

# Child Gender and Parental Investments: No More Son Preference in Korea?

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Son preference has persisted across many generations, particularly in patriarchal Asian societies. This is well represented by the grossly skewed sex ratio at birth: 112 in China, India, and Vietnam.<sup>1</sup> Advanced technologies that allow prenatal sex selection (e.g. ultra-sound) and the increasing desire for smaller families have induced more parents to opt for their preferred – male – child.

However, South Korea (hereafter, Korea), which shares many of the traditional norms with nearby countries, seems to be heading towards gender neutrality. Sex ratio at birth which surpassed 116 in 1990, is now 105, the natural ratio. Although there is still some bias among higher birth order, Korea is no longer a country with thousands of “missing women” [Sen (1992); Edlund and Lee (2013)].

Does the recovery of a natural sex ratio imply that son preference has disappeared in Korea? This paper studies differences in parents’ time and monetary inputs by the sex of their child. Although the decline in sex ratio at birth may reflect changes in underlying preferences regarding child gender overall, it is also possible that discrimination still exists in how boys and girls are treated *after* birth. In the latter case, gender differences in parental treatment could result in non-trivial differences in human capital accumulation and career choices. We investigate whether there are boy-girl differences in labor force participation of parents, types and frequencies in parental activities, expenditures on private education, and parents’ expectation regarding their academic achievement. Our analysis is focused on evidence during the past decade.

Research in parental investment has been conducted in many other countries, but Korea is a particularly interesting case to study for the following reasons.<sup>2</sup> First, Korea is the only Asian country that is showing signs of escaping the once deeply-rooted son preference culture.<sup>3</sup> The transition could provide insights into how other developing countries may change in the near future. Second, like the U.S., Korea’s college entrance rate is now higher among women than men. However, Korea lags behind other developed countries in female labor force participation and women’s relative wage (to men’s).<sup>4</sup> Investigating how much parents invest in their sons versus daughters, and hence

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<sup>1</sup>Numbers are 2013 estimates available from the CIA World Factbook. For more details, see <https://www.cia.gov/library/publications/the-world-factbook/fields/2018.html> (accessed February 26, 2014).

<sup>2</sup>Previous studies look at the effect of child gender on fertility [Abrevaya (2009); Almond et al. (2013); Edlund and Lee (2013)], marriage probability and stability [Dahl and Moretti (2008)], parents’ labor supply [Lundberg and Rose (2002); Choi et al. (2005)], health inputs [Jayachandran and Kuziemko (2011); Barcellos et al. (2014)], and educational inputs [Kang (2011); Baker and Milligan (2013)]. They find a significant boy-girl difference in both developing and developed countries. The results also show that the gender differences are much larger in developing countries. See Lundberg (2005); Bharadwaj et al. (Forthcoming) for an overview of the literature on child gender and family behavior.

<sup>3</sup>In Taiwan and Hong Kong, sex ratio at birth had been increasing until very recently and suddenly dropped to around 107 in the past couple years. It is yet too early to determine whether sex imbalance has improved in these countries. Korea is unique in that the ratio of males to females at birth has been declining for over two decades after soaring in the 1980s and reaching a peak in 1990. Consequently, in 2008, the Korean Constitutional Court overturned the longstanding ban against the disclosure of a fetus’ gender. Sex ratio at birth has been remaining around the natural ratio of 106 without the ban for the past several years.

<sup>4</sup>According to OECD Employment Outlook 2013, employment to population ratio among women aged 15–64 in

understanding what parents expect from their children may help answer some of the seemingly incongruent gap in women’s educational attainment and their labor market outcomes.

To study parental time and monetary investments on various dimensions, we use data from several sources, including Korean Population Census, Korean Labor and Income Panel Survey (KLIPS), Korean Time Use Survey (KTUS), Korean Education Longitudinal Study (KELS), and Private Education Survey (PEDU).

Our empirical strategy exploits randomness of the first child’s sex to overcome potential bias from endogenous fertility decisions. Throughout the sample period, sex ratio at birth for first-born children shows no evidence of sex-selective abortion (Census). Also, our data shows no statistically significant differences in various observable characteristics between parents whose first child is male and female. Even in the absence of sex-selective abortion, however, the child gender in higher birth parity may be correlated with parents’ preference on child gender if there are parents employing the son-biased fertility stopping rule. Because girls in higher birth parity are less likely to be born in families biased against girls, boy-girl difference estimates from analyses including all children would possibly be biased downwards.

