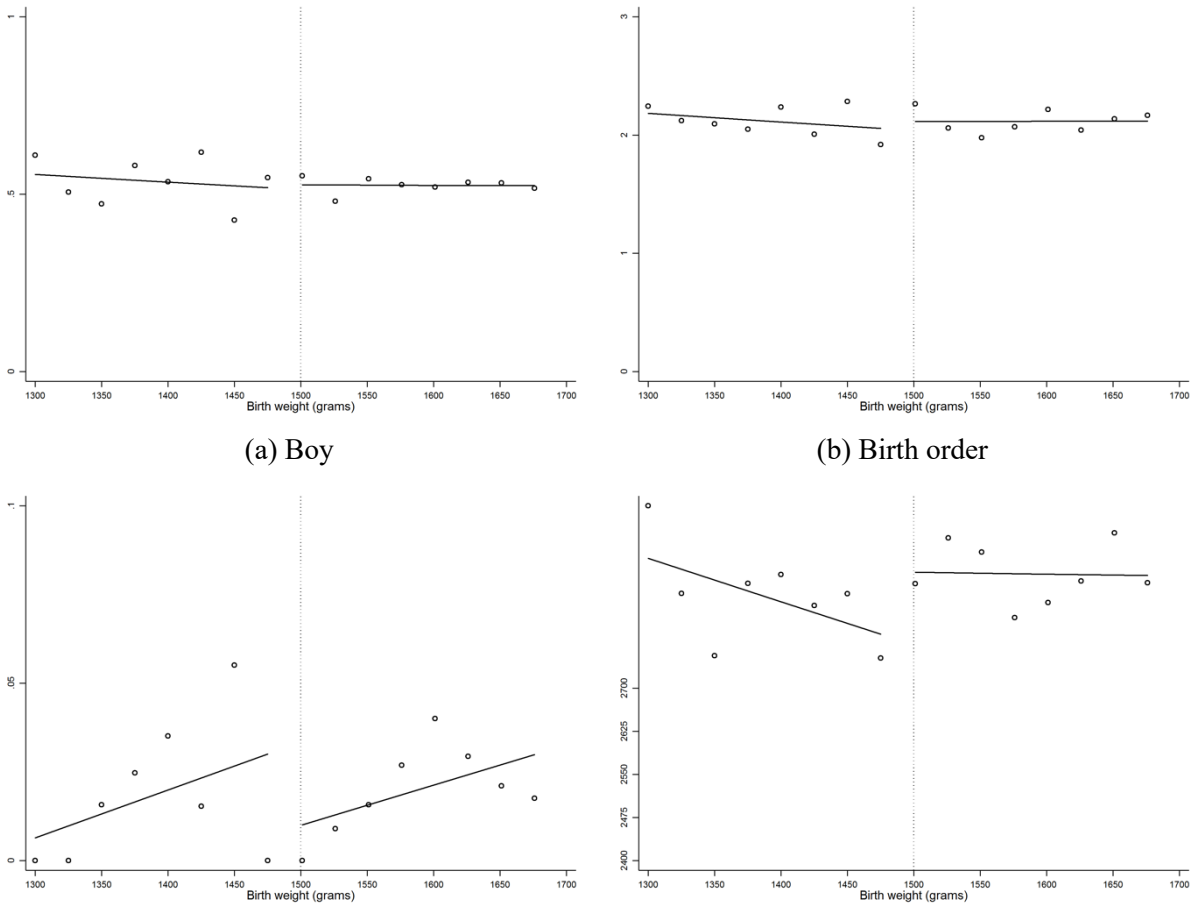


(a) Boy (b) Birth order

(c) Multiple birth (d) Gestational age

Notes: Sample of focal children with gestational age of at least 32 weeks. Each dot represents the average of the summary index indicated in the panel for a 40g bin. Focal children with birth weight of 1,500g are excluded. The lines plot a first-degree polynomial estimated separately on either side of the VLBW cutoff.

Figure A2: Evolution of selected focal child covariates around the VLBW cutoff

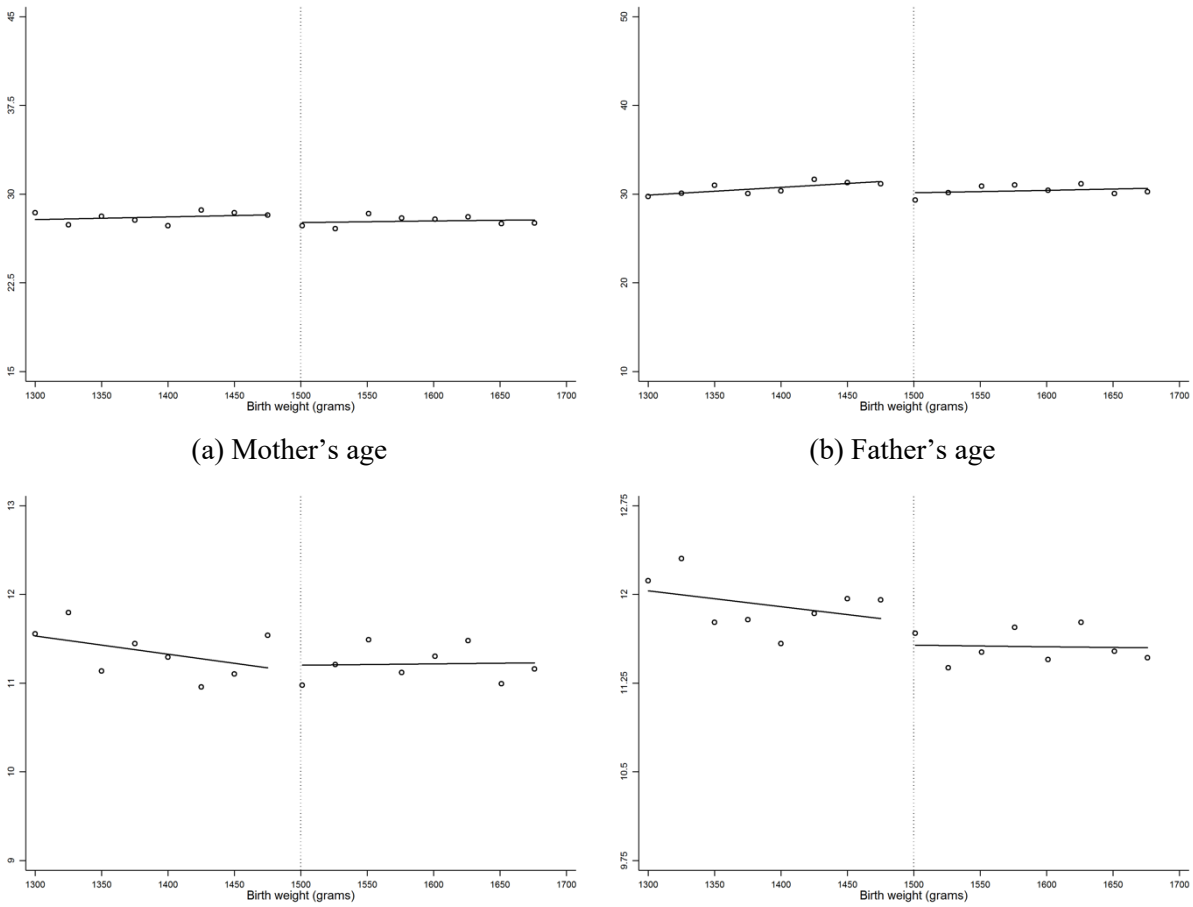


(a) Boy (b) Birth order

(c) Multiple birth (d) Birth weight

Notes: Sample of siblings of focal children with gestational age of at least 32 weeks. Each dot represents the average of the summary index indicated in the panel for a 40g bin. Siblings of focal children with birth weight of 1,500g are excluded. The lines plot a first-degree polynomial estimated separately on either side of the VLBW cutoff.

Figure A3: Evolution of selected sibling covariates around the VLBW cutoff



(a) Mother's age

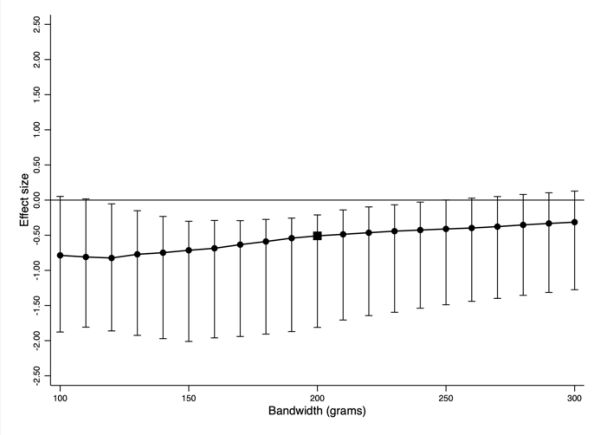
(b) Father's age

(c) Mother's years of education

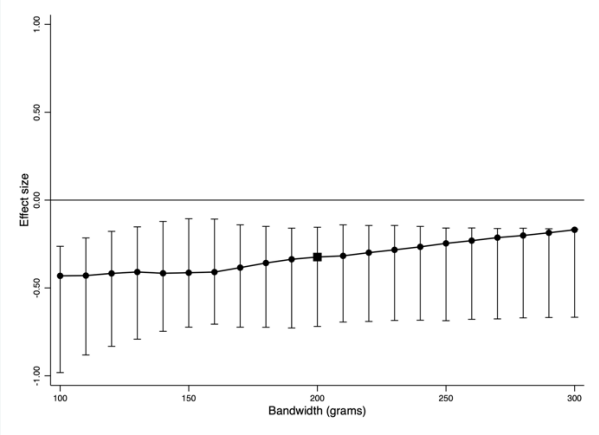
(d) Father's years of education

Notes: Sample of parents of focal children with gestational age of at least 32 weeks. Each dot represents the average of the summary index indicated in the panel for a 40g bin. Parents of focal children with birth weight of 1,500g are excluded. The lines plot a first-degree polynomial estimated separately on either side of the VLBW cutoff.

