

## **VI. SCHOOL FOOD PROCUREMENT PRACTICES**

### **A. Food Service Decision Making**

There are two central decisions to be made in the procurement of food for SFAs: (1) Where is the food to be purchased? And (2), which foods are to be purchased? While these are decisions that might require the attention of more than one individual or administrative unit, survey respondents were asked to identify that part of the school district organization that had primary responsibility for each of these decisions, recognizing that this responsibility did not necessarily rest in the same place for both decisions. Beyond identifying the principal decision-makers, respondents were asked questions about the basis for making these decisions and the levels at which purchases were made and orders placed.

#### **1. Vendor Selection**

##### **1.1 Responsibility for Decision**

Vendor selection can affect many aspects of SFA performance including the quality and variety of the foods that are purchased, the cost of the foods, and timeliness and efficiency of delivery. Depending on the procurement system that is in use, that decision might be one of identifying potential bidders or in the case of direct-order systems, it might be the outright selection of vendors. But regardless of the formality of the procurement process that is followed, it is a decision that has important consequences for the SFA and the accomplishment of its mission.

Survey results indicate that decisions on vendor selection fall primarily on food service directors. For an estimated 67.0 percent of all public unified NSLP school districts, vendors were selected by the school food service directors. The next most important decision-maker among all districts was the kitchen manager/head cook at a distant 11.5 percent of all districts, followed by food service management companies at 9.5 percent.

When examined by size of school district, the most significant departures from the general pattern are two-fold. One is that the responsibility of the kitchen manager/head cooks decreases sharply as the size of the district increases. Among the smallest district size class, the kitchen manager/head cook had responsibility for selecting vendors in 21.8 percent of the districts while none of the largest districts selected vendors at this level in the organization.

The other departure from the overall pattern when examined by size of district is that the business office was found to play a larger role at both size extremes than for mid-sized districts. Presumably this is for different reasons, however. Among smaller school districts, it is not unusual to find school administrators, such as superintendents, taking part in administration of the school food program. Among larger districts, specialized business offices often assume responsibility for managing the procurement process.

**Table VI-1: Number of Public Unified NSLP School Districts by  
Decision-Maker with Primary Responsibility for Vendor Selection,  
by Size of School District, SY 1996/97**

School district enrollment	District Food Service Director	Kitchen Mgr./ Head Cook	Food Service Mgt. Co.	Business Office/ Purch. Dept.	School Board	Nutritionist	Other	Total
	-----number of school districts-----							
Less than 1,000	1,910	743	209	313	115	0	121	3,411
row percent	56.0	21.8	6.1	9.2	3.4	0.0	3.5	100.0
column percent	28.3	63.8	21.8	51.1	30.9	0.0	62.4	33.8
1,000 - 4,999	3,623	384	582	207	183	16	12	5,009
row percent	72.3	7.7	11.6	4.1	3.7	0.3	0.2	100.0
column percent	53.6	33.0	60.8	33.8	49.1	74.4	6.3	49.7
5,000 - 24,999	1,058	37	166	45	58	0	46	1,410
row percent	75.0	2.6	11.7	3.2	4.1	0.0	3.3	100.0
column percent	15.7	3.2	17.3	7.4	15.5	0.0	23.8	14.0
25,000 or more	167	0	1	48	17	5	14	253
row percent	66.1	0.0	0.5	18.8	6.7	2.1	5.7	100.0
column percent	2.5	0.0	0.1	7.8	4.5	25.6	7.4	2.5
All districts	6,758	1,165	958	614	373	21	194	10,083
row percent	67.0	11.5	9.5	6.1	3.7	0.2	1.9	100.0
column percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Percentages might not add to 100.0 due to rounding.

Source: *School Food Purchase Study*, 1998.

In comparison with results of the earlier study, the most noticeable change is in the increased use of food service directors to select vendors and the decreased use of kitchen managers/head cooks, particularly among the smallest districts. In 1983/84, vendor selection was the responsibility of the kitchen manager/head cook in 71.7 percent of districts with an enrollment of less than 1,000 while food service directors were responsible in only 10.8 percent. In 1996/97, the kitchen manager /head cook share had dropped to 21.8 percent while the share made by food service directors had jumped to 56.0 percent for the same enrollment size category. The other significant change is the increased role of the food service management companies (FSMCs) which selected vendors in 2.3 percent of all districts in 1983/84 but in 9.5 percent in 1996/97.

## 1.2 Selection Criteria

SFAs consider several factors in selecting their food vendors. Not surprisingly, *price* tops the list for districts of all sizes. The two most important criteria after price, based on the share of school districts that consider them, are *dependability* and *food quality*. *Service after sale*, availability of *brands* and *flexibility* were considerations that were somewhat more prevalent among the larger districts. *Location* of the vendor and the availability of *promotion programs* were the criteria given least consideration. The salient feature of the data in Table VI-2 is the consistency of the ranking across districts of different sizes.

**Table VI-2: Criteria Considered by Public Unified NSLP School Districts in Selecting Vendors, SY 1996/97, by Size of School District**

Selection criteria	All districts	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more
	-----percent of school districts-----				
Price	99.7	100.0	99.4	100.0	100.0
Dependability	93.9	92.0	92.6	96.4	94.0
Food quality	93.5	91.2	93.4	96.3	89.8
Service after sale	77.6	70.3	73.8	83.1	83.7
Brands	71.7	58.5	69.2	77.8	77.0
Delivery schedules	69.8	75.7	68.1	69.0	72.4
Flexibility	63.4	58.3	61.2	64.7	71.2
Location	29.4	28.5	32.0	29.6	21.1
Promotion programs	23.7	28.7	19.3	29.1	23.6

Source: *School Food Purchase Study*, 1998

## 2. Food Selection

### 2.1 Responsibility for Decision

Food service directors have the lead responsibility for the selection of foods in 71.3 percent of all SFAs. Mid-size districts are particularly dependent on food service directors to perform this function. In the smallest districts, those with an enrollment of less than 1,000 students, responsibility for food selection is divided between food service directors (58.4 percent) and kitchen managers/head cooks (35.5 percent). Among the largest school districts, responsibility for food selection is spread more broadly and includes food service management companies (7.1 percent), school boards (5.2 percent), nutritionists (2.6 percent) and business offices (9.8 percent.)

