

METHODOLOGY AND DATA COMPANION

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The Price of the Marginal Child

Methodology and data companion to the working paper

Gavriel Brown, PhD

A full white paper, with the complete introduction, related literature, data and design, results, discussion, limitations, conclusion, and references, is available on request.

© 2026 Heshbon and the author. This companion explains how the working paper was built and how to read its results. It can be shared and cited with attribution.

At a glance

Research question	What does a fourth child, and then a fifth, actually cost an Orthodox household once lumpy threshold costs are counted rather than smoothed away, and where would that cost plausibly push a family to stop?
Data	Cost parameters from Heshbon's Community Database (housing ladder, tuition stack, tax and insurance rates), reused through the project's all-in cost model.
Unit of analysis	The stylized community structure (yeshivish, modern Orthodox, and out-of-town), calibrated to representative communities, rather than an individual family.
Statistical method	A calibrated cost-accounting model, a marginal-cost step function, paired with a stylized fertility-response model.
Headline finding	The fourth child costs about \$38,800 a year in the modern Orthodox structure but the schedule falls with parity in the yeshivish structure, from about \$12,600 to about \$7,100; the notch is community-structured.
What it shows	The marginal cost of a child is a step function, and the step sits at a different parity in each community.

The question behind the paper

The usual way of accounting for the cost of a child treats each additional child as a roughly constant increment, so a family already paying for four simply adds a fifth. This paper argues that the increment is a step function instead, rising in discrete jumps whose location and size differ sharply by community. The inspiration is the car-seat literature, in which a third child forces a larger vehicle and so suppresses third births, not because a car seat is expensive but because of the lumpy purchase it triggers.

The research question has two parts. First, what is the true marginal cost of the fourth and then the fifth child once these lumpy thresholds are counted. Second, does the size of the step at a given parity plausibly push families to stop one child short of the number they intended.

Where the data come from

The Community Database. The cost parameters come from Heshbon's Community Database: a bedroom price ladder, a tuition stack by grade level, state property-tax and insurance rates, voucher regimes, and income levels. These are calibrated to real communities but stylized into structures rather than measured for any single family.

The all-in cost model. The paper reuses the project's earlier all-in cost work, which established that tuition is the single largest fixed cost for an Orthodox household, to reconstruct annual fixed cost by parity. Household composition and home size vary with the number of children according to each structure's room-sharing and grade-progression rules.

Calibration anchors. Named communities enter only as anchors, not as the object of study: Lakewood for the yeshivish structure, Teaneck for the modern Orthodox structure, and a Memphis-type community for out-of-town.

The statistical method, named and explained

This paper does not run a hypothesis test, so it reports no p-values. It builds a calibrated cost-accounting model, a marginal-cost step function, and computes the extra annual fixed cost of each additional child as the cost of a household at parity n minus the cost at parity n minus one. Housing enters through a bedroom price ladder (a four-bedroom home costs 1.28 times a three-

bedroom, a five-bedroom 1.62 times) financed with a thirty-year mortgage at 6.6 percent, tuition enters as a lifecycle-blended annual figure net of a fifteen percent aid discount and adjusted by sibling schedules and vouchers, and vehicle cost enters as discrete steps. Because these costs are lumpy, the difference between parities shows the walls directly: the parity where the schedule jumps is where a notch fires. A stylized fertility-response model, following Nickerson and Solomon (2024), then lets the probability of proceeding to the next child fall with the notch scaled by income, and it is offered as illustration rather than as an estimate from fertility data. Two assumptions, the room-sharing norm and the depth of the sibling discount, carry the results and are varied explicitly in a sensitivity analysis.

Key results from the paper

Table 1. Community structures and their calibrated parameters.

Parameter	Yeshivish	Modern Orthodox	Out-of-town
Calibration anchor	Lakewood, NJ	Teaneck, NJ	Memphis, TN
Starter 3BR home	\$600,000	\$700,000	\$430,000
Net elementary tuition	\$9,500	\$21,000	~\$4,050 post-voucher
Net high-school tuition	\$13,000	\$32,000	\$6,600 local / \$36,000 dorm
Voucher or ESA	none	none	~\$7,000 per child
Children per bedroom	3.5	1.8	2.3
Local high school	yes	yes	often absent
Representative income	\$95k to \$175k	\$350k	\$200k

