Age Culture, School-Entry Cutoff and the Choices of Birth Month and School-Entry Timing in South Korea

Online Appendix

Taehoon Kim

In the Appendix, Figures and Tables that are not included in the body of this paper are presented. Figure A1 and A2 present the average raw number of daily births for the years 1997-2007 and 2008-2016, respectively, while the average regression-adjusted number of daily births are presented in the main text. Figure A1 depicts the average number of daily births in November through February by place of birth for the years 1997-2007. Figure A2 describes the average number of daily births in November through February by place of birth for the years 2008-2016. Figure A3 presents the average raw number of daily births that both parents are either a foreigner or a naturalized Korean for the years 2008-2016. The information on the nationality of parents is available from 2008. This is to examine whether the January birth preference of Koreans is affected by the Korean age culture. Because foreigners are not largely affected by the Confucian age culture, they would not have the January birth preference. The large increase in the number of daily births on January 1 is not found for births from foreigners even though the number of daily births is very small. Figure A4 and Figure A5 show the average raw number of daily births in January through April by place of birth for the years 1997-2007 and 2008-2016, respectively. Table A1 reports summary statistics for December and January births for three different periods, which are the whole period(1997-2016), the period before the announcement of the cutoff change(1997-2007), and the period after the announcement of the cutoff change(2008-2016), respectively. Table A2 and A3 presents the estimation results for the effects of a January birth on parental characteristics and birth outcomes for births at home and births in hospitals, respectively. Table A3 shows the estimation results for the effects of a January birth on birth weight and gestation after controlling parental characteristics. The estimation results show that birth weight is heavier and gestation is longer for January births than December births even after controlling parental characteristics. Table A4 and A5 report the estimation results for the March effect on the number of home births and the number of births in hospitals, respectively.

Figure A1: The Average Raw Number of Births around January 1 by Birthdate and Birthplace before the Announcement of Cutoff Change: 1997-2007
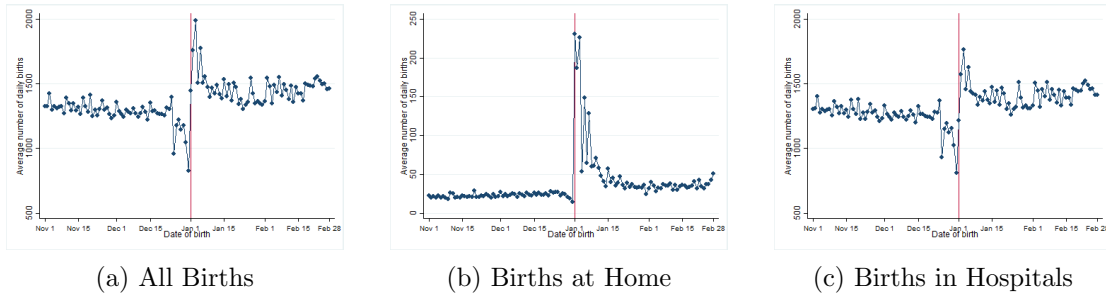

(a) All Births   (b) Births at Home   (c) Births in Hospitals

Figure A2: The Average Raw Number of Births around January 1 by Birthdate and Birthplace after the Announcement of Cutoff Change: 2008-2016

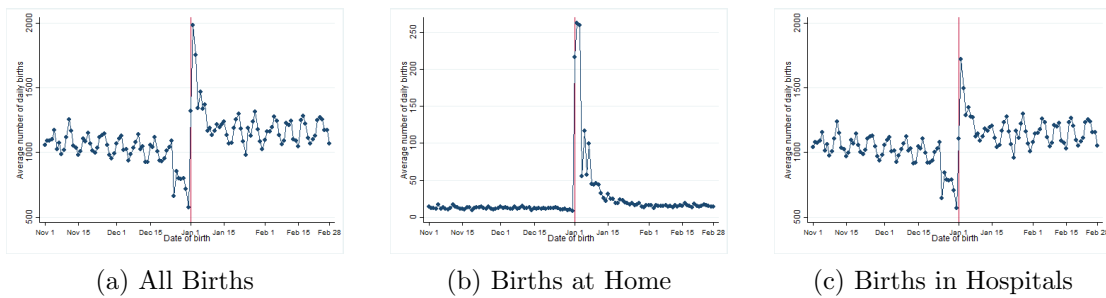(a) All Births   (b) Births at Home   (c) Births in Hospitals