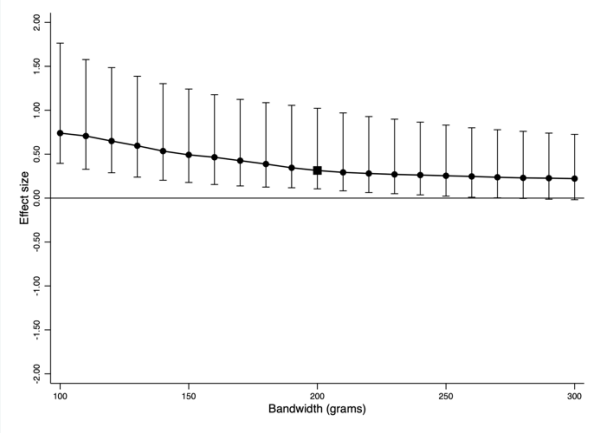
Figure A4: Evolution of selected parental covariates around the VLBW cutoff



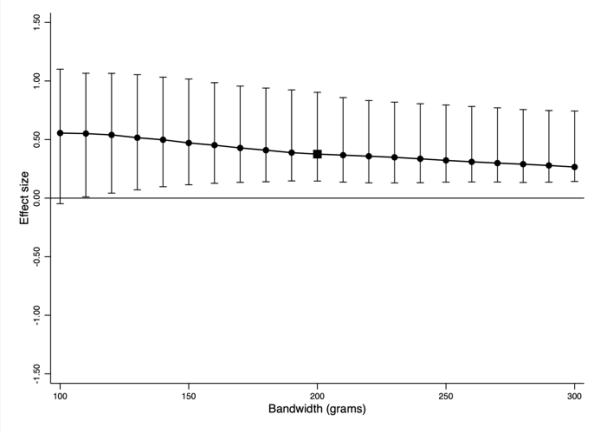
(a) Focal child mortality summary index



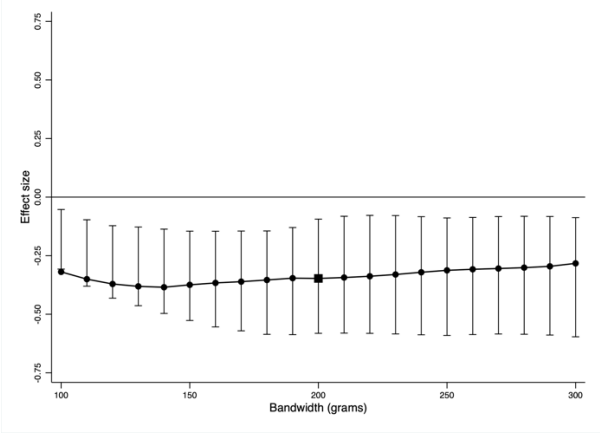
(b) Focal child longer-term health summary index



(c) Focal child test scores summary index



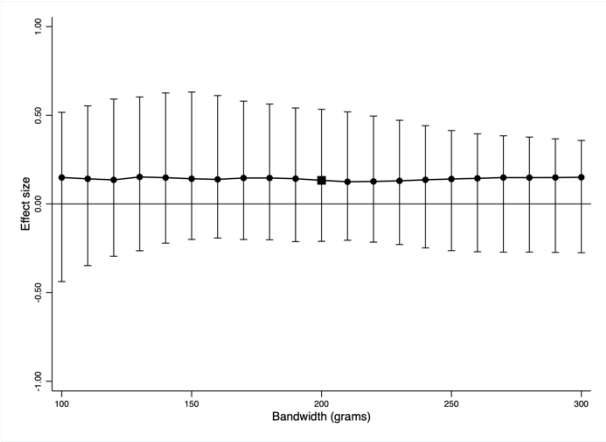
(d) Sibling test scores summary index



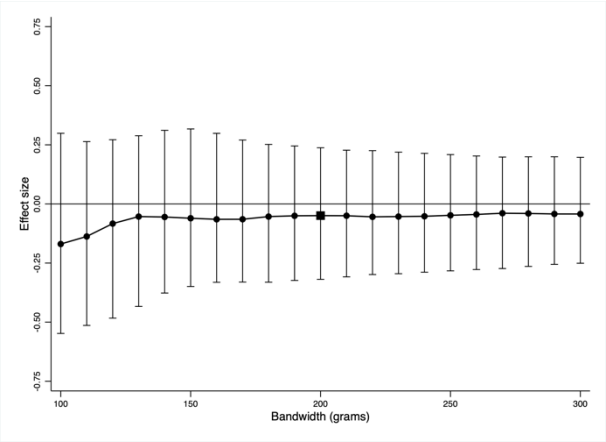
(e) Mother short-term health summary index

Notes: Sample of (family members of) focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of VLBW from a specification with outcome indicated in the figure caption for each bandwidth multiple of 10g between 100g and 300g. The vertical segments plot the corresponding 95% robust confidence interval (see Calonico et al., 2014, 2018). Our baseline estimated effect is indicated with a square.

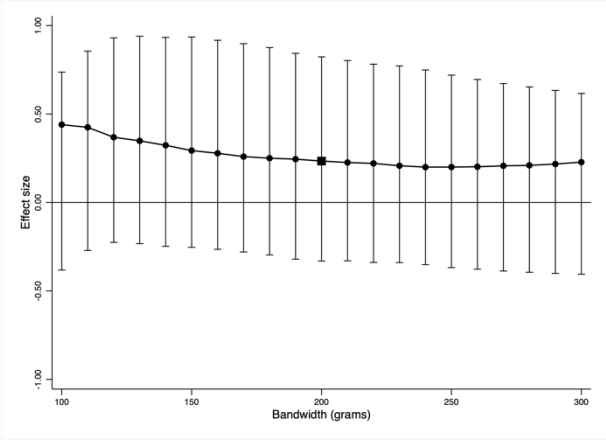
Figure A5: Robustness of selected estimated effects to bandwidth choice



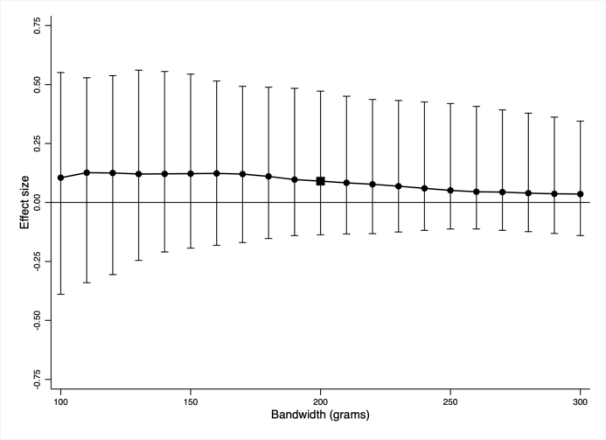
(a) Focal child short-term health



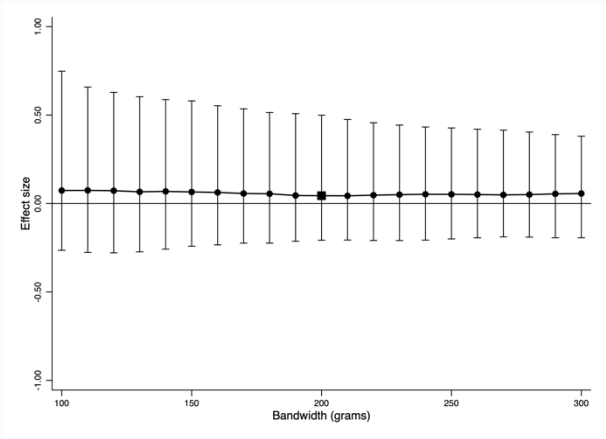
(b) Sibling short-term health



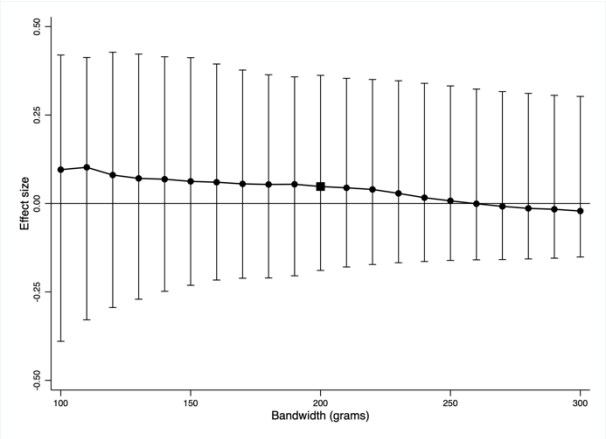
(c) Focal child disability



(d) Sibling long-term health



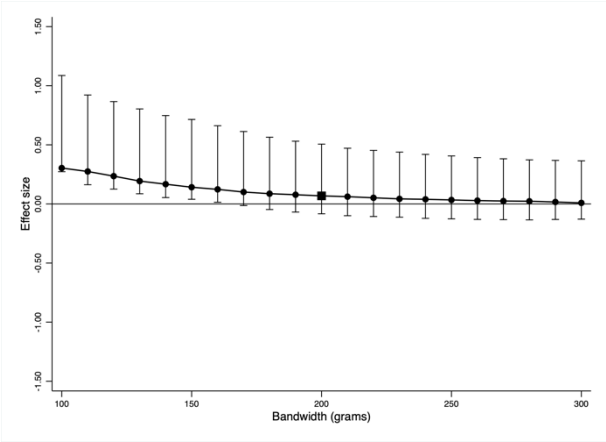
(e) Focal child higher education



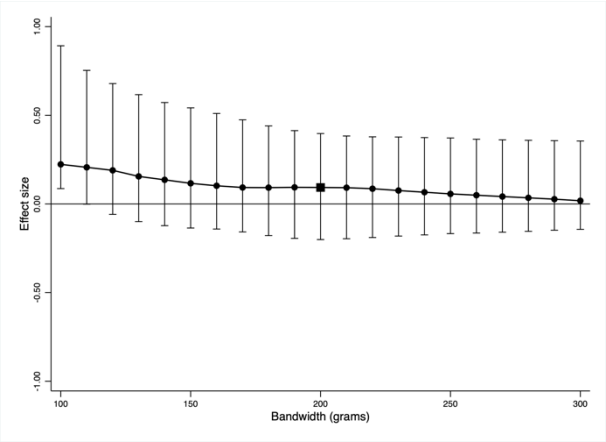
(f) Sibling higher education

Notes: Sample of (siblings of) focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of VLBW from a specification with outcome indicated in the figure caption for each bandwidth multiple of 10g between 100g and 300g. The vertical segments plot the corresponding 95% robust confidence interval (see Calonico et al., 2014, 2019). Our baseline estimated effect is indicated with a square.

