

Infant and Child Sex Ratios across the USA in 1860 (Free Populations)¹

* The US sex-ratio data for 1860 corroborate claims of important health costs to early industrialization. The Northeast led the country in urban-industrial development (e.g. Engerman 1967:87), but it was the region with the lowest infant sex ratio. The Northeast's overall SR2 of 102.6 was a full percentage point below the Midwest's, and more than 2 points below the South's (see Table USA-1860).

* Although below that of the Midwest or South, the Northeast's infant sex ratio was not low enough to suggest widespread maternal and infant misery. Notably, the Northeast's SR2 was almost 2 percentage points higher than contemporary England's (102.6 vs 100.7). So although the US featured an infant sex-ratio gradient roughly opposite to the development gradient across the regions, we suspect that maternal and infant well-being were rarely as bad as was typical of mid and later 19th-century England.

Table USA-1860: Infant and Child Sex Ratios, US Regions in 1860 (Free Populations)

	SR2	SR5	90% C.I. for SR2		SR1
Northeast	102.6	102.1	102.1	103.0	102.3
rural	103.3	102.8	102.7	103.9	102.8
urban	101.7	101.2	101.0	102.3	101.7
MidWest	103.6	103.0	103.1	104.1	102.8
rural	103.9	103.3	103.4	104.4	103.0
urban	102.1	101.0	100.9	103.3	101.7
South	104.9	104.5	104.4	105.4	104.5
rural	105.4	104.9	104.8	105.9	104.8
urban	101.2	100.7	99.8	102.6	101.8

Source: IPUMS 1860 USA Full Count sample. **Notes:** SR2 and SR5 are the under-2 and under-5 sex ratios. 90% CI is the implied 90% confidence interval for the under-age-two sex-ratio value, modelling the count of males as a binomial (with mean p and $SR=(p/(1-p))$). The SR1 is reported to illustrate the tendency for male-biased age-heaping toward age one -- for example, the SR1 for the rural South is 0.6 points below the SR2.

* The sex-ratio evidence for these free populations points to maternal and infant well-being far superior to that of the contemporary slave populations of the US. The under-5 sex ratio for US slaves in 1860 was just 97.3, a value suggestive of dreadful conditions of life for mothers, infants, and children.²

* An "urban penalty" (Kearns 1988) is evident in all three regions of the antebellum US, and especially in the South. The SR2 for the rural South was a striking 4.2 percentage points above the urban South's value. But it is worth noting that the southern urban population was not large, reflected in a fairly wide 90% confidence interval

1 A part of "Infant Sex Ratios and Maternal/Infant Health," Jesse McDevitt-Irwin & James R. Irwin; Oct. 2020

2 Male-biased age-heaping to age one in the census counts of slaves depresses the SR1, so we pool counts of under-one with the age group "one and under five" and use the under-5 sex ratio (SR5).

for the SR2. More generally, the urban populations of all three regions had infant sex-ratio values suggestive of challenges to maternal and infant health, with SR2s of about 102 or less.

* Lower urbanization can account for about one-half of the MidWest's SR2 advantage over the Northeast -- applying the Northeast's urban/rural population mix, the MidWest's overall SR2 value would have been 103.1 (0.5 percentage points lower, and halfway to the Northeast's SR2 of 102.6).

References

Engerman, Stanley L. (1967), "The Effects of Slavery on the Southern Economy." *Explorations in Entrepreneurial History*, 4:71-97.

Kearns, Gerry (1988), "The urban penalty and the population history of England." In Anders Brändström and Lars-Göran Tedebrand (ed.), *Society, Health and Population during the Demographic Transition*, pp. 213-236. Stockholm: Almqvist and Wiksell International