**Table VI-3: Number of Public Unified NSLP School Districts by Decision-Maker with Primary Responsibility for Food Selection, by Size of School District, SY 1996/97**

School district enrollment	District Food Service Director	Kitchen Mgr./ Head Cook	Food Service Mgt. Company	Business Office/ Purch. Dept.	Nutritionist	School Board	Other	Total
	-----number of school districts-----							
Less than 1,000	1,992	1,210	209	0	0	0	0	3,411
row percent	58.4	35.5	6.1	0.0	0.0	0.0	0.0	100.0
column percent	27.7	63.1	23.8	0.0	0.0	0.0	0.0	33.8
1,000 - 4,999	3,834	674	485	0	16	0	0	5,009
row percent	76.6	13.4	9.7	0.0	0.3	0.0	0.0	100.0
column percent	53.3	35.1	55.3	0.0	70.2	0.0	0.0	49.7
5,000 - 24,999	1,175	34	166	21	0	0	15	1,410
row percent	83.3	2.4	11.7	1.5	0.0	0.0	1.1	100.0
column percent	16.3	1.8	18.9	45.7	0.0	0.0	93.5	14.0
25,000 or more	189	0	18	25	7	13	1	253
row percent	74.9	0.0	7.1	9.8	2.6	5.2	0.4	100.0
column percent	2.6	0.0	2.0	54.3	29.8	100.0	6.5	2.5
All districts	7,191	1,917	878	46	22	13	16	10,083
row percent	71.3	19.0	8.7	0.5	0.2	0.1	0.1	100.0
column percent	27.7	63.1	23.8	0.0	0.0	0.0	0.0	33.8

Note: Percentages might not add to 100.0 due to rounding.

Source: *School Food Purchase Study*, 1998.

As in vendor selection, the most significant change that has occurred with regard to the responsibility for food selection since 1983/84 is the reduced share of decisions made by the kitchen manager in favor of the food service director (Table VI-4). To some extent, this change could be due to the increased use of the "food service director" title rather than to a shift in responsibility among different decision-makers. The ascendancy of the FSMCs is evident here too as their responsibility for food selection increased from only 0.9 percent of all districts in 1983/84 to 8.7 percent in 1996/97.

**Table VI-4: Comparison of Public Unified NSLP School District  
Decision-Maker Responsible for Selecting Food Items,  
SYs 1983/84 and 1996/97**

Decision-maker	1983/84		1996/97	
	Number of school districts	Percent of total	Number of school districts	Percent of total
Food service director	4,996	54.9	7,191	71.3
Business office/purchasing department	34	0.4	46	0.5
Nutritionist	12	0.1	22	0.2
Kitchen manager/head cook	3,817	41.9	1,917	19.0
Food service management company	78	0.9	878	8.7
Other <sup>1/</sup>	168	1.8	29	0.3
Total	9,105	100.0	10,083	100.0

<sup>1/</sup>Includes school board.

Source: *School Food Purchase Study, 1987* and *School Food Purchase Study, 1998*.

## **2.2 Use of Product Specifications**

Most school districts use product specifications in making food purchases. It is estimated that 88.3 percent of all public unified NSLP school districts used product specifications in some form in SY 1996/97. The most frequently used specifications were those relating to the packaging

unit, style/variety of product, official quality/grade standards, and the use of CN labels. All of these specifications were being used by at least seven out of ten SFAs.

Specifications relating to fat content and nutritional content were used less frequently, though still by a majority of SFAs. Of the specifications respondents were asked to comment on, product origin and standards of identity were the least likely to be used.

**Table VI-5: Product Specifications Used by Public Unified NSLP School Districts in the Procurement of Food, SY 1996/97**

Product specifications	Number of school districts	Percent of all school districts
Packaging unit	8,148	80.8
Style/variety of product	7,757	76.9
Official quality/grade standards	7,305	72.5
Use of child nutrition labels	7,039	69.8
Fat content	6,109	60.6
Container weight	5,901	58.5
Nutritional content	5,826	57.8
Brand name	4,913	48.7
Condition	4,443	44.1
Official standards of identity	3,757	37.3
Origin	2,947	29.2
Not using product specifications	1,183	11.7

Source: *School Food Purchase Study*, 1998

### **B. Use of Branded Foods**

A food becomes branded with the application of a name that differentiates it from other similar foods. Some brands are applied to only a single product while others are used across a range of products. Some school food service programs have created their own "house brands" while some schools contract with commercial firms for the sale of particular foods under the firm's brand name (referred to here as "national brands").

For the SFA, the advantage of using brands is that they give the program's food an identity and, hopefully, greater appeal. If the brand is an established national brand, the SFA seeks to take advantage of existing product acceptance in attracting students to participate in its meals program. In addition, in using national brands, SFAs also gain access to the formulation, quality control, and marketing skills of the parent firm.

An estimated 17.6 percent of all public unified NSLP school districts offered house-branded foods in SY 1996/97 while 38.2 percent offered national brands (Table VI-6.)

The use of branded foods increases as size of district increases, both for house brands and national brands. While 15.7 percent of all school districts with an enrollment of less than 1,000 served nationally branded foods in 1996/97, 47.3 percent of all school districts in the largest size class (25,000 or more) served national brands.

Branded foods can arrive at school districts in different states of preparation. We asked respondents to indicate whether the foods arrived as ingredients, cold products, or as a finished item ready to serve. For those foods to which a house brand was applied, receiving the food in the form of ingredients was slightly favored across all districts and strongly favored among larger districts. Nationally branded foods more frequently reached school districts in a prepared state ready to serve. Larger districts in particular were likely to receive their branded foods in this form.

The food most highly favored for branding (in-house and nationally) was pizza, followed by tacos/burritos for the nationally branded and subs/sandwiches for house brands. Fruit and vegetable products and hamburgers/cheeseburgers are branded somewhat less frequently.

**Table VI-6: Share of Public Unified NSLP Schools that Feature Branded Product, by Size of District and Grade Category, SY 1996/97**

School district enrollment	Elementary schools	Middle/secondary schools	Other schools	All schools
	-----percent of schools-----			
	<b>House Brands</b>			
Less than 1,000	8.9	7.1	0.0	5.4
1,000 to 4,900	14.5	14.9	7.4	13.6
5,000 to 24, 999	17.5	21.3	6.4	17.5
25,000 and more	23.9	28.9	46.3	27.9
All districts	17.9	18.9	13.9	17.6
	<b>National Brands</b>			
Less than 1,000	19.6	15.8	11.9	15.7
1,000 to 4,900	35.9	40.4	25.7	36.0
5,000 to 24, 999	34.4	52.1	43.5	40.6
25,000 and more	37.7	62.0	62.6	47.3
All districts	35.0	45.5	34.1	38.2

Source: *School Food Purchase Study, 1998.*

**Table VI-7: Share of Public Unified NSLP School Districts by Form in Which They Receive Branded Products and Size of District, SY 1996/97**