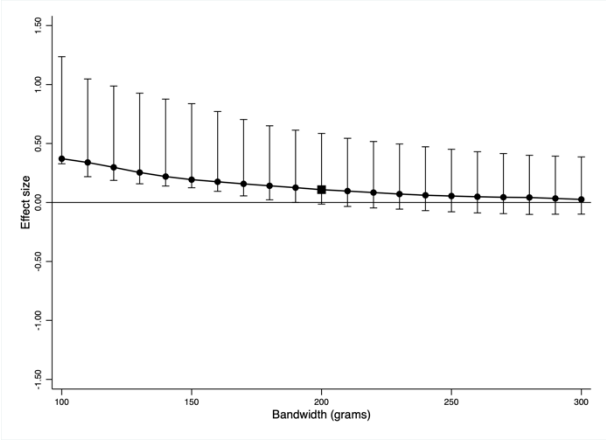
Figure A6: Robustness of remaining estimated effects to bandwidth choice, focal children and siblings



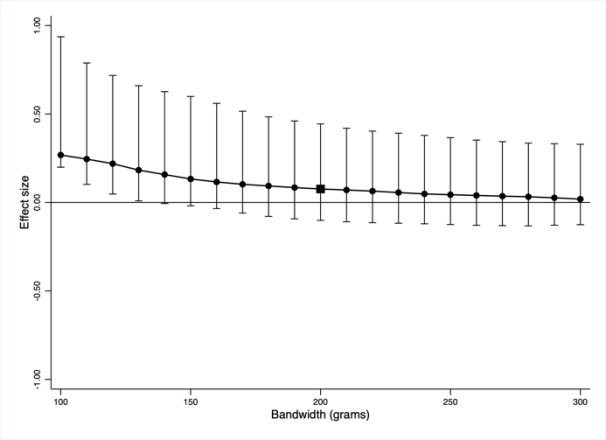
(a) Mother's short-term labor market



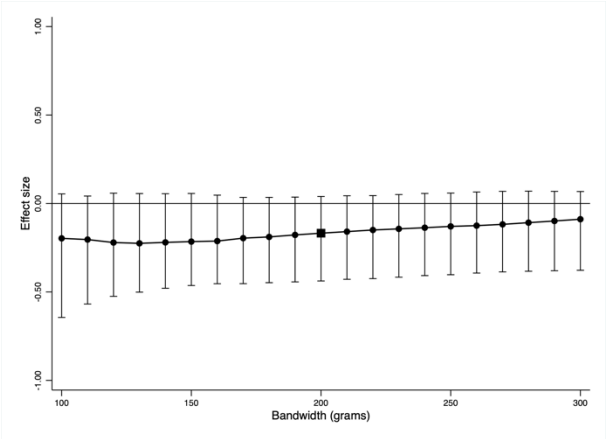
(b) Mother's long-term labor market



(c) Mother's short-term income



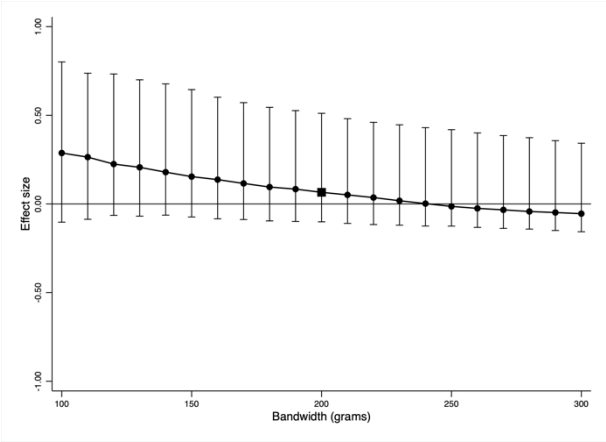
(d) Mother's long-term income



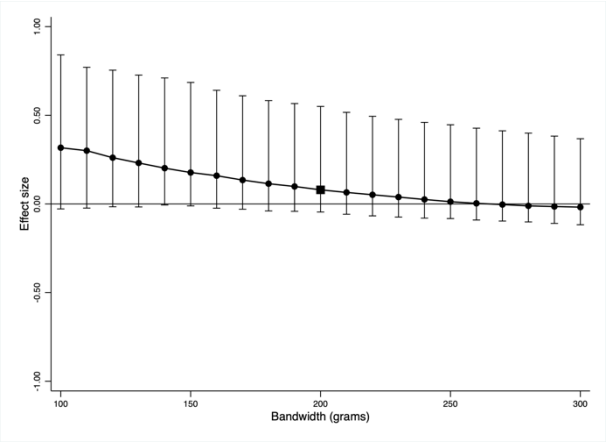
(e) Mother's long-term mental health

Notes: Sample of mothers of focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of VLBW from a specification with outcome indicated in the figure caption for each bandwidth multiple of 10g between 100g and 300g. The vertical segments plot the corresponding 95% robust confidence interval (see Calonico et al., 2014, 2019). Our baseline estimated effect is indicated with a square.

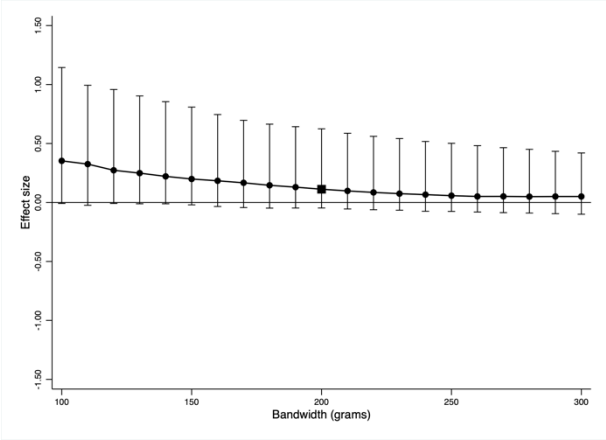
Figure A7: Robustness of remaining estimated effects to bandwidth choice, mothers



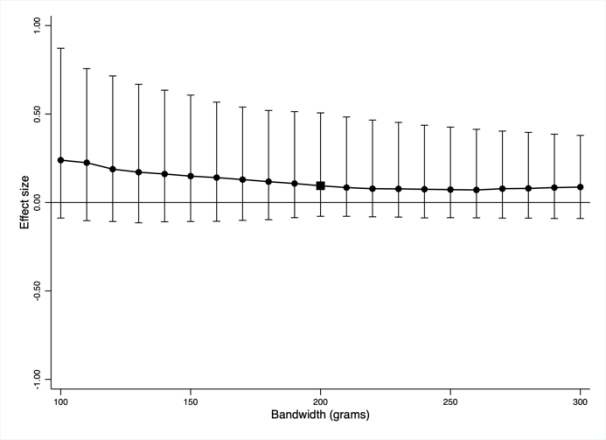
(a) Father's short-term labor market



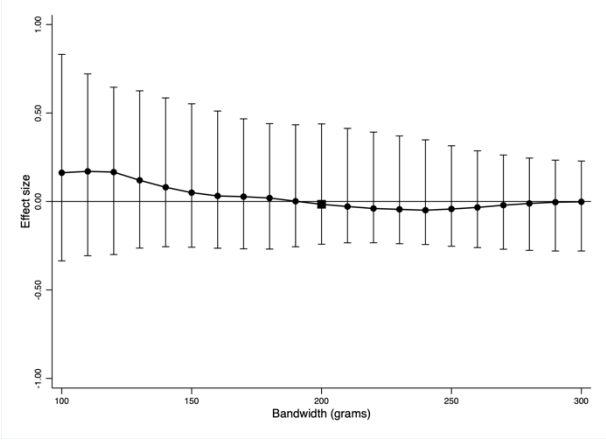
(b) Father's long-term labor market



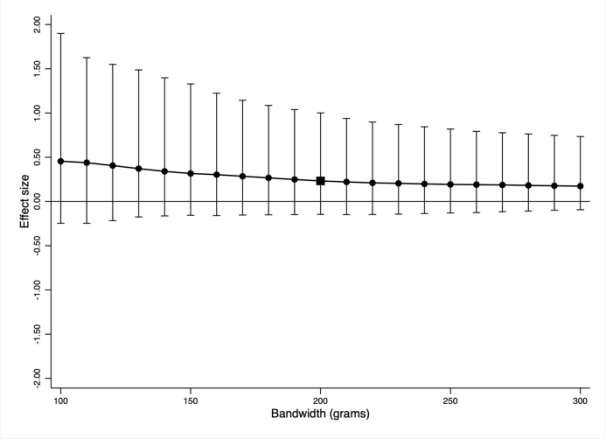
(c) Father's short-term income



(d) Father's long-term income



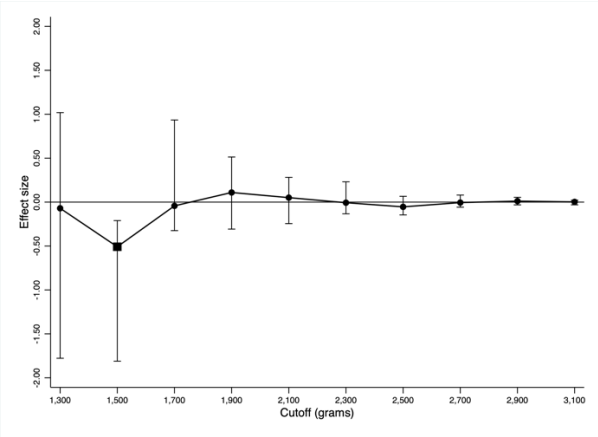
(e) Father's short-term mental health



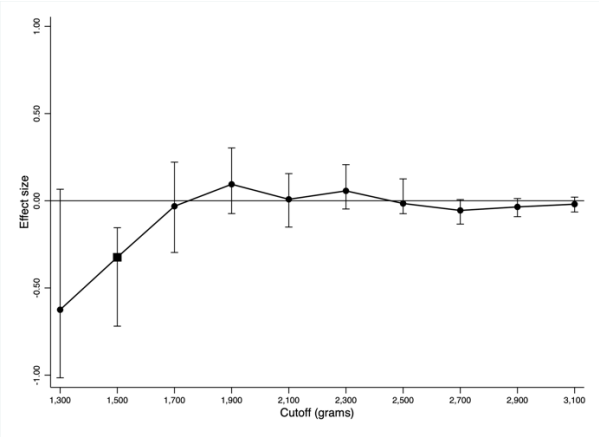
(f) Father's long-term mental health

Notes: Sample of (family members of) focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of VLBW from a specification with outcome indicated in the figure caption for each bandwidth multiple of 10g between 100g and 300g. The vertical segments plot the corresponding 95% robust confidence interval (see Calonico et al., 2014, 2019). Our baseline estimated effect is indicated with a square.