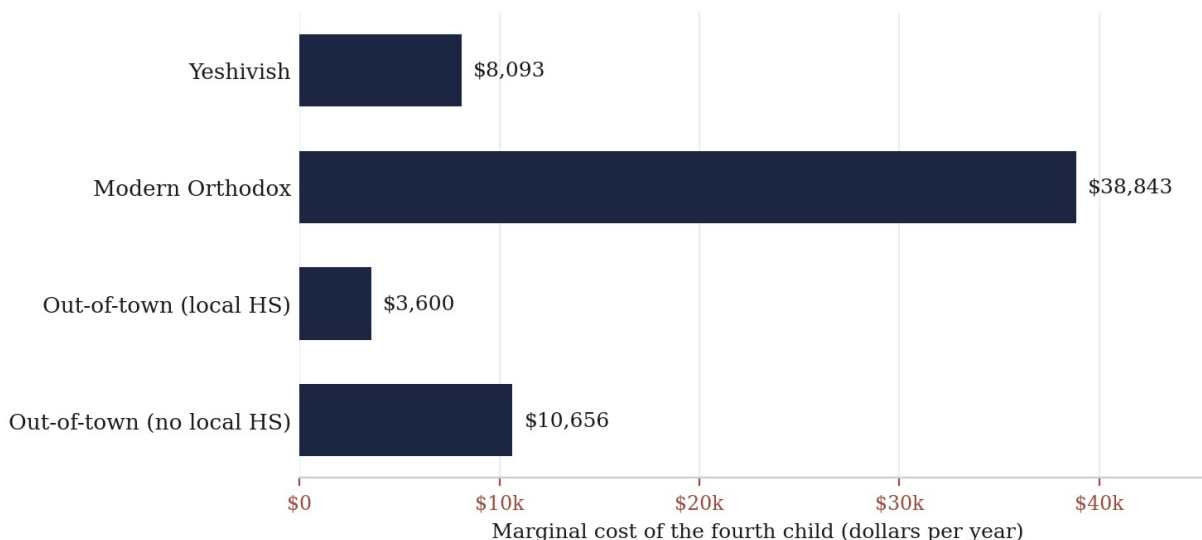
Note. Yeshivish income spans \$95k in a kollel role to \$175k working. Values are calibration anchors, not measurements of any single family.

Table 2. Marginal cost of the third, fourth, and fifth child, by structure.

Structure	3rd child	4th child	5th child	Bedroom step in window
Yeshivish	\$12,605	\$8,093	\$7,082	none
Modern Orthodox	\$26,036	\$38,843	\$21,142	3BR to 4BR
Out-of-town (local HS)	\$7,300	\$3,600	\$12,696	3BR to 4BR
Out-of-town (no local HS)	\$14,748	\$10,656	\$19,360	3BR to 4BR

Note. Steady-state annual marginal cost, computed as the cost at parity n minus the cost at parity n minus one.

Figure 1. The fourth child costs very different amounts across communities.



Note. Annual marginal cost of the fourth child, drawn from the 4th-child column of Table 2.

How to read the results

Table 2 carries the headline, and Figure 1 shows how far apart the structures sit at the fourth child. In the modern Orthodox structure the fourth child is a wall of about \$38,800 a year, of which roughly \$17,000 is a forced move from a three- to a four-bedroom home and the rest is a full, uncapped tuition, consuming about eleven percent of a \$350,000 income as a step rather than a slope. The fifth child there costs less, about \$21,000, because the bedroom step has already been paid. The yeshivish schedule runs the other way and falls with parity, because room-sharing keeps the family in a three-bedroom home and sibling discounts shrink each successive tuition, so the binding constraint is the income ceiling rather than a per-child wall. Out of town the early children are cheap, held down by the voucher and low housing, and the real step arrives on a delay, when the first teen reaches ninth grade in a town without a local high school and a dormitory-yeshiva bill of roughly \$36,000 begins to recur.

What the numbers do not claim

The marginal-cost schedules are accounting objects built from stylized parameters, as reliable as those parameters and no more, and they describe community structures rather than measured families. The fertility strand is associational by construction and illustrative rather than causal, because preferences and selection differ across the three worlds and a family that chooses one community has already

chosen its norms about bedrooms and schooling. The sensitivity analysis makes the two load-bearing assumptions explicit: a room-sharing norm of two or more children per room cuts the modern Orthodox fourth child from about \$38,800 to about \$21,800, and the yeshivish fifth child ranges from about \$10,100 with no sibling discount to about \$5,100 with a deep one. What the paper claims is narrower and sharper, that the notch structure predicts where within a community a birth would sag, a within-community prediction that is in principle testable.

Reproducing the analysis

All dollar figures are steady-state annual marginal costs computed from the Community Database parameters through the project's all-in cost model, with the calibration anchors named above. The results can be reproduced by varying the two sensitivity parameters, the room-sharing norm and the sibling-discount depth, across the ranges reported. A credible causal test of the fertility question would need community-level completed-fertility data or, better, day-school sibling-progression records that show whether families reaching a given parity are less likely to enroll a further child where the notch at that parity is larger, an enrollment-history build the project has identified as its most promising path.