School district enrollment	As ingredients	As cold product	As finished item	Other
	-----percent of all districts-----			
	<b>House Brands</b>			
Less than 1,000	0.0	2.7	3.5	0.0
1,000 to 4,999	11.1	11.2	9.0	0.0
5,000 to 24,999	17.2	7.4	5.5	0.0
25,000 or more	41.1	7.9	8.7	0.0
All districts	8.9	7.7	6.7	0.0
	<b>National Brands</b>			
Less than 1,000	6.5	17.2	2.7	0.7
1,000 to 4,999	6.8	25.1	28.7	0.0
5,000 to 24,999	14.4	29.4	42.0	0.4
25,000 or more	20.2	24.9	58.1	0.0
All districts	8.1	23.0	22.5	0.3

Source: *School Food Purchase Study, 1998.*



**Table VI-8: Share of Public Unified NSLP School Districts that  
Feature Individual Branded Foods, by Size of District, SY 1996/97**

Individual food	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more	All districts
-----percent of all districts-----					
<b>House Brands</b>					
Hamburgers/cheeseburgers	2.4	7.6	9.3	11.5	8.6
Pizza	5.4	9.0	14.0	24.5	14.2
Subs/sandwiches	2.4	7.6	11.0	18.3	10.9
Tacos/burritos	0.0	6.0	3.6	23.2	9.2
Desserts	0.0	8.2	5.7	7.4	6.5
Fruit products	2.4	5.8	8.2	5.9	6.1
Vegetable products	2.4	5.3	8.6	5.9	6.1
<b>National Brands</b>					
Hamburgers/cheeseburgers	2.4	3.1	8.6	3.1	4.6
Pizza	10.0	30.2	32.2	37.9	30.7
Subs/sandwiches	2.1	7.9	13.1	12.6	10.0
Tacos/burritos	6.3	14.4	24.5	35.3	21.9
Desserts	4.0	12.4	17.8	28.6	17.3
Fruit products	0.3	9.4	9.1	6.0	7.5
Vegetable products	1.7	6.5	4.3	6.2	5.3

Source: *School Food Purchase Study*, 1998.

### C. Food Delivery Practices

#### 1. Receiving Locations

The most frequently used points of delivery for school districts are their on-site kitchens, though this varies by food group (Table VI-9). Around one-third of all districts receive some deliveries at base kitchens, again with some variation among the major types of food. Base kitchens are those that prepare meals for both on-site service and for shipment to other cafeterias within the district.

The more perishable foods, particularly dairy and bakery products, are more likely to be delivered closest to the serving lines, including deliveries to satellite kitchens and combination kitchens. The more storable foods such as canned/staples and frozen foods are more likely to be received

at a school district warehouse. However, even for these foods, a relatively small share of all SFAs receive delivery at SFA-run warehouses, 13.8 percent for canned and staples and 12.7 percent for frozen foods.

Given the differences in terminology used in the 1984/85 study and this study, a strict comparison of the two sets of results is not possible. However, the overall pattern of receiving locations relative to on-site kitchens, central kitchens, and central warehouses does not appear to have materially changed between the two time periods (Table VI-10).

**Table VI-9: Delivery Points for Food Shipments to Public Unified NSLP School Districts,  
by Food Group, SY 1996/97**

Food group	On-site kitchens	School district warehouse	Commercial warehouse	Central kitchens	Base kitchens	Satellite kitchens	Combination kitchens	Other Kitchens
	-----percent of school districts-----							
Dairy products	77.6	1.3	0.0	1.8	39.6	19.8	18.4	0.3
Bakery products	73.4	4.0	0.0	2.4	39.7	7.3	11.3	0.2
Fresh produce	72.8	5.6	0.3	2.4	39.1	2.3	5.3	0.2
Canned/staples	70.4	13.8	0.0	2.1	36.6	1.1	5.6	0.2
Frozen foods	70.9	12.7	0.9	2.2	37.2	1.3	5.8	0.2
Fresh meats	64.8	9.5	0.1	2.0	33.1	1.1	1.9	0.2
Snack foods	62.1	9.6	0.0	2.0	31.8	6.0	6.6	0.2
Ice cream	63.1	2.4	0.0	2.5	33.4	10.7	8.3	0.3

Source: *School Food Purchase Study*, 1998.

**Table VI-10: Comparison of Receiving Locations of Public Unified NSLP School Districts,  
SYs 1983/84 and 1996/97, by Food Group**

Food group	On-site kitchens		School district warehouse		Commercial warehouse		Central kitchens		Base kitchens <sup>2/</sup>		Satellite kitchens <sup>2/</sup>		Combination kitchens <sup>2/</sup>		Other <sup>2/</sup>	
	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97
	percent of school districts															
Dairy products	94.0	77.6	2.3	1.3	0.0	0.0	3.1	1.8	n/a	39.6	n/a	19.8	n/a	18.4	n/a	0.3
Bakery products	88.5	73.4	2.5	4.0	0.0	0.0	5.0	2.4	n/a	39.7	n/a	7.3	n/a	11.3	n/a	0.2
Fresh produce	87.6	72.8	4.5	5.6	0.0	0.3	8.4	2.4	n/a	39.1	n/a	2.3	n/a	5.3	n/a	0.2
Canned/staples <sup>1/</sup>	79.6	70.4	16.8	13.8	0.0	0.0	7.8	2.1	n/a	36.6	n/a	1.1	n/a	5.6	n/a	0.2
Frozen foods	80.9	70.9	15.5	12.7	0.0	0.9	7.5	2.2	n/a	37.2	n/a	1.3	n/a	5.8	n/a	0.2
Fresh meats	78.2	64.8	10.6	9.5	0.0	0.1	8.0	2.0	n/a	33.1	n/a	1.1	n/a	1.9	n/a	0.2
Snack items	73.1	62.1	5.9	9.6	0.0	0.0	5.4	2.0	n/a	31.8	n/a	6.0	n/a	6.6	n/a	0.2
Ice cream	83.4	63.1	3.9	2.4	0.0	0.0	7.8	2.5	n/a	33.4	n/a	10.7	n/a	8.3	n/a	0.3

<sup>1/</sup>Entries for 1984/85 are means of percentages reported separately for canned foods and staples.

<sup>2/</sup>These locations were not included in the 1984/85 study.

Note: Percentages may not add to 100.0 percent in the 1996/97 study because the 1996/97 study allowed for more than one receiving location per food type whereas the 1983/84 study only allowed for one receiving location per food type.

Source: *School Food Purchase Study, 1987* and *School Food Purchase Study, 1998*.