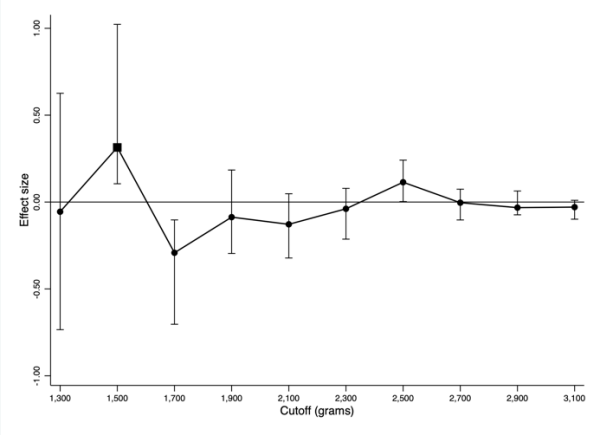
Figure A8: Robustness of remaining estimated effects to bandwidth choice, fathers



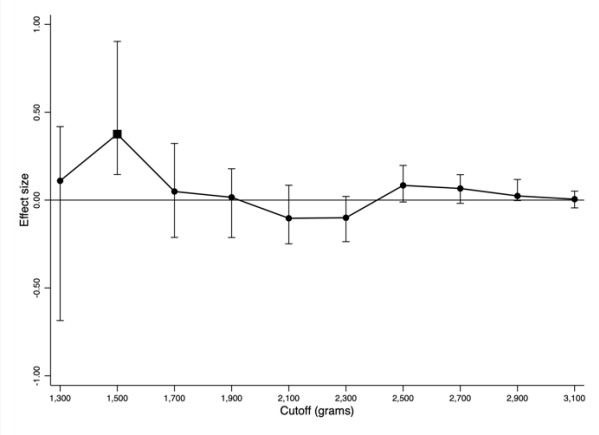
(a) Focal child mortality summary index



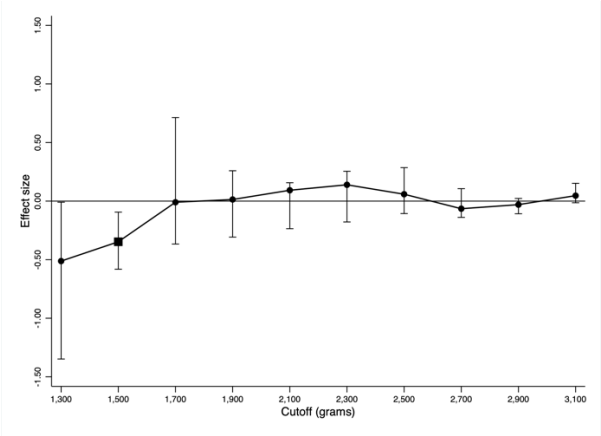
(b) Focal child longer-term health summary index



(c) Focal child test scores summary index



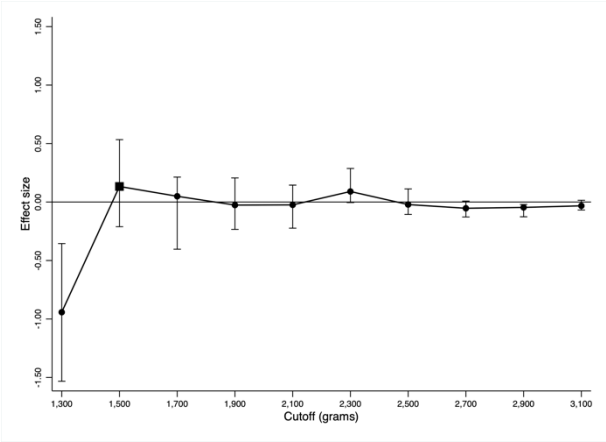
(d) Sibling test scores summary index



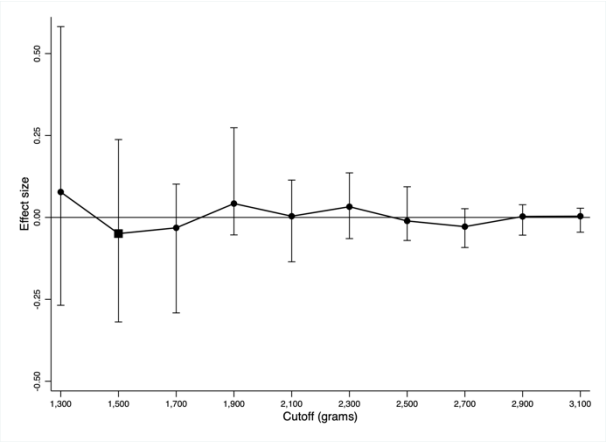
(e) Mother short-term health summary index

Notes: Sample of (family members of) focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of an indicator for birth weight above the cutoff indicated on the horizontal axis, from a specification with outcome indicated in the figure caption. The vertical segments plot the corresponding 95% robust confidence interval (see Calonico et al., 2014, 2018). Our baseline estimated effect is indicated with a square.

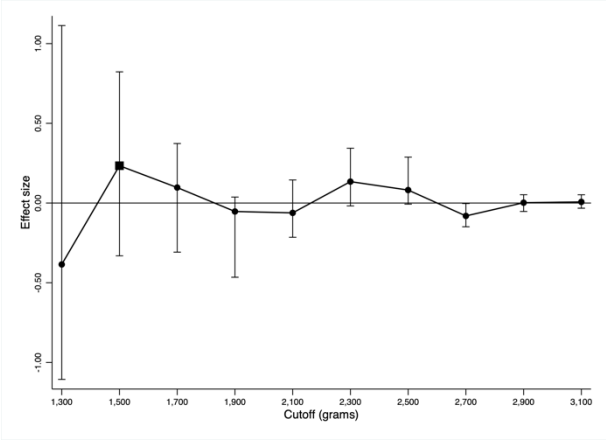
Figure A9: Discontinuities in selected outcomes at other points in the birth weight distribution



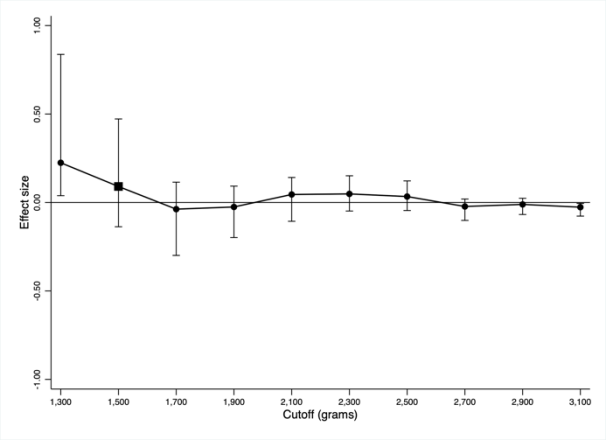
(a) Focal child short-term health



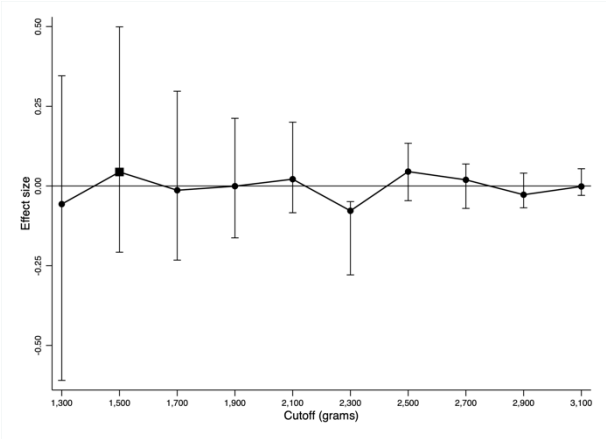
(b) Sibling short-term health



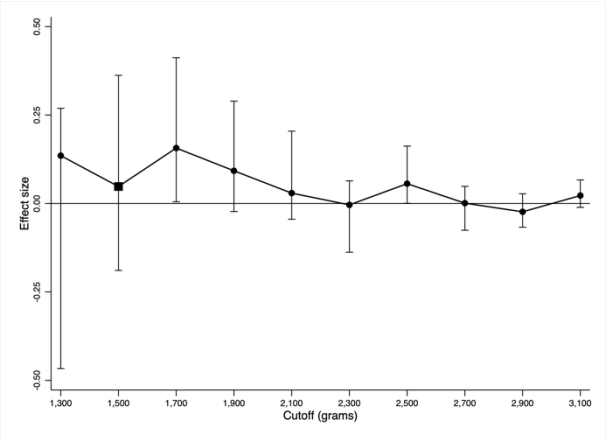
(c) Focal child disability



(d) Sibling long-term health



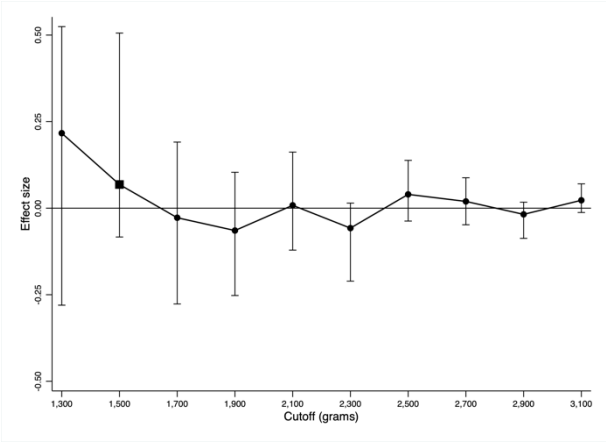
(e) Focal child higher education



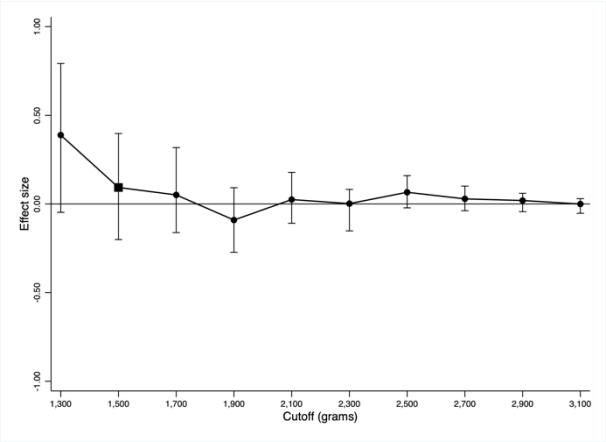
(f) Sibling higher education

Notes: Sample of (family members of) focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of an indicator for birth weight above the cutoff indicated on the horizontal axis within a 200g bandwidth around the cutoff, from a specification with outcome indicated in the figure caption. The vertical segments plot the corresponding 95% robust confidence interval see Calonico et al., 2014, 2019). Our baseline estimated effect is indicated with a square.

