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Containing the Cost of Infant Formula to the WIC Program

by
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Nearly one half of all infants born in the U.S. today participate in the Supplemental Nutrition Program for Women, Infants, and Children (WIC). WIC expenditures make it the third-largest Federal food-assistance program, behind Food Stamps and the School-lunch program. The program annually supplies grants to local agencies to provide supplemental foods, nutrition education, and healthcare referrals to low-income pregnant, postpartum, and breastfeeding women; infants; and children up to age 5 who are at nutritional risk. In fiscal year 2006, program spending totaled \$5.3 billion with \$3.9 billion devoted to food grants. South Dakota received \$12.2 million in total WIC funds that year, with \$7.8 million spent on food.

Cost Containment Methods

WIC is a Federal program administered by local (usually state) agencies. It is a discretionary program funded annually at a level to be determined by appropriate laws, so the number of participants that can be served depends on annual appropriations as well as the cost of running the program. Containing costs enables WIC agencies to increase the number of applicants they can enroll and serve. Because food costs represent a large proportion of total program costs, states have used many practices to reduce them. For example, many states allow only the purchase of "store branded" items (e.g., Hy-Vee branded oat cereal) rather than more expensive nationally branded items (e.g., Cheerios). And, some states require the purchase of only gallon-sized containers of milk instead of more expensive half-gallon sized containers.

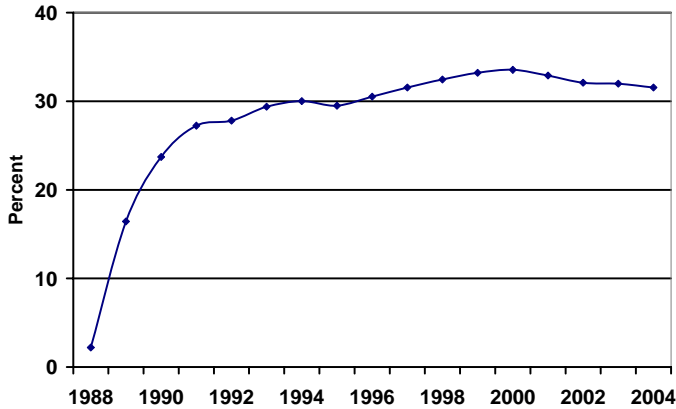
Infant formula provided to participating infants is among the most costly food items. A highly-successful cost containing practice arose during the mid-1980s largely as a consequence of the high and increasing cost of providing infant formula. Federal law allows participating infants to receive up to the equivalent of 806 reconstituted fluid ounces of formula in powder, liquid concentrate, or ready-to-feed form per month. The cost of providing these foods to infants was increasing during the late 1970s and 1980s and states became concerned the high costs were severely limiting the number of eligible persons that could be served by WIC.

In an effort to reduce these costs some states devised an auction format whereby infant-formula manufacturers could bid on the right to be a state's sole supplier of WIC infant formula. In exchange for this right, manufacturers paid the state a rebate on each can of infant formula sold through the program. Manufacturers provided sealed bids for the size of the rebate they would pay WIC for each can sold through the program. The manufacturer supplying the largest rebate, or most frequently the lowest net cost (wholesale price minus rebate) per can was awarded the exclusive right to supply formula in that state. This auction format is known as a sole-source competitive method of procuring infant formula. While manufacturers were initially hesitant to participate and supply bids (other rebate formats were also tried), over time the sole-source auction format has gained acceptance and is now the nearly universally used method for states to provide WIC infant formula. Rebates have proven very effective at reducing costs to states, as rebates have averaged about 90 to 95 percent of manufacturers' wholesale prices.

Infant-formula rebates routinely return over \$1.5 billion to the WIC program on an annual basis, an amount that supports about one-quarter of all WIC participants. Since the establishment of the rebate