## **D. School Food Vendors**

### **1. Number of Vendors Used**

The number of vendors used by school districts depends in part on the availability of vendors in the locality of the school district and the extent to which individual vendors are diversified across food groups. Foods that are highly perishable and therefore require frequent delivery at multiple locations near the point of use, such as bread and milk, are generally provided by a single vendor. As can be seen in Table VI-11, this is generally the case regardless of district size. Thus, dairy and bakery products are each usually provided by a single vendor.

Foods that are delivered less frequently and are storable over longer periods of time, such as canned/staples, frozen foods, and snack foods, are more likely to be supplied by more than one vendor. Furthermore, larger school districts are likely to use more vendors to supply these foods than smaller districts. Thus, while districts of less than 1,000 students use an average of 2.3 vendors to supply their canned/staple foods, districts with an enrollment of 25,000 or more use an average of 4.2 vendors. A similar relationship holds for frozen foods and snack foods.

Since some vendors provide more than one food line to their customers, the number of vendors serving an individual district can be less than the sum of the number of vendors supplying the individual food lines. That is, a single vendor might supply canned/staples, frozen foods, and snack foods and therefore be counted separately for each.

In Table VI-11, the sum of the average number of vendors across all food groups for school districts of less than 1,000 students is 14.4. However, the total number of vendors used by these districts is only 5.4, on average, indicating that many of the vendors serving this size class supply more than one food line.

The relationship between the sum of the number of vendors supplying individual food lines and the total number of vendors changes with size of enrollment. Among the largest districts (25,000 or more) there is an almost 1 to 1 relationship, indicating very little overlap among vendors supplying different types of foods and substantially greater specialization.

Comparatively little change in the average number of vendors serving SFAs is evident from a comparison of the 1996/97 results with those of the earlier study (Table VI-12). The mean number of vendors tends to be lower in 1996/97 than in 1983/84, though the differences are not

large. Snack items and ice cream are the only two categories experiencing an increase in the number of vendors. While all districts averaged 8.0 vendors in total in 1996/97, in 1983/84 the overall average was 8.7 vendors.

**Table VI-11: Mean Number of Vendors Used by Public Unified  
NSLP School Districts, in SY 1996/97, by Food Group  
and by Size of District**

Food group	All districts	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more
	-----number of vendors-----				
Dairy products	1.1	1.0	1.0	1.1	1.2
Bakery products	1.1	1.1	1.2	1.2	1.3
Fresh produce	1.7	1.8	1.7	1.7	1.8
Canned/staples	2.5	2.3	2.5	3.0	4.2
Frozen foods	2.6	2.3	2.6	3.0	4.1
Fresh meats	2.2	2.2	2.1	2.2	2.1
Snack foods	2.9	2.5	2.8	3.4	3.6
Ice cream	1.3	1.2	1.3	1.3	1.1
All foods	8.0	5.4	8.2	11.8	17.0

Source: *School Food Purchase Study*, 1998.

**Table VI-12: Comparison of the Mean and Total Number of Vendors  
Used by Public Unified NSLP School Districts,  
SYs 1983/84 and 1996/97, by Food Group**

Food group	1983/84		1996/97	
	Mean number of vendors	Total number of vendors	Mean number of vendors	Total number of vendors
Dairy products	1.1	11,327	1.1	10,619
Bakery products	1.1	11,184	1.1	11,143
Fresh produce	1.7	17,410	1.7	17,364
Canned/staples <sup>1/</sup>	3.2	33,391	2.5	25,540
Frozen foods	3.3	34,084	2.6	25,940
Fresh meats	2.4	22,619	2.2	18,026
Snack items	2.2	17,219	2.9	23,550
Ice cream	1.2	10,725	1.3	11,128
Total	8.7	88,101	8.0	80,590

<sup>1/</sup>Mean of individual estimates for canned foods and staple foods in 1983/84.

Source: *School Food Purchase Study*, 1987 and *School Food Purchase Study*, 1998.

## 2. Services Provided by Vendors

As intermediaries in the food distribution system that supplies school districts, vendors are in a position to provide a variety of related services to their customers. They have continuing contact with both the SFAs they serve and the manufacturers of the foods they distribute. As gatekeepers to school district acquisitions, they have access to key information relating to usage. As indicated in Table VI-13, many SFAs avail themselves of services offered by vendors. Unloading deliveries and placing them in coolers and storage facilities are the services most frequently

reported by school districts (89.7 percent and 80.2 percent, respectively), though others are used extensively too.

Over half of all school districts (55.3 percent) receive advice on purchasing from their vendors and nearly half (47.0 percent) receive purchase summaries from their vendors. Vendor summaries were used extensively in collecting information on school district acquisitions for this study. Over one-third of all districts (36.2 percent) receive delivery of USDA donated commodities through their vendors and a smaller share look to their vendors for either storage of donated commodities (17.7 percent) or processing of donated commodities (16.6 percent). It has been evident for a number of years that there are clear opportunities for efficiency gains in making greater use of commercial distributors in the delivery of donated commodities.<sup>1</sup>

**Table VI-13: Services Provided by Vendors to Public Unified  
NSLP School Districts, SY 1996/97**

Services	Percent of School Districts
	-----percent-----
Unloading at dock/school	89.7
Placing packages in coolers/storage	80.2
Advice on purchasing	55.3
Providing purchase summaries on monthly or quarterly basis	47.0
Delivery of USDA donated commodities	36.2
Storage of USDA donated commodities	17.7
Processing of USDA donated commodities	16.6
Menu Planning	13.3
Shelving delivered foods	10.4
Inventory updating	9.9

Source: *School Food Purchase Study*, 1998.

A comparison of these findings with those of the 1984/85 study reveals a marked increase in the provision of services by vendors to their school district customers. While the relative ranking of the same list of services remains largely unchanged, the share of SFAs taking advantage of services has at least doubled for most.

---

<sup>1/</sup> USDA, FNS, OAE, *A Study of the State Commodity Distribution Systems*, March 1988.



For example, while 23.6 percent of all districts reported receiving advice on purchasing in SY 1983/84, the share had risen to 55.3 percent in SY 1996/97. The increased level of involvement of vendors in the delivery, storage, and processing of donated commodities was even more pronounced. Only 4.8 percent of all SFAs were estimated to have vendors deliver USDA donated commodities in SY 1983/84, compared to 36.2 percent in SY 1996/97.