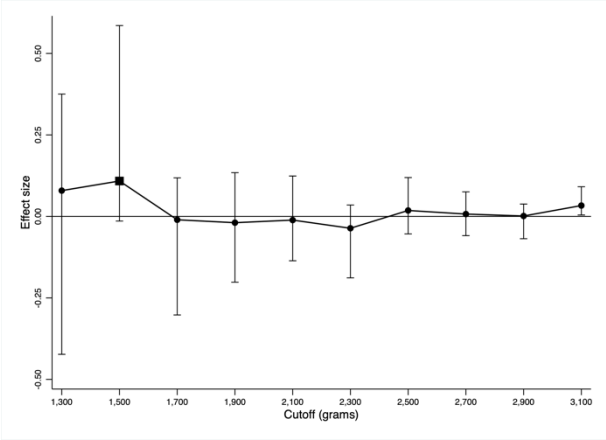
Figure A10: Discontinuities in remaining outcomes at other points in the birth weight distribution, focal children and siblings



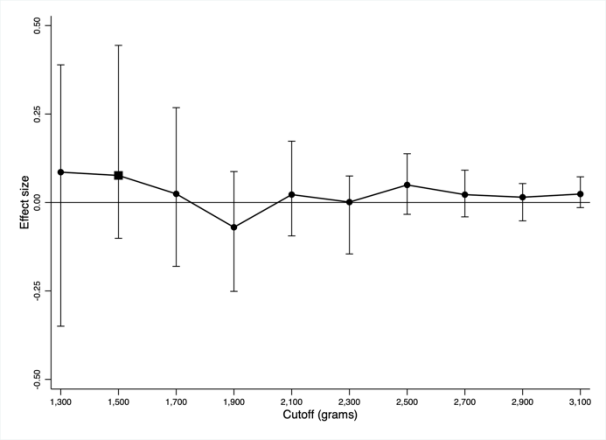
(a) Mother's short-term labor market



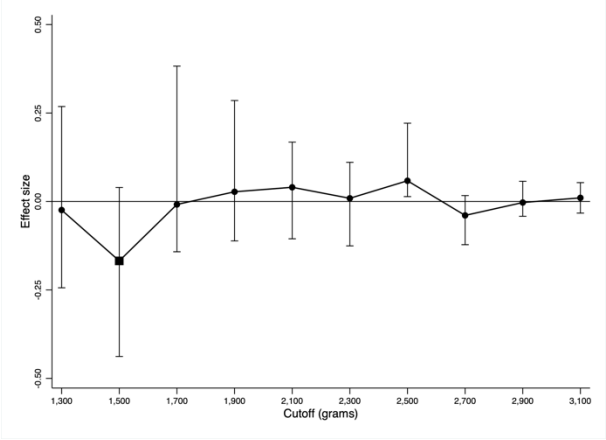
(b) Mother's long-term labor market



(c) Mother's short-term income



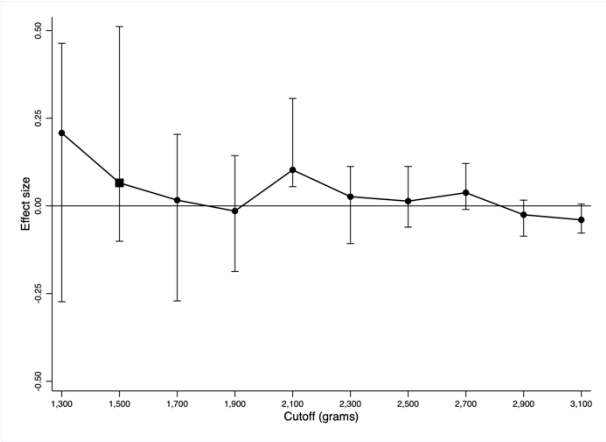
(d) Mother's long-term income



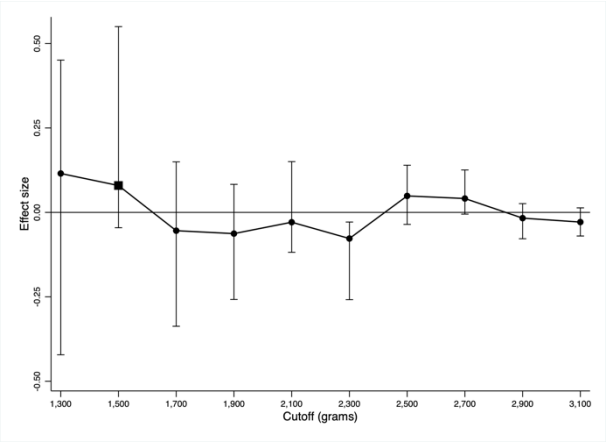
(e) Mother's long-term mental health

Notes: Sample of mothers of focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of an indicator for birth weight above the cutoff indicated on the horizontal axis within a 200g bandwidth around the cutoff, from a specification with outcome indicated in the figure caption. The vertical segments plot the corresponding 95% robust confidence interval see Calonico et al., 2014, 2019). Our baseline estimated effect is indicated with a square.

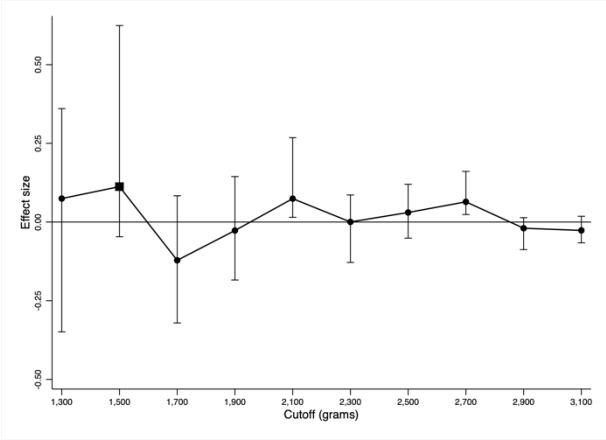
Figure A11: Discontinuities in remaining outcomes at other points in the birth weight distribution, mothers



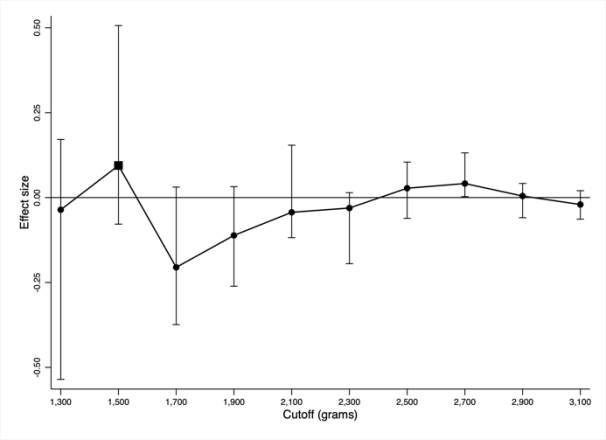
(a) Father's short-term labor market



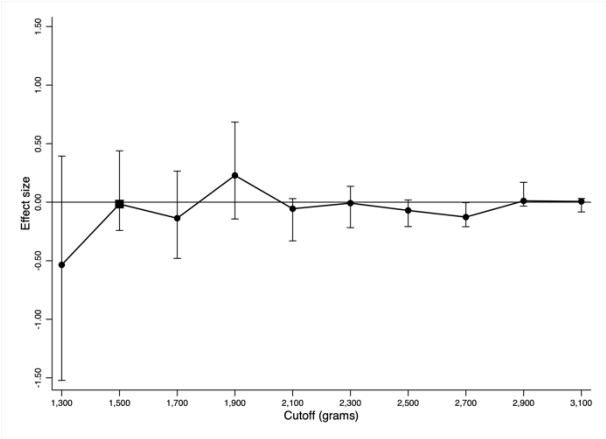
(b) Father's long-term labor market



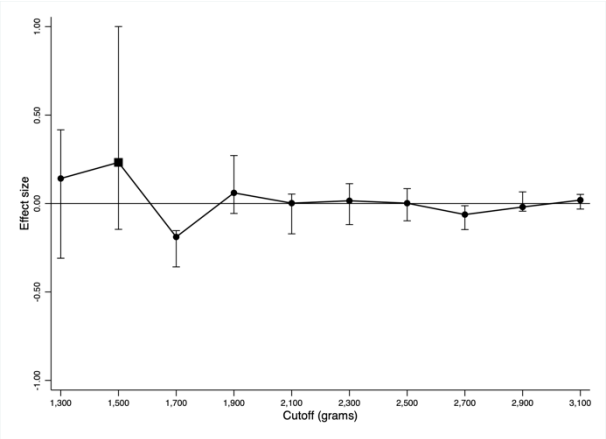
(c) Father's short-term income



(d) Father's long-term income



(e) Father's short-term mental health



(f) Father's long-term mental health

Notes: Sample of fathers of focal children with gestational age of at least 32 weeks. The solid line plots the estimated coefficient of an indicator for birth weight above the cutoff indicated on the horizontal axis within a 200g bandwidth around the cutoff, from a specification with outcome indicated in the figure caption. The vertical segments plot the corresponding 95% robust confidence interval see Calonico et al., 2014, 2019). Our baseline estimated effect is indicated with a square.

Figure A12: Discontinuities in remaining outcomes at other points in the birth weight distribution, fathers

Table A1. Construction of summary indices.