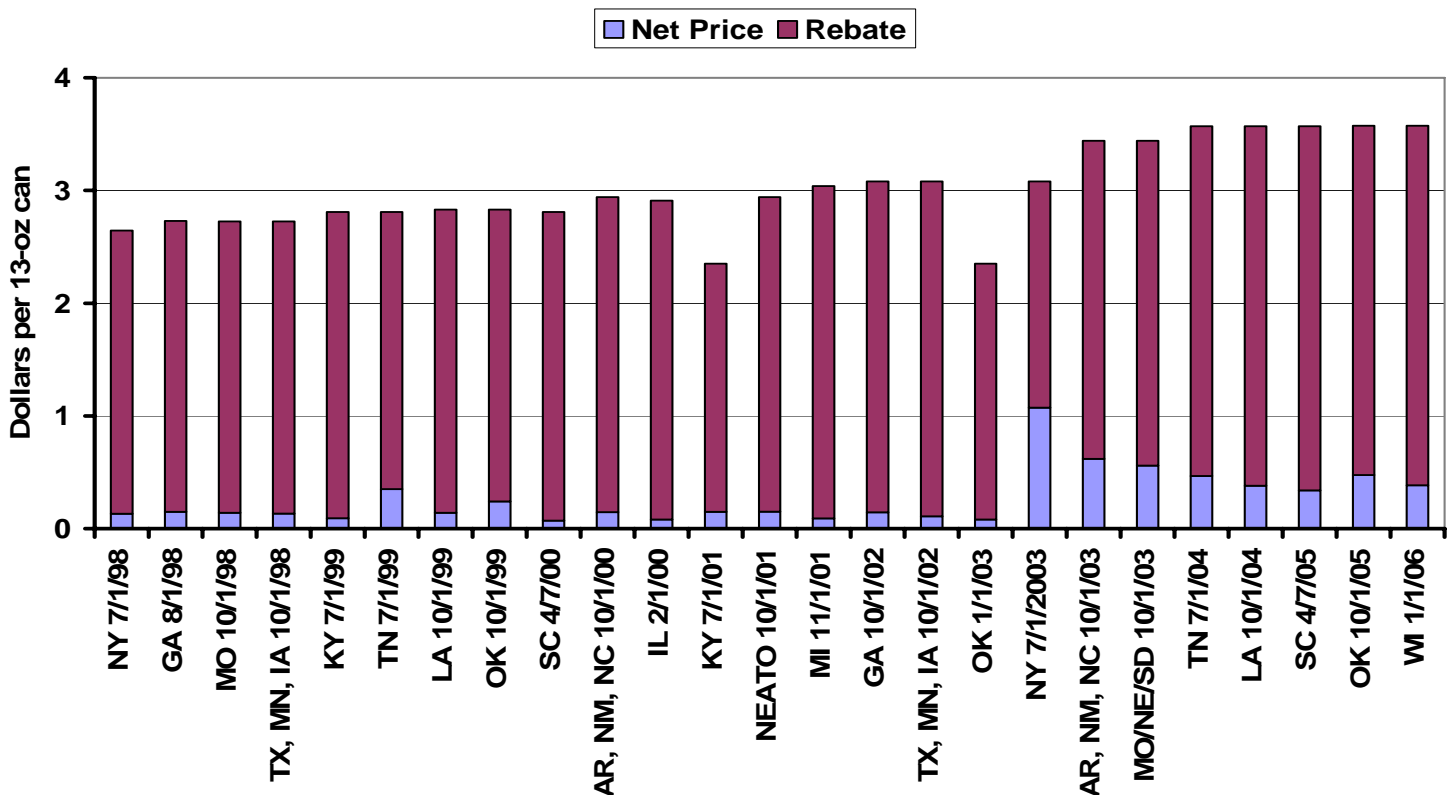
program in 1988, rebates as a share of total pre-rebate WIC food costs increased rapidly, peaking at 33.5 percent in fiscal year 2000. In other words, without the rebates, WIC food costs would be one-third higher. However, rebates as a share of WIC's food costs have fallen each year since 2000 (down to 31.6 percent in 2004, see figure 1).

Figure 1. Infant formula rebates as a percent of total pre-rebate food costs.



Source: USDA, Food and Nutrition

Figure 2. Rebates, net price, and wholesale price of milk-based liquid concentrate, select years and states, 1998-2006.



WIC Infant Formula Cost Changes

All states except Mississippi and Vermont use a retail delivery system to provide infant formula. Under this system, participants obtain formula by redeeming a voucher (similar to a check) at an authorized retailer. The state then reimburses the vendor for the full retail price of formula. So, the cost to WIC for each can of infant formula provided through the program has two parts; one part is paid to the manufacturer and one part is paid to the retailer. The first part is called the *net wholesale price* and is equal to the wholesale price minus the rebate. The second part is the *retail markup* and is equal to the retail price minus the wholesale price. So, the cost of each can of infant formula to WIC can be summarized as:

$$\text{Cost to WIC} = \text{Net Wholesale Price} + \text{Retail Markup},$$

where,

$$\text{Net Wholesale Price} = \text{Wholesale Price} - \text{Rebate}$$

and

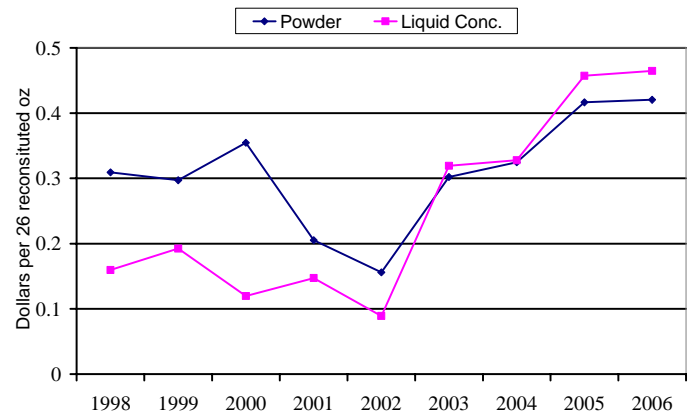
$$\text{Retail Markup} = \text{Retail Price} - \text{Wholesale price}.$$