**Table VI-14: Comparison of Types of Service Provided by Food Vendors to Public Unified NSLP School Districts in SYs 1983/84 and 1996/97**

Vendor services	SY 1983/84 <sup>1/</sup>	SY 1996/97
	-----percent of school districts-----	
Unloading at dock/school	61.1	89.7
Placing packages in coolers/storage	57.4	80.2
Advice on purchasing	23.6	55.3
Providing monthly/quarterly purchase summaries	24.0	47.0
Delivery of USDA donated commodities	4.8	36.2
Storage of USDA donated commodities	1.8	17.7
Processing of USDA donated commodities	3.1	16.6
Menu planning	1.6	13.3
Shelving delivered foods	9.6	10.4
Inventory updating	4.3	9.9

<sup>1/</sup>Mean of measures reported individually for each of nine food groups.

Source: *School Food Purchase Study*, 1987 and *School Food Purchase Study*, 1998.

## **E. Procurement and Pricing Methods**

### **1. Procurement Methods**

A wide variety of procurement methods are available to school districts for use in buying food. Since some of these foods are procured for use in the NSLP, school districts must comply with procurement requirements set forth in the Code of Federal Regulations (7 CFR 3015.180-184). In general, these regulations require organizations receiving Federal funds to maintain a written code of conduct regarding the procurement process, to conduct this process in a manner that provides maximum open and free competition, and to maintain records that can be accessed by the Federal government for a period of three years.

Food procurement methods can be viewed as falling in one of two general categories: formal methods and informal methods. Under formal procurement methods, school districts issue an invitation for vendors to submit sealed bids on particular foods to be provided under specified conditions. Bids can be awarded on a line item basis, that is, contracts are awarded item-by-item depending on which vendor offers the lowest price for each item. The principal alternative to this approach is to award contracts on the basis of the lowest combined cost for all foods in a category (e.g., all dairy products). This is referred to as the “formal lump sum bids” approach.

Informal procurement methods are generally conducted through direct SFA contact with vendor representatives for purposes of receiving price quotes and placing orders. Historically, this has been done by telephone or through sales visits.

The choice of procurement method can be dictated in part by characteristics of the product line. For some product lines, such as fresh produce and fresh meats, prices change frequently. This makes it difficult to use formal methods which generally establish contractual terms for periods of several months to a year.

As shown in Table VI-15, procurement methods vary somewhat by food groups, as expected. On the whole, formal methods are more widely used than informal methods. The single exception is fresh produce where districts rely somewhat more heavily on a combination of salesman visits and telephone quotes. Of the two formal approaches, line item bids are used by more school districts than lump sum bids.

School districts rely more heavily on formal procurement methods to purchase dairy and bakery products than any of the other food groups. Since these products not only require frequent delivery but are generally delivered to the individual schools within the district, a longer-term contractual relationship is required. Hence the heavier reliance on a formal arrangement.

With the exception of fresh produce, where frequent personal contact is required to keep abreast of rapidly changing market conditions, telephone quotes are relatively rare.

The "other methods" cited by respondents could generally be considered variations on the methods listed in Table VI-15. For example, 13 districts reported that at least a portion of their foods were acquired cooperatively or by the food management company that ran the school meals program. Presumably, most of these purchases were made through use of formal methods. Another 12 districts purchased some foods through written or faxed quotes, a variation on the telephone quotes approach.

**Table VI-15: Food Procurement Methods Used by Public Unified NSLP  
School Districts in SY 1996/97, by Food Group**

Food group	Formal line item bids	Formal lump sum bids	Telephone bids/quotes	Salesman visits	Other methods
-----percent of school districts-----					
Dairy products	60.6	25.5	4.5	4.8	4.6
Bakery products	56.1	25.0	5.9	5.1	5.1
Fresh produce	22.5	13.3	23.1	33.3	7.9
Canned/staples	42.4	15.1	3.9	32.5	6.1
Frozen foods	41.6	15.1	4.1	33.1	6.1
Fresh meats	31.2	12.1	6.3	31.4	4.9
Snack foods	34.9	13.6	4.2	28.1	4.8
Ice cream	38.8	17.6	6.5	17.2	4.5

Source: *School Food Purchase Study, 1998*

Comparison of these results with those from the earlier study reveals some significant differences, particularly among the procurement methods used for certain food groups (Table VI-16). Overall, formal methods were used far more extensively in SY 1996/97 than in SY 1983/84. Comparing the two formal procurement methods, the use of lump sum bids was substantially more widespread than it had been in 1983/84. This is most notable for dairy products and bakery products, for which line item bids had been extensively used in 1983/84.

**Table VI-16: Comparison of Percent of Public Unified NSLP School Districts Using Alternative Food Procurement Methods, SYs 1983/84 and 1996/97, by Food Group**

Food group	Formal line item bids		Formal lump sum bids		Telephone bids/quotes		Salesman visits		Other methods <sup>2/</sup>	
	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97
	-----percent of school districts-----									
Dairy products	69.8	60.6	17.2	25.5	3.1	4.5	9.1	4.8	n/a	4.6
Bakery products	65.4	56.1	13.8	25.0	5.2	5.9	15.8	5.1	n/a	5.1
Fresh produce	14.4	22.5	3.3	13.3	31.1	23.1	48.4	33.3	n/a	7.9
Canned/staples <sup>1/</sup>	30.6	42.4	5.2	15.1	8.5	3.9	52.6	32.5	n/a	6.1
Frozen	29.1	41.6	5.9	15.1	8.9	4.1	54.5	33.1	n/a	6.1
Fresh meats	26.9	31.2	4.6	12.1	15.3	6.3	51.8	31.4	n/a	4.9
Snack items	28.1	34.9	4.4	13.6	11.5	4.2	52.2	28.1	n/a	4.8
Ice cream	48.8	38.8	10.9	17.6	11.4	6.5	26.2	17.2	n/a	4.5

<sup>1/</sup>Entries for 1984/85 are means of percentages reported separately for canned foods and staples.

<sup>2/</sup>Other methods was not an alternative in the 1983/84 survey.

Source: *School Food Purchase Study, 1987* and *School Food Purchase Study, 1998*.

## **2. Pricing Methods**

School districts and their vendors establish prices for their transactions through a variety of means. As with procurement methods, these too can be grouped into formal and informal categories. Formal methods are those that are agreed to through contractual commitments while informal methods are arrived at without benefit of contracts.

The first four pricing methods displayed in Table VI-17 – fixed price, fixed price with escalator, formula price, and cost-based price – are considered formal methods and are in common use. The remaining three methods are considered informal. The two pricing methods most frequently used across all food groups in SY 1996/97 were fixed price and bid/quote price. The former is achieved contractually; the latter can be done through a variety of informal means.