	Focal child	Siblings	Mother	Father
A. Short term (focal child age 1-5)				
Mortality	*7-day mortality* *28-day mortality*	---	---	---
Health	Admitted to hospital as inpatient	Admitted to hospital as inpatient	Filled an antidepressant prescription*	Filled an antidepressant prescription*
Labor market outcomes	---	---	Employed Number of days worked**	Employed Number of days worked**
Income	---	---	Average log(real annual income)**	Average log(real annual income)**
B. Long term (focal child age 6-15)				
Health	Admitted to hospital as inpatient Admitted to emergency room	Admitted to hospital as inpatient Admitted to emergency room	Filled an antidepressant prescription	Filled an antidepressant prescription
Disability diagnosis by age 10	Intellectual disability ADHD Behavioral/emotional disorder Cerebral palsy Epilepsy	---	---	---
9th grade test scores	*Danish test score* *Math test score*	*Danish test score* *Math test score*	---	---
Higher education	*Enrolled in high school at age 18* *Enrolled in academic track at age 18* *Enrolled in higher education at age 24* *Enrolled in university at age 24*	*Enrolled in high school at age 18* *Enrolled in academic track at age 18* *Enrolled in higher education at age 24* *Enrolled in university at age 24*	---	---
Labor market outcomes	---	---	Employed Number of days worked**	Employed Number of days worked**
Income	---	---	Average log(real annual income)**	Average log(real annual income)**

Notes: The index indicated in the row for the family member indicated in the column is constructed by combining the outcomes in the corresponding cell. Outcomes in italic are measured at the specific time indicated, starred outcomes are measured over the 2-5 age interval, and all other outcomes are measured in each calendar year corresponding to the age interval of the focal child indicated in the panel heading (e.g., the short-term focal child health summary index is constructed by combining five indicators for an inpatient hospital admission for each year of life of the focal child after they turned one). Outcomes indicated with two stars are continuous, all other outcomes are constructed as indicators. Summary indexes are constructed by first standardizing each outcome at the level of the birth cohort of the focal child, then summing them up, and then standardizing again at the level of the birth cohort of the focal child.

Table A2. Optimal bandwidths.

	Focal child	Siblings	Mother	Father
	(1)	(2)	(3)	(4)
A. Short term (focal child age 1-5)				
Mortality	181.6	---	---	---
Health	144.4	235.2	192.3	186.6
Labor market outcomes	---	---	153.1	200.9
Income	---	---	151.1	183.7
B. Long term (focal child age 6-15)				
Health	117.9	246.2	233.9	196.2
Disability diagnosis by age 10	164.1	---	---	---
9^{th} grade test scores	214.5	137.0	---	---
Higher education	250.8	170.2	---	---
Labor market outcomes	---	---	193.2	207.5
Income	---	---	184.7	213.3

Notes: Optimal bandwidth according to the methodology suggested by Calonico et. al (2014, 2019).

Table A3: Sample construction.

	Observations
Focal children/parent sample	
Initial sample	772,998
Children missing information on birth weight or gestational age	73,385
Children with birth weight outside our bandwidth (1,300-1,700 grams)	695,014
Children with no siblings born within our sample period	922
Final sample of focal children with siblings	3,677
– with gestational age below 32 weeks	1,521
– with gestational age of at least 32 weeks	2,156
Sibling sample	
Initial sample (siblings of focal children above)	6,389
Siblings born after 1997 (no information on educational outcomes)	562
Final sample of siblings	5,827
– siblings of focal children with gestational age below 32 weeks	2,516
– siblings of focal children with gestational age of at least 32 weeks	3,311

Table A4. Robustness of selected estimated effects.

	CCT optimal bandwidth	Second-degree polynomial	Including controls	No heaping controls	Donut regressions	Rectangular kernel	Cluster at birth weight	FC with GA < 32 weeks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Focal child								
Mortality	-0.580*	-0.983***	-0.496**	-0.673***	-0.508**	-0.338	-0.508***	-0.391
	[-0.648]	[-1.243]	[-0.968]	[-1.394]	[-0.946]	[-0.611]	[-1.011]	[-0.332]
	(0.356)	(0.481)	(0.400)	(0.408)	(0.438)	(0.407)	(0.270)	(0.568)
Mean outcome	0.747	0.726	0.726	0.726	0.660	0.726	0.726	0.850
Observations	1,874	2,156	2,156	2,156	2,058	2,156	2,156	1,521
Long-term health	-0.418***	-0.517***	-0.280***	-0.170*	-0.324***	-0.272**	-0.324***	-0.162
	[-0.485]	[-0.498]	[-0.394]	[-0.244]	[-0.500]	[-0.344]	[-0.437]	[-0.122]
	(0.141)	(0.181)	(0.139)	(0.144)	(0.184)	(0.151)	(0.135)	(0.204)
Mean outcome	0.025	0.039	0.039	0.039	0.048	0.039	0.039	0.084
Observations	1,049	1,960	1,960	1,960	1,877	1,960	1,960	1,337
Test scores	0.287*	0.807***	0.392***	0.361***	0.314***	0.138*	0.314***	-0.173
	[0.338]	[0.963]	[0.544]	[0.618]	[0.772]	[0.372]	[0.564]	[-0.245]
	(0.173)	(0.318)	(0.193)	(0.234)	(0.259)	(0.210)	(0.217)	(0.241)
Mean outcome	-0.242	-0.257	-0.257	-0.257	-0.243	-0.257	-0.257	-0.105
Observations	999	952	952	952	910	952	952	713
B. Siblings								
Test scores	0.503***	0.602**	0.389***	0.387***	0.375***	0.305**	0.375***	-0.121
	[0.573]	[0.606]	[0.535]	[0.551]	[0.580]	[0.420]	[0.524]	[-0.055]
	(0.172)	(0.273)	(0.173)	(0.193)	(0.221)	(0.171)	(0.195)	(0.193)
Mean outcome	-0.171	-0.216	-0.216	-0.216	-0.214	-0.216	-0.216	-0.107
Observations	972	1,539	1,539	1,539	1,470	1,539	1,539	1,153

Table A4. Robustness of selected estimated effects (continued).

	CCT optimal bandwidth	Second-degree polynomial	Including controls	No heaping controls	Donut regressions	Rectangular kernel	Cluster at birth weight	FC with GA < 32 weeks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C. Mother								
Short-term health	-0.347***	-0.361***	-0.267*	-0.241	-0.347*	-0.357*	-0.347**	-0.112
	[-0.385]	[-0.360]	[-0.219]	[-0.170]	[-0.359]	[-0.278]	[-0.338]	[-0.122]
	(0.133)	(0.107)	(0.120)	(0.124)	(0.218)	(0.153)	(0.151)	(0.308)
Mean outcome	0.047	0.042	0.042	0.042	0.049	0.042	0.042	0.002
Observations	625	689	689	689	673	689	689	538

Notes: Column headings indicate changes to the baseline specification described in the notes to Table 2. Column 1 restricts the sample to (family members of) focal children with birth weight within the optimal bandwidth suggested by Calonico et al. (2019) around the 1,500g cutoff. The specification in Column 2 includes a second-degree polynomial in birth weight, while the specification in Column 3 includes controls for focal child gestational age, gender, birth order, multiple birth, year of birth, and region of birth, as well as for mother's characteristics at the birth of the focal child, such as age, years of education, marital status, immigrant status, and an indicator for missing information on education; in addition, the specification in Panel B includes controls for sibling birth weight, gender, gestational age, birth order, multiple birth, and year of birth. The specification in Column 4 uses the baseline set of covariates but excludes the indicators for birth weight being a multiple of 50g. The sample in Column 5 excludes the (family members of) focal children with birth weight of exactly 1,500g. Column 6 uses a rectangular kernel, while the standard errors in Column 7 are clustered at the birth weight level. Columns 8 and 9 restrict the sample to (family members of) focal children from singleton births or with gestational age below 32 weeks, respectively. All other notes from Table 2 apply.

Table A5. Robustness of remaining estimated effects.

	CCT optimal bandwidth	Second-degree polynomial	Including controls	No heaping controls	Donut regressions	Rectangular kernel	Cluster at birth weight level	Singleton focal children	FC with GA < 32 weeks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. Focal child									
Short-term health	0.145	0.169	0.159	0.091	0.133	0.064	0.133	0.165	0.021
	[0.106]	[0.210]	[0.198]	[0.126]	[0.166]	[0.147]	[0.161]	[0.262]	[0.105]
	(0.175)	(0.241)	(0.180)	(0.190)	(0.214)	(0.188)	(0.200)	(0.228)	(0.252)
Mean outcome	0.128	0.190	0.190	0.190	0.200	0.190	0.190	0.203	0.320
Observations	1,314	1,978	1,978	1,978	1,895	1,978	1,978	1,565	1,345
Disability	0.269	0.392	0.277	0.160	0.234	0.184	0.234	0.349	0.783**
	[0.223]	[0.415]	[0.321]	[0.076]	[0.376]	[0.173]	[0.246]	[0.498]	[1.030]
	(0.269)	(0.313)	(0.293)	(0.294)	(0.270)	(0.304)	(0.247)	(0.366)	(0.462)
Mean outcome	0.237	0.249	0.249	0.249	0.243	0.249	0.249	0.283	0.462
Observations	1,698	2,156	2,156	2,156	2,058	2,156	2,156	1,718	1,521
Higher education	0.052	0.100	0.019	0.112*	0.044	0.034	0.044	0.029	0.180
	[0.038]	[0.177]	[0.048]	[0.319]	[0.097]	[0.104]	[0.146]	[0.077]	[0.211]
	(0.125)	(0.242)	(0.172)	(0.180)	(0.202)	(0.163)	(0.104)	(0.205)	(0.175)
Mean outcome	-0.356	-0.380	-0.380	-0.380	-0.372	-0.380	-0.380	-0.413	-0.395
Observations	2,730	2,156	2,156	2,156	2,058	2,156	2,156	1,718	1,521

Table A5. Robustness of remaining estimated effects (continued).

	CCT optimal bandwidth	Second-degree polynomial	Including controls	No heaping controls	Donut regressions	Rectangular kernel	Cluster at birth weight level	Singleton focal children	FC with GA < 32 weeks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
B. Siblings									
Short-term health	-0.053	-0.106	0.029	-0.005	-0.049	-0.047	-0.049	-0.097	0.098
	[-0.048]	[-0.058]	[0.075]	[-0.019]	[-0.100]	[-0.044]	[-0.041]	[-0.115]	[0.108]
	(0.099)	(0.202)	(0.131)	(0.142)	(0.178)	(0.129)	(0.106)	(0.161)	(0.126)
Mean outcome	0.098	0.103	0.103	0.103	0.109	0.103	0.103	0.153	0.030
Observations	3,746	3,311	3,210	3,311	3,163	3,311	3,311	2,706	2,516
Long-term health	0.054	0.159	0.065	0.114	0.090	0.044	0.090	0.004	-0.028**
	[0.055]	[0.157]	[0.132]	[0.236]	[0.153]	[0.127]	[0.167]	[-0.024]	[-0.271]
	(0.105)	(0.225)	(0.144)	(0.155)	(0.183)	(0.138)	(0.104)	(0.141)	(0.136)
Mean outcome	0.127	0.115	0.101	0.115	0.129	0.115	0.115	0.126	0.084
Observations	3,906	3,311	3,210	3,311	3,163	3,311	3,311	2,706	2,516
Higher education	0.055	0.095	0.155	-0.049	0.048	0.016	0.048	0.117	0.072
	[0.094]	[0.062]	[0.174]	[-0.120]	[0.090]	[0.098]	[0.086]	[0.169]	[0.178]
	(0.116)	(0.193)	(0.124)	(0.141)	(0.163)	(0.132)	(0.093)	(0.159)	(0.139)
Mean outcome	-0.218	-0.211	-0.202	-0.211	-0.232	-0.211	-0.211	-0.200	-0.233
Observations	2,254	2,759	2,658	2,759	2,629	2,759	2,759	2,237	2,120

Table A5. Robustness of remaining estimated effects (continued).