Figure A3: The Average Raw Number of Births from Households That Both Parents Are Either a Foreigner or a Naturalized Korean by Birthdate and Birthplace

(a) All Births   (b) Births at Home   (c) Births in Hospitals

Figure A4: The Average Raw Number of Births around March 1 by Birthdate and Birthplace before the Announcement of Cutoff Change: 1997-2007

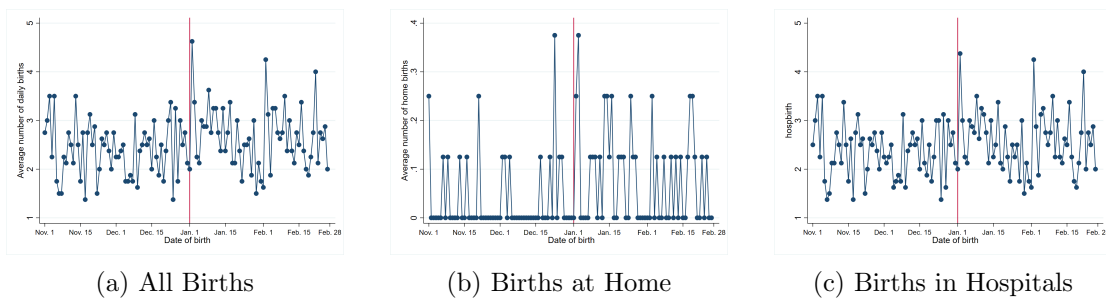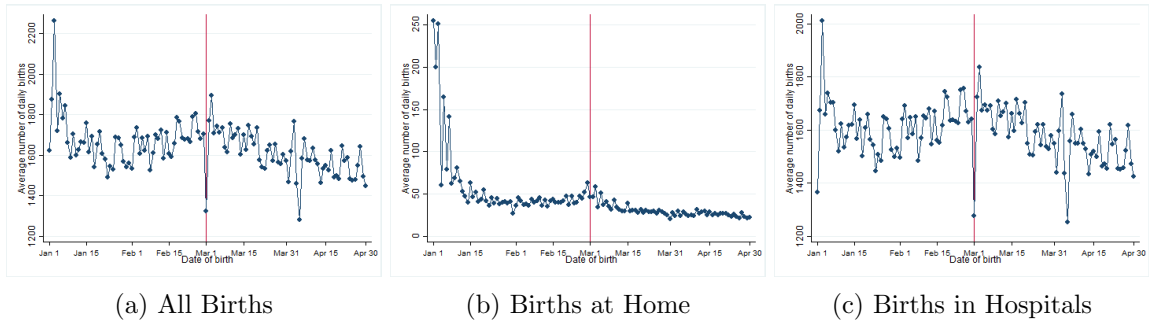(a) All Births   (b) Births at Home   (c) Births in Hospitals

Figure A5: The Average Raw Number of Births around March 1 by Birthdate and Birthplace after the Announcement of Cutoff Change