For dairy products, most school districts used either a fixed price with escalator (38.5 percent) or a fixed price (36.3 percent). Fixed prices are used most frequently for bakery products, accounting for 58.1 percent of all districts. For the reasons cited earlier, districts rely more heavily on informal pricing methods for fresh produce, with 38.4 percent of all districts using bid/quote prices. For the remaining food groups, districts are rather evenly split between fixed pricing (with or without an escalator) and bid/quote prices.

The most dramatic change in school district pricing since 1983/84, as documented in Table VI-18, has been the pronounced shift toward more formal methods and away from retail prices and discounted prices. The fixed price and fixed price with escalator methods, in particular, have become more widely adopted. Even fresh produce has moved in this direction, though a majority of all districts still use informal pricing for these foods. In SY 1983/84, only 4.1 percent of all districts priced their produce through use of a fixed price method; in SY 1996/97, an estimated 21.3 percent of all districts priced their produce this way.

**Table VI-17: Pricing Methods Used by Public Unified NSLP School Districts in  
Food Procurement, SY 1996/97, by Food Group**

Food group	Formal method				Informal method			
	Fixed price	Fixed price with escalator	Formula price	Cost-based price	Bid or quote price	Retail price	Discount price	Other
	-----percent of school districts-----				-----percent of school districts-----			
Dairy products	36.3	38.5	1.0	1.9	18.9	2.2	0.5	0.7
Bakery products	58.1	6.7	0.7	2.5	22.7	2.9	2.8	0.7
Fresh produce	11.7	9.6	5.5	12.4	38.4	10.7	10.5	1.0
Canned/staples	31.8	9.5	5.4	6.1	35.9	4.0	6.5	0.7
Frozen foods	30.8	9.8	5.5	7.0	35.0	4.0	7.2	0.7
Fresh meats	22.3	9.2	5.7	4.4	31.3	6.3	5.6	0.7
Snack foods	26.2	5.4	6.0	6.9	29.9	4.3	6.2	0.7
Ice cream	33.0	9.0	3.4	4.5	23.3	4.8	5.3	0.7

Source: *School Food Purchase Study*, 1998.

**Table VI-18: Comparison of Percent of Public Unified NSLP School Districts Using Alternative Methods of Product Pricing, SYs 1983/84 and 1996/97, by Food Group**

Food group	Formal method								Informal method							
	Fixed price		Fixed price with escalator		Formula price <sup>2/</sup>		Cost-based price <sup>2/</sup>		Bid or quote price		Retail price		Discount price		Other <sup>2/</sup>	
	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97	1983/84	1996/96	1983/84	1996/97	1983/84	1996/97	1983/84	1996/97
	-----percent of school districts-----								-----percent of school districts-----							
Dairy products	41.3	36.3	25.4	38.5	n/a	1.0	n/a	1.9	26.6	18.9	3.2	2.2	3.3	0.5	n/a	0.7
Bakery products	46.8	58.1	6.5	6.7	n/a	0.7	n/a	2.5	27.5	22.7	7.7	2.9	3.6	2.8	n/a	0.7
Fresh produce	2.5	11.7	1.6	9.6	n/a	5.5	n/a	12.4	32.2	38.4	14.8	10.7	31.9	10.5	n/a	1.0
Canned/staples <sup>1/</sup>	12.6	31.8	1.9	9.5	n/a	5.4	n/a	6.1	40.5	35.9	8.9	4.0	24.5	6.5	n/a	0.7
Frozen foods	11.1	30.8	2.5	9.8	n/a	5.5	n/a	7.0	40.4	35.0	10.9	4.0	25.4	7.2	n/a	0.7
Fresh meats	8.5	22.3	1.6	9.2	n/a	5.7	n/a	4.4	35.0	31.3	13.0	6.3	24.9	5.6	n/a	0.7
Snack items	13.1	26.2	2.9	5.4	n/a	6.0	n/a	6.9	28.2	29.9	10.0	4.3	19.0	6.2	n/a	0.7
Ice cream	29.5	33.0	3.6	9.0	n/a	3.4	n/a	4.5	24.4	23.3	7.3	4.8	15.6	5.3	n/a	0.7

<sup>1/</sup>Entries for 1984/85 are means of percentages reported separately for canned foods and staples.

<sup>2/</sup>These methods were not included in the 1984/85 study.

Source: *School Food Purchase Study, 1987* and *School Food Purchase Study, 1998*.

## **F. Cooperative Buying**

By joining with other school districts, SFAs can realize the economies (and possibly other benefits) of larger scale procurement. Cooperative buying can take various forms. It can be organized and managed by a group of SFAs that are in relatively close geographic proximity. Political jurisdictions can provide the leadership to create a cooperative. At least two states have begun buying cooperatively for school districts within their states that want to take part. Though it was not considered as cooperative buying for purposes of this study, the pilot program now being conducted by the Department of Defense for the USDA in buying fresh produce for NSLP school districts is a variant of cooperative buying. So too is the pilot program that is now being planned by USDA's Agricultural Marketing Service.

As the results in Table VI-19 indicate, a significant share of all school districts, 37.1 percent, are estimated to have participated in a cooperative buying program in SY 1996/97. Among the smallest districts, 42.9 percent participated. While the incidence of participation in these programs was lowest in the largest districts, even within this group 22.9 percent of the districts were represented.

Perhaps more impressive than the number of school districts taking part in these cooperative programs is the share of their overall food purchases that they reported buying cooperatively. Overall, it is estimated that 61.9 percent of the SY 1995/96 food purchases of these districts was acquired through cooperative purchases.

On average, participating school districts reported that they had been in their cooperative buying program for around 6 years. Districts in the smallest enrollment size class participated in programs that served about twice as many school districts as did those in larger size classes.

The results are doubly surprising when compared with results of the SY 1984/85 study as displayed in Table VI-20. The earlier study found that less than 10 percent of all public unified school districts reported membership in a food buying cooperative and that no districts at all in the smallest size class (less than 1,000 students) reported membership.

As can be seen in Table VI-20, cooperative buying programs as a group provide the full range of foods acquired by SFAs. While canned and staples and frozen foods continue to be the lines that most districts buy cooperatively, 32.8 percent and 28.8 percent of all districts, respectively, a significant share of districts buy other lines as well.



**Table VI-19: Participation in Cooperative Buying by Public Unified  
NSLP School Districts, by Size of District, SY 1996/97**

School district enrollment	Districts participating in cooperative buying		Average number of years in buying program	Average number of districts participating in cooperative <sup>1/</sup>	Average share of SY 1995/96 food purchases through buying program
	Number	Percent of total			
	(number)	(%)	(years)	(SFAs)	(%)
Less than 1,000	1,465	42.9	6.4	62	70.0
1,000 to 4,999	1,619	32.3	6.5	29	56.8
5,000 to 24,999	602	42.7	5.8	28	57.4
25,000 or more	58	22.9	6.2	34	44.8
All districts	3,745	37.1	6.3	42	61.9

<sup>1/</sup>School districts were asked to report the total number of school districts participating in their buying cooperative. Information on the size of these school districts is not available.