	CCT optimal bandwidth (1)	Second-degree polynomial (2)	Including controls (3)	No heaping controls (4)	Donut regressions (5)	Rectangular kernel (6)	Cluster at birth weight level (7)	Singleton focal children (8)	FC with GA < 32 weeks (9)
C. Mother									
Short-term labor market	0.135	0.299***	0.110	0.010	0.068	0.016	0.068	0.131**	0.225**
	[0.179]	[0.574]	[0.173]	[0.161]	[0.278]	[0.086]	[0.211]	[0.350]	[0.351]
	(0.133)	(0.198)	(0.135)	(0.150)	(0.178)	(0.141)	(0.163)	(0.171)	(0.166)
Mean outcome	-0.047	-0.060	-0.060	-0.060	-0.066	-0.060	-0.060	-0.040	-0.094
Observations	1,596	2,143	2,143	2,143	2,046	2,143	2,143	1,708	1,512
Short-term income	0.191*	0.386***	0.144	0.069*	0.109**	0.014	0.109*	0.169***	0.186**
	[0.232]	[0.691]	[0.220]	[0.270]	[0.362]	[0.138]	[0.286]	[0.452]	[0.309]
	(0.134)	(0.215)	(0.139)	(0.153)	(0.177)	(0.138)	(0.173)	(0.174)	(0.155)
Mean outcome	-0.047	-0.070	-0.070	-0.070	-0.073	-0.070	-0.070	-0.064	-0.088
Observations	1,595	2,144	2,144	2,144	2,047	2,144	2,144	1,709	1,512
Long-term labor market	-0.141	-0.260	-0.183	-0.055	-0.168	-0.105	-0.168**	-0.046	0.049
	[-0.168]	[-0.255]	[-0.192]	[-0.023]	[-0.252]	[-0.159]	[-0.199]	[-0.099]	[-0.016]
	(0.105)	(0.158)	(0.117)	(0.122)	(0.182)	(0.124)	(0.086)	(0.148)	(0.153)
Mean outcome	-0.010	-0.011	-0.011	-0.011	-0.003	-0.011	-0.011	-0.031	0.072
Observations	2,440	2,155	2,155	2,155	2,057	2,155	2,155	1,717	1,521
Long-term income	0.094	0.192*	0.116	0.097	0.093	0.091	0.093	0.089	0.247*
	[0.125]	[0.363]	[0.041]	[0.102]	[0.182]	[0.060]	[0.098]	[0.149]	[0.325]
	(0.122)	(0.197)	(0.140)	(0.153)	(0.185)	(0.143)	(0.146)	(0.172)	(0.168)
Mean outcome	-0.025	-0.028	-0.028	-0.028	-0.026	-0.028	-0.028	-0.048	-0.102
Observations	1,913	2,124	2,124	2,124	2,027	2,124	2,124	1,692	1,503
Long-term mental health	0.088	0.265**	0.108	0.097	0.076	0.034	0.076	0.063*	0.218**
	[0.116]	[0.445]	[0.095]	[0.221]	[0.247]	[0.091]	[0.171]	[0.264]	[0.347]
	(0.113)	(0.180)	(0.117)	(0.139)	(0.166)	(0.130)	(0.149)	(0.158)	(0.160)
Mean outcome	-0.056	-0.063	-0.063	-0.063	-0.058	-0.063	-0.063	-0.071	-0.074
Observations	1,850	2,125	2,125	2,125	2,028	2,125	2,125	1,693	1,503

Table A5. Robustness of remaining estimated effects (continued).

	CCT optimal bandwidth (1)	Second-degree polynomial (2)	Including controls (3)	No heaping controls (4)	Donut regressions (5)	Rectangular kernel (6)	Cluster at birth weight level (7)	Singleton focal children (8)	FC with GA < 32 weeks (9)
D. Father									
Short-term mental health	0.010	0.189	0.045	0.025	-0.016	-0.134	-0.016	0.069	-0.139
	[0.005]	[0.187]	[0.173]	[0.177]	[0.177]	[0.080]	[0.098]	[0.215]	[-0.144]
	(0.129)	(0.264)	(0.136)	(0.173)	(0.198)	(0.179)	(0.171)	(0.229)	(0.259)
Mean outcome	0.005	0.023	0.023	0.023	0.029	0.023	0.023	0.023	0.071
Observations	598	669	669	669	653	669	669	506	524
Short-term labor market	0.064	0.307*	0.108	-0.066	0.066	-0.046	0.066*	0.141	0.270**
	[0.114]	[0.379]	[0.233]	[0.000]	[0.286]	[0.113]	[0.205]	[0.243]	[0.337]
	(0.122)	(0.214)	(0.144)	(0.156)	(0.189)	(0.141)	(0.111)	(0.179)	(0.159)
Mean outcome	0.051	0.051	0.051	0.051	0.041	0.051	0.051	0.047	0.005
Observations	2,099	2,099	2,099	2,099	2,002	2,099	2,099	1,669	1,484
Short-term income	0.139	0.371**	0.104	0.047	0.112*	0.004	0.112***	0.055	0.180
	[0.183]	[0.514]	[0.239]	[0.166]	[0.349]	[0.183]	[0.289]	[0.177]	[0.251]
	(0.130)	(0.258)	(0.146)	(0.171)	(0.188)	(0.146)	(0.110)	(0.179)	(0.157)
Mean outcome	-0.046	-0.048	-0.048	-0.048	-0.060	-0.048	-0.048	-0.039	-0.016
Observations	1,830	2,100	2,100	2,100	2,003	2,100	2,100	1,670	1,484
Long-term mental health	0.238	0.492	0.194	0.183	0.233	0.137	0.233**	0.314	0.072
	[0.297]	[0.755]	[0.391]	[0.447]	[0.470]	[0.283]	[0.427]	[0.487]	[0.026]
	(0.196)	(0.472)	(0.269)	(0.293)	(0.308)	(0.231)	(0.201)	(0.320)	(0.168)
Mean outcome	-0.024	-0.026	-0.026	-0.026	-0.030	-0.026	-0.026	-0.031	-0.014
Observations	1,916	2,116	2,116	2,116	2,019	2,116	2,116	1,681	1,491
Long-term labor market	0.068	0.344**	0.113*	-0.029	0.080*	-0.037	0.080**	0.156*	-0.026
	[0.115]	[0.428]	[0.266]	[0.080]	[0.321]	[0.145]	[0.252]	[0.304]	[0.172]
	(0.115)	(0.207)	(0.141)	(0.152)	(0.185)	(0.138)	(0.101)	(0.178)	(0.172)
Mean outcome	0.038	0.037	0.037	0.037	0.021	0.037	0.037	0.035	0.019
Observations	2,080	2,074	2,074	2,074	1,977	2,074	2,074	1,653	1,463

Table A5. Robustness of remaining estimated effects (continued).

	CCT optimal bandwidth	Second-degree polynomial	Including controls	No heaping controls	Donut regressions	Rectangular kernel	Cluster at birth weight level	Singleton focal children	FC with GA < 32 weeks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Long-term income	0.082	0.256	0.091	0.045	0.095	0.014	0.095**	0.106	-0.041
	[0.104]	[0.306]	[0.162]	[0.111]	[0.242]	[0.164]	[0.214]	[0.210]	[0.058]
	(0.112)	(0.221)	(0.126)	(0.149)	(0.164)	(0.132)	(0.090)	(0.164)	(0.156)
Mean outcome	-0.068	-0.068	-0.068	-0.068	-0.082	-0.068	-0.068	-0.062	-0.005
Observations	2,155	2,074	2,074	2,074	1,977	2,074	2,074	1,653	1,465

Notes: Column headings indicate changes to the baseline specification described in the notes to Table 2. Column 1 restricts the sample to (family members of) focal children with birth weight within the optimal bandwidth suggested by Calonico et al. (2014) around the 1,500g cutoff. The specification in Column 2 includes a second-degree polynomial in birth weight, while the specification in Column 3 includes controls for focal child gestational age, gender, birth order, multiple birth, year of birth, and region of birth, as well as for mother's characteristics at the birth of the focal child, such as age, years of education, marital status, immigrant status, and an indicator for missing information on education; in addition, the specification in Panel B includes controls for sibling birth weight, gender, gestational age, birth order, multiple birth, and year of birth. The specification in Column 4 uses the baseline set of covariates but excludes the indicators for birth weight being a multiple of 50g. The sample in Column 5 excludes the (family members of) focal children with birth weight of exactly 1,500g. Column 6 uses a rectangular kernel, while the standard errors in Column 7 are clustered at the birth weight level. Columns 8 and 9 restrict the sample to (family members of) focal children from singleton births or with gestational age below 32 weeks, respectively. All other notes from Table 2 apply.