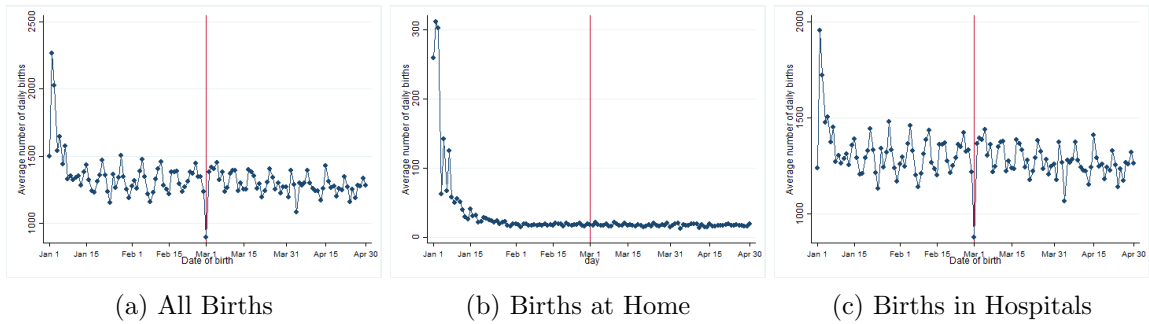(a) All Births   (b) Births at Home   (c) Births in Hospitals

Table A1: Summary Statistics for Births in December and January

Sample period	1997-2016		1997-2007		2008-2016	
Birth month	December	January	December	January	December	January
Average Number of Daily Births						
All	1240.1	1558.6	1489.4	1692.9	1083.5	1396.9
Home	14.0	56.5	19.9	60.5	8.3	48.9
Hospital	1226.1	1502.0	1469.5	1632.4	1075.1	1348.0
Gender (Male=1)	0.515	0.518	0.518	0.521	0.510	0.515
	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)
Father Any College	0.584	0.603	0.517	0.523	0.700	0.716
	(0.493)	(0.489)	(0.500)	(0.499)	(0.458)	(0.451)
Mother Any College	0.530	0.550	0.435	0.436	0.694	0.711
	(0.499)	(0.498)	(0.496)	(0.496)	(0.461)	(0.453)
Father Occupation	0.221	0.230	0.185	0.192	0.283	0.291
(managerial or professional job=1)	(0.415)	(0.421)	(0.388)	(0.394)	(0.450)	(0.454)
Mother Occupation	0.083	0.088	0.055	0.057	0.131	0.135
(managerial or professional job=1)	(0.276)	(0.282)	(0.229)	(0.231)	(0.338)	(0.341)
Father Age	32.5	32.6	31.8	31.7	33.7	33.8
	(4.51)	(4.44)	(4.27)	(4.18)	(4.66)	(4.54)
Mother Age	29.7	29.8	28.9	28.8	31.0	31.2
	(4.21)	(4.16)	(4.00)	(3.93)	(4.21)	(4.11)
Birth Weight (kg)	3.24	3.25	3.26	3.27	3.21	3.22
	(0.470)	(0.462)	(0.466)	(0.459)	(0.475)	(0.466)
Gestation (Week)	38.9	39.0	39.1	39.2	38.6	38.7
	(1.67)	(1.61)	(1.61)	(1.55)	(1.74)	(1.65)
First Child	0.526	0.509	0.515	0.504	0.546	0.514
	(0.499)	(0.500)	(0.500)	(0.500)	(0.498)	(0.500)

Notes: 1.Data source: Vital Statistics. 2.Standard deviations are in parenthesis.

Table A2: Differences in Parental Characteristics and Birth Outcomes Between December and January Births at Home