Findings from KLIPS and KTUS provide evidence of important differences in time allocations – both parent’s and child’s – by child gender. Mothers of girls are more likely to be working (and to be full-time working) compared to mothers of boys, and the result holds with regards to not only the first child but also the sex composition of siblings among two children households (for instance, conditional on being employed, mothers with two daughters are 9 percentage points more likely to work full-time compared to mothers with two sons). In Figure 1, we observe that the difference is not due to characteristics before first childbirth but arise thereafter, as mothers of girls return to work relatively more than mothers of boys. As for the time use of children, we find that girls spend twice as much time as boys (of the same age) in housework activities such as meal preparation and cleaning the house. That is, even at young ages, stereotypical gender roles seem to arise in the household.

The effects of offspring gender on parents’ monetary inputs are studied using PEDU and KELS. Private education spending consists a major component of parental monetary inputs in Korea.<sup>5</sup> Table 1 presents that monthly expenditures on private education are on average 27 dollars higher for first-born boys than for first-born girls at middle school. When we also include children at higher order births, the difference becomes half to 14 dollars per month, possibly due to the downward bias arising from the son-biased fertility stopping rule. Higher expenditures on boys may reflect higher expectation regarding their academic achievement. Parents expect their sons to receive slightly more education than daughters (columns 3–4 in Table 1). Further analysis indicates that the boy-girl difference in private education spending existed at all secondary school levels in the mid-2000s but has become much smaller nowadays.

In sum, the paper provides evidence that in a transitional phase, boy-girl differences may not arise in terms of sex ratio at birth, but may appear after birth in forms of parents’ time and monetary investments. In developing countries, we observe serious sex imbalance in abortions and infant health outcomes. In developed countries, child gender is shown to affect marital stability and time use of parents, but the effect is usually small in magnitude. Studying the Korean context, findings from this paper would help bridge the gap between the existing research in developing and developed countries. The paper would also have important implications for other Asian countries where son preference remains strong till this day.

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Korea ranks 25th out of 34 countries (at 53.5 percent), and the gender earnings gap remains the largest (at 37 percent).

<sup>5</sup>Authors’ calculation using PEDU shows that about 70 percent of K-12 students received some kind of private education, such as private tutoring, group tutoring, cram schools, or online courses.

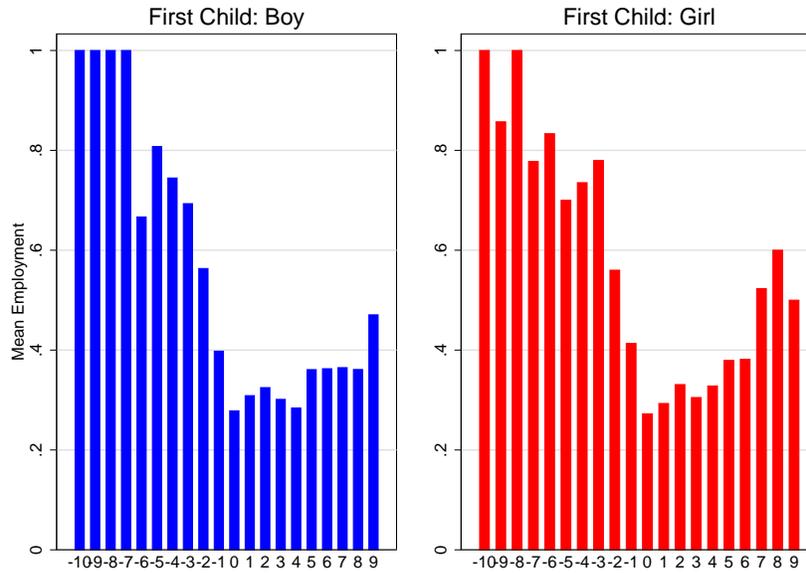


Figure 1: Mother’s Employment by Year Relative to First Childbirth

Notes. Data from 11 waves of KLIPS (1998–2008). Fraction employed among women by year relative to first childbirth.

Table 1: Boy-Girl Differences in Parents’ Educational Input and Expectation

	Private education spending		Years of education expected by parents	
	all	1st child	all	1st child
Male=1	13.63	27.38	0.30	0.33
	(6.52)**	(9.69)***	(0.05)***	(0.08)***
adj. $R^2$	0.20	0.20	0.17	0.18
N	4122	2100	4295	2154

Notes. Data from the first wave of KELS (2005). Parents’ expenditures in 1000 KRW per month. 1000 KRW is worth approximately 1 USD. Controls include household income, home ownership status, number of siblings, parents’ age, education, and work status. Region fixed effects and 6th grade academic record are also controlled. Robust standard errors in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

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