

Self-Selection and Rationing Issues

Although the multivariate least squares regression model accounts for observable differences between WIC recipients and income-eligible but nonparticipating children, a problem exists if WIC recipients differ in unobservable ways from income-eligible nonparticipants, and if these unobservable differences influence nutrient intake. These unobservable differences, the result of either self-selection or rationing, may bias the regression estimates of WIC's effect on nutrient intake. Table 4 lists the most likely causes of possible biases affecting the full-sample regression model.

Biases due to self-selection can be upward, that is, in favor of WIC's effects on nutrient intake, or downward, against WIC's effects on nutrient intake. In example 1, a self-selection bias may occur when parents are unaware that their child is eligible to receive WIC benefits. These parents may be less knowledgeable about the importance of nutrition for a child's health than are parents of children who actively seek out sources of nutrition assistance. In this scenario, self-selection would result in a upward bias of the WIC program estimate.²²

²²This would happen because, after controlling for the observable differences in the characteristics of the children,

An upward bias may also result when the parents of a child who is eligible for WIC choose not to enroll the child in the program because they perceive that the stigma, cost, and/or time involved in applying for the program, picking up the food vouchers, and attending nutrition education sessions exceed the program's benefits (example 2). This may be an indication that these parents, relative to parents who do apply for WIC, are not very concerned about their child's nutritional status or motivated to improve the child's nutritional status.

However, a downward bias could result for at least two reasons. First, the parents of an eligible child could choose not to participate because their child has a low nutritional risk and they do not perceive that there is much to be gained from participating in WIC (example

their households, and geographic region, but not for these differences in nutritional knowledge, as in the full-sample regression model, the difference in nutrient intake between the two groups of children would be attributed to the effects of the WIC program. However, the group of children whose parents were not aware that their child was eligible for WIC might be less likely to receive nutritious meals (and therefore more likely to have low nutrient intake) than the children in WIC even in the absence of the WIC program.

Table 4—Possible biases affecting the full-sample regression model

Cause of bias	Type of bias	Expected direction of effect	Adjusted for in the selection bias model?
1. Parent is not aware that child is eligible for WIC	Self-selection	Upward	Yes
2. Parent chooses not to enroll eligible child in WIC due to stigma, costs, or time involved	Self-selection	Upward	Yes
3. Parent chooses not to enroll eligible child in WIC because parent perceives child not to be at a high level of risk	Self-selection	Downward	Yes
4. Parent chooses not to enroll eligible child in WIC because parent anticipates future increase in income	Self-selection	Downward	Yes
5. Child is not eligible for WIC because child does not demonstrate nutritional risk	Rationing	Downward	No
6. Child is eligible for WIC but cannot participate due to a lack of available slots	Rationing	Downward	No

3). That is, WIC participants may be more likely to be at greater nutritional risk than nonparticipants. If this is the case, then comparisons with WIC children would result in a downward bias of WIC. Second, the parents of an eligible child could choose not to participate because they anticipate future income increases (example 4).²³ These households may therefore be more similar to higher income households despite their current low incomes. Insofar as higher income households have characteristics that are correlated with higher nutrition, this will also lead to a downward bias of WIC participation.

Biases can also occur due to rationing. The WIC program limits participation in the program to persons demonstrating nutritional risk (example 5). However, since the nutritional status of children in this study is not known, WIC eligibility is proxied solely by income eligibility. Presumably, some income-eligible children are not nutritionally at risk and are therefore not eligible to participate in the program. In this case, rationing leads to a downward bias, since nonparticipating income-eligible children who are not at nutritional risk are compared with WIC children who have demonstrated nutritional risk.

²³Blank and Ruggles (1996) showed that many nonparticipants in the AFDC and Food Stamp Programs do not participate because they predicted (largely correctly) future income increases.

Rationing may also lead to a downward bias when WIC funds are not sufficient to serve all eligible applicants and the program rations limited slots among children judged to be the most at risk (example 6).²⁴ That is, children who are accepted into the WIC program have poorer nutritional status than eligible children not accepted into the program. In this case, rationing would again lead to a downward bias, since the nonparticipating children demonstrate less nutritional risk than children participating in WIC.²⁵

²⁴Children with detrimental or abnormal nutritional conditions detectable by hematological or anthropometric measurements or other documented medical conditions have a higher priority than children at risk because of an inadequate dietary pattern or with conditions that predispose children to inadequate nutritional patterns (see box, p. 3).

²⁵Rationing can also theoretically lead to an upward bias. Consider two States, one with high average nutrient intakes, the other with low average nutrient intakes. Suppose, because of limited funds, the State with low average nutrient intake has to ration more than the State with high nutrient intake. If both States ration based on nutritional risk, then the effect of WIC may be overstated because a higher proportion of high-nutrient-intake children entered the program than if rationing had been equal across the States. However, it is expected that the downward biases toward WIC due to rationing are larger than this upward bias, in which case not accounting for differences due to rationing understates the effects of WIC.