	(1)	(2)	(3)	(4)
	±7 days	±14 days	±21 days	±28 days
Sex (Male=1)	0.047***	0.042***	0.039***	0.037***
	(0.016)	(0.011)	(0.009)	(0.007)
Father College	0.276***	0.248***	0.225***	0.215***
	(0.012)	(0.009)	(0.008)	(0.008)
Mother College	0.269***	0.246***	0.231***	0.217***
	(0.012)	(0.009)	(0.008)	(0.007)
Father Occupation	0.064***	0.059***	0.050***	0.049***
(managerial or professional job=1)	(0.008)	(0.006)	(0.005)	(0.005)
Mother Occupation	0.049***	0.043***	0.039***	0.037***
(managerial or professional job=1)	(0.005)	(0.004)	(0.003)	(0.003)
Father Age	-1.131***	-0.912***	-0.745***	-0.683***
	(0.140)	(0.098)	(0.085)	(0.078)
Mother Age	-0.292*	-0.322***	-0.215**	-0.244***
	(0.176)	(0.114)	(0.096)	(0.087)
Birth Weight (kg)	0.053***	0.044***	0.031***	0.025***
	(0.011)	(0.007)	(0.006)	(0.006)
Gestation (Week)	0.254***	0.218***	0.156***	0.142***
	(0.048)	(0.031)	(0.026)	(0.022)
First Child	-0.018	-0.028***	-0.029***	-0.029***
	(0.013)	(0.009)	(0.007)	(0.007)

Notes: 1. *** $p<0.01$, ** $p<0.05$, * $p<0.10$. 2. Standard errors are in parenthesis. Standard error are clustered by date of birth. 3. Covariates are a January birth Dummy, day of week dummies, a holiday dummy, and year dummies. Standard error are clustered by date of birth.

Table A3: Differences in Parental Characteristics and Birth Outcomes Between December and January Births in Hospitals

	(1) ±7 days	(2) ±14 days	(3) ±21 days	(4) ±28 days
Sex (Male=1)	0.005***	0.002*	0.001	0.001
	(0.002)	(0.001)	(0.001)	(0.001)
Father College	0.021***	0.016***	0.013***	0.012***
	(0.002)	(0.001)	(0.001)	(0.001)
Mother College	0.019***	0.016***	0.013***	0.012***
	(0.002)	(0.001)	(0.001)	(0.001)
Father Occupation	0.005***	0.006***	0.005***	0.006***
(managerial or professional job=1)	(0.001)	(0.001)	(0.001)	(0.001)
Mother Occupation	0.003***	0.002***	0.002***	0.002***
(managerial or professional job=1)	(0.001)	(0.001)	(0.001)	(0.000)
Father Age	0.169***	0.082***	0.060***	0.051***
	(0.018)	(0.015)	(0.012)	(0.010)
Mother Age	0.252***	0.143***	0.099***	0.081***
	(0.021)	(0.017)	(0.014)	(0.011)
Birth Weight (kg)	0.033***	0.021***	0.014***	0.012***
	(0.002)	(0.002)	(0.002)	(0.001)
Gestation (Week)	0.043***	0.035***	0.020***	0.014***
	(0.008)	(0.007)	(0.006)	(0.005)
First Child	-0.055***	-0.034***	-0.026***	-0.021***
	(0.004)	(0.003)	(0.002)	(0.002)

Notes: 1. *** p<0.01, ** p<0.05, * p<0.10. 2. Standard errors are in parenthesis. Standard error are clustered by date of birth. 3. Covariates are a January birth Dummy, day of week dummies, a holiday dummy, and year dummies.

Table A4: Differences in Birth Weight and Gestation Between December and January Births by Place of Birth after Controlling Parental Characteristics

	(1) ±7 days	(2) ±14 days	(3) ±21 days	(4) ±28 days
(a) All births				
Birth Weight (kg)	0.032***	0.020***	0.014***	0.012***
	(0.002)	(0.002)	(0.001)	(0.001)
Gestation (Week)	0.067***	0.049***	0.029***	0.022***
	(0.009)	(0.007)	(0.006)	(0.005)
(b) Births at Home				
Birth Weight (kg)	0.013***	0.006***	0.003	0.004
	(0.003)	(0.003)	(0.003)	(0.002)
Gestation (Week)	0.272***	0.280***	0.269***	0.269***
	(0.015)	(0.014)	(0.012)	(0.012)
(c) Births in Hospitals				
Birth Weight (kg)	0.034***	0.021***	0.015***	0.013***
	(0.002)	(0.002)	(0.002)	(0.001)
Gestation (Week)	0.048***	0.034***	0.017***	0.011**
	(0.008)	(0.007)	(0.006)	(0.005)

Notes: 1. *** p<0.01, ** p<0.05, * p<0.10. 2. Standard errors are in parenthesis. Standard error are clustered by date of birth. 3. Covariates are a January birth Dummy, day of week dummies, holiday dummy, parental education dummies, parental occupation dummies, ages of parents, and year dummies.