Appendix Table A6: Discontinuities in selected outcomes and alternative aggregated outcomes of focal children across the VLBW cutoff

	(1)
A. Short-term health	
28-day mortality	-0.041**
	[-0.077]
	(0.031)
Mean outcome	0.062
Observations	2,156
1-year mortality	-0.054**
	[-0.098]
	(0.043)
Mean outcome	0.077
Observations	2,156
B. Academic achievement	
Language test score	0.229*
	[0.419]
	(0.235)
Mean outcome	-0.185
Observations	939
Math test score	0.315**
	[0.556]
	(0.218)
Mean outcome	-0.259
Observations	926
Enrolled in academic track at age 18	0.013
	[0.075]
	(0.080)
Mean outcome	0.344
Observations	2,156
Enrolled beyond compulsory schooling at age 18	0.040
	[0.093]
	(0.071)
Mean outcome	0.681
Observations	2,156

Appendix Table A6: Discontinuities in selected outcomes and alternative aggregated outcomes of focal children across the VLBW cutoff (continued)

	(1)
C. Childhood disability	
ADHD diagnosis by age 10	0.004
	[-0.002]
	(0.015)
Mean outcome	0.008
Observations	2,156
Intellectual disability diagnosis by age 10	0.001
	[0.004]
	(0.019)
Mean outcome	0.015
Observations	2,156
Behavioral or emotional disorder diagnosis by age 10	0.008
	[0.006]
	(0.021)
Mean outcome	0.021
Observations	2,156
Epilepsy diagnosis by age 10	-0.001
	[-0.012]
	(0.012)
Mean outcome	0.018
Observations	2,156
Cerebral palsy diagnosis by age 10	0.021
	[0.028]
	(0.020)
Mean outcome	0.017
Observations	2,156

Appendix Table A6: Discontinuities in selected outcomes and alternative aggregated outcomes of focal children across the VLBW cutoff (continued)

	(1)
D. Health during school years	
Probability of a hospital admission between ages 6-15	-0.118**
	[-0.163]
	(0.065)
Mean outcome	0.243
Observations	1,960
Probability of an ER visit between ages 6-15	-0.067
	[-0.041]
	(0.089)
Mean outcome	0.422
Observations	1,619

Notes: Sample of focal children with birth weight within a 200g bandwidth around the 1,500g cutoff and gestational age of at least 32 weeks. Each cell reports the estimated coefficient of the *VLBW* variable from a separate local-linear regression with a triangular kernel of the outcome listed in the row. All regressions control for heaping at multiples of 50g. Bias-corrected estimates are listed in square brackets and robust standard errors in brackets. The mean of the outcome is reported for focal children with birth weight above 1,500g. Stars indicate statistical significance (*** significant at 1%, ** at 5%, * at 10%) based on robust confidence intervals centered on the bias-corrected estimates (for details, see Calonico et al., 2014, 2019).

Appendix Table A7: Discontinuities in alternative aggregated outcomes of parents across the VLBW cutoff

	Mother		Father	
	Focal child age 0-5 (1)	Focal child age 6-10 (2)	Focal child age 0-5 (3)	Focal child age 6-10 (4)
A. Labor market outcomes				
Average days worked per year	10.136*	4.674	5.910	13.461*
	[23.706]	[8.061]	[19.628]	[29.794]
	(13.866)	(14.942)	(14.808)	(15.577)
Mean outcome	120.663	145.480	183.093	183.045
Observations	2,151	2,119	2,108	2,070
Labor force participation	-0.031	0.032	-0.024	0.052**
	[-0.029]	[0.026]	[0.005]	[0.100]
	(0.049)	(0.052)	(0.044)	(0.049)
Mean outcome	0.874	0.841	0.914	0.868
Observations	2,151	2,119	2,108	2,070
B. Income				
Average log yearly income	0.041	0.247	-0.074	0.181*
(thousands 2015 DKK)	[0.258]	[0.358]	[0.142]	[0.496]
	-0.257	-0.285	-0.266	-0.297
Mean outcome	4.494	4.462	5.386	5.103
Observations	2,152	2,122	2,109	2,071
C. Mental health				
Ever filled an antidepressant	-0.060***	-0.033	0.006	0.032
prescription	[-0.067]	[-0.044]	[0.023]	[0.051]
	(0.021)	(0.032)	(0.053)	(0.050)
Mean outcome	0.045	0.046	0.033	0.045
Observations	689	1,585	669	1,555

Notes: Sample of parents of focal children with birth weight within a 200g bandwidth around the 1,500g cutoff and gestational age of at least 32 weeks. Each cell reports the estimated coefficient of the *VLBW* variable from a separate local-linear regression with a triangular kernel of the outcome listed in the row for the parent listed in the super-column, averaged or over the years indicated in the column. All regressions control for heaping at multiples of 50g. Bias-corrected estimates are listed in square brackets and robust standard errors in brackets. The mean of the outcome is reported for parents of focal children with birth weight above 1,500g. Stars indicate statistical significance (*** significant at 1%, ** at 5%, * at 10%) based on robust confidence intervals centered on the bias-corrected estimates (for details, see Calonico et al., 2014, 2019).

Appendix Table A8: Discontinuities in selected outcomes and alternative aggregated outcomes of siblings across the VLBW cutoff

	(1)
A. Health	
Admitted to hospital, focal child age 0-5	0.041
	[0.073]
	(0.071)
Mean outcome	0.420
Observations	2,819
Admitted to hospital, focal child age 6-10	0.033
	[-0.015]
	(0.057)
Mean outcome	0.256
Observations	3,244
Admitted to ER, focal child age 6-10	0.063*
	[0.183]
	(0.104)
Mean outcome	0.464
Observations	1,220

Appendix Table A8: Discontinuities in selected outcomes and alternative aggregated outcomes of siblings across the VLBW cutoff (continued)

	(1)
B. Academic achievement	
Language test score	0.386**
	[0.477]
	(0.199)
Mean outcome	-0.155
Observations	1,510
Math test score	0.255**
	[0.415]
	(0.180)
Mean outcome	-0.213
Observations	1,516
Enrolled in academic track at age 18	0.088**
	[0.156]
	(0.074)
Mean outcome	0.383
Observations	2,759
Enrolled beyond compulsory schooling at age 18	0.051
	[0.017]
	(0.061)
Mean outcome	0.781
Observations	2,759

Notes: Sample of siblings of focal children with birth weight within a 200g bandwidth around the 1,500g cutoff and gestational age of at least 32 weeks. Each cell reports the estimated coefficient of the *VLBW* variable from a separate local-linear regression with a triangular kernel of the outcome listed in the row. All regressions control for heaping at multiples of 50g. Bias-corrected estimates are listed in square brackets and robust standard errors in brackets. The mean of the outcome is reported for parents of focal children with birth weight above 1,500g. Stars indicate statistical significance (*** significant at 1%, ** at 5%, * at 10%) based on robust confidence intervals centered on the bias-corrected estimates (for details, see Calonico et al., 2014, 2019).

Appendix Table A9: Effects of VLBW classification on focal child and sibling academic achievement along the distribution of test scores

	Test score index	
	Focal child	Siblings
	(1)	(2)
20th percentile	0.106	0.251**
	(0.104)	(0.122)
40th percentile	0.142	0.310**
	(0.145)	(0.133)
60th percentile	0.352**	0.369***
	(0.171)	(0.137)
80th percentile	0.392***	0.402***
	(0.116)	(0.129)
Observations	1,520	2,709
Bandwidths:		
Below cutoff	183.660	187.445
Above cutoff	312.101	350.068
Raw data, (siblings of) non-VLBW focal children:		
20th percentile	-1.094	-1.121
40th percentile	-0.445	-0.447
60th percentile	-0.047	0.069
80th percentile	0.640	0.671

Notes: Sample of (siblings of) focal children with gestational age of at least 32 weeks with birth weight within the bandwidths indicated in the table around the 1,500g cutoff. The raw data quantiles are calculated among (siblings of) focal children with birth weight above 1,500g. Standard errors in brackets. Stars indicate statistical significance (*** significant at 1%, ** at 5%, * at 10%).

Appendix Table A10: Effects of VLBW classification on family outcomes as a function of focal child characteristics

	Focal child survives first year of life	Focal child plurality		Focal child gender	
		Singleton	Twin	Boy	Girl
	(1)	(2)	(3)	(4)	(5)
A. Focal child					
Mortality	---	-0.630**	-0.088	0.362	-1.708***
		[-1.025]	[-1.013]	[-0.229]	[-2.203]
		(0.476)	(0.675)	(0.569)	(0.552)
Mean outcome		0.783	0.507	0.643	0.824
Observations		1,718	438	1,168	988
Long-term health	---	-0.268*	-0.486***	-0.288***	-0.380
		[-0.337]	[-0.723]	[-0.423]	[-0.408]
		(0.173)	(0.265)	(0.157)	(0.279)
Mean outcome		0.062	-0.046	-0.019	0.108
Observations		1,549	411	1,066	894
Test scores	---	0.223**	0.664	0.370**	0.247
		[0.553]	[0.673]	[0.620]	[0.486]
		(0.255)	(0.562)	(0.294)	(0.414)
Mean outcome		-0.230	-0.345	-0.219	-0.302
Observations		743	209	522	430
B. Siblings					
Test scores	0.411**	0.358***	0.519	0.381	0.362**
	[0.519]	[0.572]	[0.283]	[0.430]	[0.619]
	(0.209)	(0.214)	(0.432)	(0.288)	(0.256)
Mean outcome	-0.216	-0.211	-0.239	-0.184	-0.252
Observations	1,355	1,311	228	808	731
C. Mother					
Short-term health	-0.203	-0.206	-0.810***	-0.565**	-0.111*
	[-0.120]	[-0.222]	[-0.749]	[-0.492]	[-0.172]
	(0.078)	(0.156)	(0.195)	(0.222)	(0.097)
Mean outcome	0.031	0.051	0.015	0.061	0.022
Observations	632	524	165	362	327

Notes: Column headings indicate the subsample of (family members of) focal children in which the baseline regression is estimated. Column 1 restricts the sample to (family members of) focal children who survive past the first year of life. Columns 2 and 3 estimate the baseline regressions separately in the sample of (family members of) singleton and multiple focal child births, while Columns 4 and 5 restrict the sample to (family members of) boy and girl focal children. All other notes from Table 2 apply.

Appendix Table A11: Effects of VLBW classification on sibling academic achievement by sibling initial health endowment

	Sibling birth weight	
	Above median	Below median
	(1)	(2)
Test score index	0.663**	0.259*
	[0.984]	[0.380]
	(0.463)	(0.211)
Mean outcome	-0.066	-0.266
Observations	406	1,133
Language test score	0.577*	0.302*
	[0.766]	[0.379]
	(0.443)	(0.228)
Mean outcome	-0.097	-0.175
Observations	401	1,109
Math test score	0.550**	0.142
	[0.901]	[0.272]
	(0.414)	(0.191)
Mean outcome	-0.013	-0.281
Observations	404	1,112

Notes: Sample of siblings of focal children with birth weight within a 200g bandwidth around the 1,500g cutoff and gestational age of at least 32 weeks. Each cell reports the estimated coefficient of the *VLBW* variable from a separate local-linear regression with a triangular kernel of the outcome listed in the row in the subsample indicated in the column. All regressions control for heaping at multiples of 50g. Bias-corrected estimates are listed in square brackets and robust standard errors in brackets. The mean of the outcome is reported for parents of focal children with birth weight above 1,500g. Stars indicate statistical significance (*** significant at 1%, ** at 5%, * at 10%) based on robust confidence intervals centered on the bias-corrected estimates (for details, see Calonico et al., 2014, 2019).