Rebates, as a proportion of wholesale price, are quite large, and in recent years some states have seen marked increases in their net wholesale price for formula. Figure 2 shows rebates and wholesale prices for new sole-source contracts negotiated since the middle of 1998 (note that the height of each bar is the wholesale price - the sum of the net (wholesale) price and the rebate).¹ Figure 2 demonstrates the importance of rebates to the program; the percentage discount of rebates (i.e., the amount of the rebate expressed as a percentage of the wholesale prices) ranged from 65% to 98%, and averaged about 92%. However, figure 2 also suggests that net wholesale prices are increasing as net wholesale prices for later contracts are higher than for earlier contracts.

Figure 3 adjusts wholesale prices for inflation and shows the average real net-wholesale price for liquid-concentrate and powder-based infant formula. These wholesale net prices are the average for states that have implemented new sole-source contracts since the middle of 1998 (as in figure 2). The chart suggests that average net prices are higher after 2002, than before. Although this is an unweighted average taken over a varying mix of states, a state-by-state analysis reveals the same basic proposition – net wholesale prices have increased since 2002. Furthermore, a closer examination of rebate data (not presented here because of space limitations) suggests that rebate increases have not kept pace with wholesale price increases.

AC Nielsen Scantrack retail price data were used to examine how changes in retail prices have affected the cost of infant formula to WIC. These data are representative of all supermarkets in the US with annual sales exceeding \$2 million. An examination of infant formula prices must recognize an important development in recent years. Infant-formula manufacturers have introduced formulas supplemented with the fatty acids, docosahexainoic

Figure 3. Annual average real net prices of new rebate contracts.



acid (DHA) and arachidonic acid (ARA). Some studies have suggested that the addition of these acids may improve visual function and the mental development of infants. Regardless, these formulas are becoming widely used among WIC and non-WIC households. However, retail prices and retail markups for these formulas are higher than for unsupplemented formulas (table 1). Furthermore, Oliveira et al. report retail markups for unsupplemented liquid concentrate of about 6, 3.8, and 12 percent for Mead Johnson, Ross, and Nestle. Comparing these past markups with those in table 1 suggests that retail markups are widening. Finally, rising net wholesale prices may be of less concern than rising retail markups. For all WIC contracts in effect during the second quarter of 2004, the average net wholesale price per can of 13 ounce liquid concentrate was \$0.21, while the retail markup averaged \$0.49.

Conclusion

While the WIC program is the third costliest food assistance program in the US, innovative state agencies have initiated methods to limit the costliness of the program. Allowing infant formula

Table 1. Retail Prices and Markups

	Retail Price		Retail % Markup	
	Unsupplemented	Supplemented	Unsupplemented	Supplemented
Ross	\$3.58	\$4.02	7.26%	11.19%
Mead Johnson	\$3.53	\$4.09	5.38%	12.71%
Nestle	NA	\$4.06	NA	15.27%

manufacturers sole-source contracts in exchange for rebates has been one of the most successful cost-containment methods. Infant-formula rebates return about \$1.5 billion to the program annually. WIC administrators have become concerned of late because some recent WIC auctions have returned lower than expected rebates. These concerns seem to be confirmed here; rebates do appear to be lower, particularly since 2002.

Increases in both retail markups and wholesale net prices are also threatening to increase the program's costs. Retail prices have risen, in part, because of more costly formulas supplemented with DHA and ARA. There is also evidence that unsupplemented-formula retail margins are increasing.

Costs to WIC appear to be rising because net wholesale prices are increasing from smaller rebates. But, evidence suggests that a larger concern may be increasing retail margins; which in absolute size imply larger costs to WIC than do net wholesale prices. Finally, however, caution is in order in that supplemented formulas are newly introduced products. Although these formulas currently have

large retail margins, their margins may erode over time as markets adjust to an equilibrium.

Endnote 1: Infant formula is sold in three forms: liquid concentrate, powder, and ready to feed. Liquid concentrate and powder require added water before consumption and are the most frequently issued forms in the WIC program. Powder prices and rebates are difficult to depict graphically because of differences in can sizes and reconstitution rates across manufacturers. Liquid concentrate is always sold in 13 ounce cans and reconstitutes to 26 fluid ounces. Figure 2 shows only liquid concentrate prices and rebates for convenience. However, the same conclusions hold for powdered contracts as well.

Reference

Oliviera, V., M. Prell, D. Smallwood, and E. Franzao. "WIC and the Retail Price of Infant Formula." USDA, ERS, Food and Nutrition Report No.39, May 2004.

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