Table A5: Test of the March Birth Preference: Comparison of the Number of Home Births in February and March

	(1) ±7 days	(2) ±14 days	(3) ±21 days	(4) ±28 days
(a)Births before the announcement of cutoff change (Feb. 1997-Mar. 2006)				
# of Births	-2.5	-5.2***	-6.6***	-7.7***
	(2.5)	(1.5)	(1.2)	(1.0)
# of Births Moved	-9	-36	-69	-108
Log (# of Births)	0.001	-0.104**	-0.147***	-0.187***
	(0.074)	(0.042)	(0.032)	(0.026)
Share of Births Moved	0.1%	-5.1%	-7.1%	-8.9%
Observations	140	280	420	560
(b)Births after the announcement of cutoff change (Feb. 2008-Mar. 2016)				
# of Births	0.0	-0.3	-0.6	-0.6
	(1.0)	(0.7)	(0.5)	(0.4)
# of Births Moved	0	-2	-6	-8
Log (# of Births)	0.001	-0.007	-0.042	-0.039
	(0.062)	(0.044)	(0.035)	(0.030)
Share of Births Moved	0.1%	-0.3%	-2.1%	-1.9%
Observations	126	252	378	504

Notes: 1. *** p<0.01, ** p<0.05, * p<0.10. 2. Standard errors are in parenthesis. Standard error are clustered by date of birth. 3. Covariates are a January birth Dummy, day of week dummies, a holiday dummy, and year dummies. 4. The number of births moved for a window is calculated as $\frac{n\hat{\alpha_1}}{2}$, where n is the number of days in the window and $\hat{\alpha_1}$ is the estimate for the March effect. The share of births moved is calculated as $\exp(\frac{\hat{\alpha_1}}{2})$.

Table A6: Test of the March Birth Preference: Comparison of the Number of Hospital Births in February and March

	(1) ±7 days	(2) ±14 days	(3) ±21 days	(4) ±28 days
(a)Births before the announcement of cutoff change (Feb. 1997-Mar. 2006)				
# of Births	62.6**	25.4	15.4	-8.9
	(29.6)	(18.1)	(14.3)	(12.6)
# of Births Moved	219	178	162	-125
Log (# of Births)	0.031**	0.012	0.013*	-0.004
	(0.012)	(0.009)	(0.008)	(0.007)
Share of Births Moved	1.6%	0.6%	0.7%	-0.2%
Observations	140	280	420	560
(b)Births after the announcement of cutoff change (Feb. 2008-Mar. 2016)				
# of Births	35.3	7.0	-11.1	-27.2*
	(30.2)	(21.3)	(17.7)	(15.3)
# of Births Moved	124	49	-117	-381
Log (# of Births)	0.029	0.012	-0.002	-0.015
	(0.025)	(0.018)	(0.015)	(0.013)
Share of Births Moved	1.5%	0.6%	-0.1%	-0.7%
Observations	126	252	378	504

Notes: 1. *** p<0.01, ** p<0.05, * p<0.10. 2. Standard errors are in parenthesis. 3. Covariates are a January birth Dummy, day of week dummies, a holiday dummy, and year dummies. 4. The number of births moved for a window is calculated as $\frac{n\hat{\alpha_1}}{2}$, where n is the number of days in the window and $\hat{\alpha}_1$ is the estimate for the March effect. The share of births moved is calculated as $\exp(\frac{\hat{\alpha_1}}{2})$.