Source: *School Food Purchase Study*, 1998.

**Table VI-20: Comparison of Public Unified NSLP School District  
Participation in Purchasing Cooperatives,  
SYs 1983/84 and 1996/97, by Food Group**

Food group	1983/84		1996/97	
	Number of school districts	Percent of total districts	Number of school districts	Percent of total districts
Dairy products	308	3.4	1,762	17.5
Bakery products	350	3.9	1,349	13.4
Fresh produce	93	1.0	1,647	16.3
Canned/staples <sup>1/</sup>	716	8.0	3,304	32.8
Frozen	637	7.1	2,903	28.8
Fresh meats	218	2.4	2,205	21.9
Snack items	246	2.7	1,933	19.2
Ice cream	130	1.4	1,612	16.0

Note: Total number of districts for the 1996/97 study was 10,083. The 1983/84 study figures are from Table F3 of the *School Food Purchase Study, Final Report*, 1987.

<sup>1/</sup>Mean of individual estimates for canned foods and staples.

Source: *School Food Purchase Study*, 1987 and *School Food Purchase Study*, 1998.

## **VII. THE RELATIONSHIP BETWEEN SCHOOL DISTRICT CHARACTERISTICS, PROCUREMENT PRACTICES, AND FOOD ACQUISITIONS**

In this Chapter, we examine the relationship between selected school district characteristics and procurement practices and mean costs of the foods acquired by public unified school districts participating in the NSLP. In particular, we will look at the effect on food costs of district size, centralization of procurement, the number of vendors used and who within the school district organization is responsible for vendor selection, and the methods used for procurement and product pricing. Food costs are measured in dollars per pound and dollars per thousand students.

As noted in previous sections of this report, school districts require a wide variety of different foods for their programs. Even after substantial aggregation across different flavors, varieties, cuts, and sizes, we are left with over 800 individual food items. Given the differences that exist within these individual food items and the even larger differences that arise when individual food items are aggregated, caution is required in comparing costs. In other words, differences in cost might reflect differences in product characteristics rather than differences in prices paid for products with the same characteristics.

To minimize these effects, the tables that appear in this Chapter contain information either for selected individual food items that are thought to be highly comparable or for major aggregations of individual food items within which these differences will tend to be off-setting.

### **A. Effect of School District Characteristics on Food Costs**

#### **1. Size of Enrollment**

A comparison of mean costs per pound for major food categories by school district size (Table VII-1) suggests an inverse relationship between mean cost per pound and district size, though the relationship is weak for districts of less than 5,000 enrollment. The cost advantage of the largest districts is somewhat more apparent. Of the 67 food categories listed in Table VII-1, districts with an enrollment of 25,000 or more had the lowest mean cost (or were tied for lowest mean cost) in 33 categories. Furthermore, these districts were lowest mean cost in many of the highest value food categories, including beef, pork, chicken, turkey, milk, fruits, juices, and potato products.

Districts of 5,000 to 24,999 had 17 food categories for which they had the lowest mean cost. Districts of 1,000 to 4,999 had 9 categories with lowest mean cost while the smallest size class, less than 1,000, had 12.

**Table VII-1: Mean Cost Per Pound Paid by Public Unified NSLP  
School Districts for Purchased Foods by Food Subgroups  
and by Size of School District, SY 1996/97**

Food group/subgroups	dollars per pound				
	All districts	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more
-----					
Grain Products					
Breakfast cereals	3.13	3.37	3.41	3.22	2.78
Flour mix	0.90	1.46	1.00	0.87	0.79
Flour/other milled grains	0.21	0.21	0.22	0.21	0.21
Mixtures with grain	1.19	0.94	0.98	1.22	1.40
Pasta	0.64	0.70	0.69	0.59	0.60
Rice/other grains	0.89	0.61	0.82	1.20	0.72
Bakery					
Biscuits	1.35	1.31	1.42	1.31	1.32
Bread & rolls	0.76	0.78	0.76	0.75	0.78
Cakes/other desserts	1.68	1.57	1.72	1.61	1.73
Chips	1.71	1.65	1.69	1.76	1.62
Crackers	1.70	1.72	1.85	1.64	1.59
Fats & Oils					
Butter	1.59	1.68	1.46	1.58	1.68
Lard	0.50	n/a	n/a	0.50	n/a
Margarine	0.43	0.50	0.47	0.41	0.39
Salad dressing	0.75	0.84	0.79	0.74	0.69
Vegetable oil	0.55	0.97	0.57	0.53	0.50
Red Meats					
Beef	1.48	1.56	1.45	1.52	1.43
Mixed meats	1.28	1.49	1.31	1.23	1.26
Pork	1.77	1.77	1.88	1.70	1.67
Recipe mix	1.20	n/a	1.08	0.87	1.76
Poultry					
Chicken	1.67	1.70	1.71	1.68	1.61
Recipe mix	1.76	n/a	1.31	2.37	1.97
Turkey	1.16	1.21	1.29	1.13	1.09
Eggs					
Eggs	0.68	0.68	0.69	0.65	0.73
Mixtures with eggs	1.67	1.72	1.89	1.74	1.47

**Table VII-1: Mean Cost Per Pound Paid by Public Unified NSLP  
School Districts for Purchased Foods by Food Subgroups  
and by Size of School District, SY 1996/97 (continued)**

Food group/subgroups	dollars per pound-----				
	All districts	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more
Fish					
Fish	1.68	1.72	1.82	1.68	<b>1.50</b>
Shellfish	2.28	2.24	2.50	2.47	1.85
Milk & other dairy					
Cheese	1.49	<b>1.47</b>	1.51	<b>1.47</b>	1.51
Cream	0.95	1.15	0.99	<b>0.89</b>	<b>0.89</b>
Ice cream	0.93	<b>0.75</b>	0.98	0.92	0.90
Milk	0.30	0.31	0.30	0.30	<b>0.29</b>
Yogurt	1.04	1.64	1.05	1.10	<b>0.83</b>
Fruits/Juices					
Fruits	0.54	0.60	0.56	0.54	<b>0.49</b>
Juices	<b>0.48</b>	0.52	0.49	0.48	<b>0.47</b>
Vegetables					
Green vegetables	0.43	<b>0.41</b>	0.42	0.42	0.44
Mixed vegetables	0.60	0.66	0.61	<b>0.58</b>	0.59
Mixtures with vegetables	0.80	0.96	0.84	0.79	<b>0.72</b>
Other vegetables	0.67	0.79	0.71	0.65	<b>0.63</b>
Potato & potato products	0.46	0.53	0.47	0.45	<b>0.44</b>
Tomato & tomato products	0.51	0.51	0.51	<b>0.50</b>	0.51
Yellow vegetables	0.51	<b>0.45</b>	0.50	0.52	0.51
Legumes/nuts/seeds					
Dry beans/peas	0.42	0.41	<b>0.38</b>	0.47	0.40
Other nuts	2.43	3.55	<b>1.78</b>	3.99	3.98
Peanuts/peanut butter	1.19	1.56	<b>1.08</b>	1.27	1.18
Seeds	1.75	2.03	<b>1.62</b>	1.66	1.91
Soybeans & soy products	0.96	1.20	0.82	1.20	0.79
Sugar/desserts					
Candies/toppings	1.92	1.97	2.04	<b>1.80</b>	1.80
Gelatins	0.90	1.47	0.83	<b>0.80</b>	0.85
Jellies, jams & preserves	0.70	0.87	0.77	0.68	<b>0.63</b>
Puddings/pie fillings	0.59	0.57	0.62	<b>0.56</b>	0.59
Sherbet/ices	0.81	0.92	0.86	0.79	0.78
Sugars	0.40	0.44	0.42	0.40	0.38
Syrups, molasses & honey	0.59	0.52	0.65	0.59	0.56
Non dairy drinks					
Carbonated	0.36	0.43	0.40	0.36	0.33
Dry beverage	0.86	0.90	<b>0.76</b>	1.04	0.77
Fruit drinks	0.39	0.44	0.38	0.40	0.38
Water	0.31	0.42	0.31	0.29	0.33

**Table VII-1: Mean Cost Per Pound Paid by Public Unified NSLP  
School Districts for Purchased Foods by Food Subgroups  
and by Size of School District, SY 1996/97 (continued)**

Food group/subgroups	Less than 1,000 1,000 to 4,999 5,000 to 24,999 25,000 or more				
	All districts	1,000	4,999	24,999	more
	-----dollars per pound-----				
Soups & gravies					
Gravies	1.81	2.33	1.84	1.94	1.49
Soups	0.99	0.96	0.86	1.05	1.30
Condiments					
Catsup & other sauces	0.57	0.51	0.57	0.57	0.58
Flavorings	0.82	0.90	0.99	0.87	0.55
Pickles/olives	0.37	0.41	0.36	0.38	0.37
Prepared meals					
Burritos/tacos	1.22	1.34	1.28	1.21	1.18
Meat or cheese filled pastry	1.79	2.02	1.82	1.75	1.79
Pizza	1.41	1.23	1.41	1.39	1.47
Prepared meals	1.19	3.17	3.29	1.73	1.06
Prepared sandwiches	2.25	2.57	2.93	1.80	2.48

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study*, 1998.

As a means of comparing costs at a level closer to that of individual foods, the 50 individual food items that were purchased in the largest dollar volume nationally in SY 1996/97 were identified. (See Appendix C for a more complete description of this list.) The list was selected on the basis of school district purchases since all other cost estimates are based on values derived from purchased foods. Ordered from highest value to lowest value, the list begins with flavored 1% milk (\$225.3 million) and ends with meat filled pastry (\$17.5 million). Nearly all of the major food categories are represented on this list. And, though the list includes only 50 of the 842 food items acquired by school districts, collectively these foods accounted for an estimated \$2.2 billion of school district purchases in SY 1996/97, 57.5 percent of total purchases.

A comparison of the mean costs of these individual items, as displayed in Table VII-2, leads to much the same conclusion as described above. Though each district size class has the lowest mean cost for at least some foods, the two larger size classes are lowest cost for more items (43) than are the two smaller size classes (18).<sup>1</sup> Conversely, the two larger size classes are highest cost for fewer items (17) than the two smaller size classes (39).

1/ When two or more categories share the lowest (highest) cost, both are counted. Thus, the total number of lowest (highest) observations can exceed 50.

**Table VII-2: Mean Cost per Pound of the Top Fifty Items Purchased by Public Unified NSLP School Districts, by Size of District, SY 1996/97**

Food item	School district enrollment				
	All Districts	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more
Milk, flavored, lo fat, 1%	0.30	0.30	0.30	0.30	0.29
Milk, flavored, lo fat, fat solids unknown	0.31	0.31	0.31	0.30	0.31
Milk, whole	0.31	0.31	0.32	0.31	0.31
Milk, lo fat, 2%	0.31	0.30	0.31	0.30	0.33
Hamburger and hot dog buns/steak and sub roll	0.81	0.86	0.83	0.78	0.78
Potatoes, french fries/wedges, frozen	0.45	0.49	0.45	0.44	0.44
Fruit drinks, individual	0.43	0.45	0.44	0.42	0.40
Orange juice, individual	0.48	0.53	0.48	0.46	0.46
Cereals, individual	3.92	4.28	4.15	3.80	3.43
Milk, lo fat, 1%	0.31	0.31	0.30	0.30	0.32
Pizza, w/real cheese	1.73	1.51	1.79	1.66	1.75
Ice cream/ice milk novelties	1.25	1.25	1.24	1.33	1.16
Pizza, sausage w/cheese blend	1.32	1.28	1.34	1.29	1.37
Chicken, patties, white meat	1.79	1.85	1.76	1.80	1.83
Pizza, pepperoni w/cheese blend	1.38	1.37	1.37	1.43	1.34
Chicken, nuggets, white meat	1.71	1.60	1.72	1.69	1.78
Cookies individual	2.23	2.27	2.36	2.03	2.24
Chicken, nuggets, white/dark mix unknown	1.77	1.90	1.73	1.78	1.80
Chips, tortilla/corn	1.46	1.46	1.51	1.38	1.47
Milk, flavored, lo fat, .5%	0.31	n/a	0.32	0.31	0.32
Milk, flavored, skim/nonfat	0.29	0.32	0.31	0.29	0.26
Donuts/churros/honey bun/cinnamon rolls	1.62	1.59	1.65	1.63	1.56
Apple juice, individual	0.48	0.56	0.49	0.46	0.46
Cheese, American/processed	1.74	1.92	1.77	1.67	1.69
Chips, potato or potato sticks	2.48	2.44	2.51	2.54	2.31
Pizza, pepperoni w/real cheese	1.80	1.77	1.78	1.78	1.87
Beef, patties cooked	1.71	1.83	1.75	1.70	1.56
Apples, fresh	0.45	0.47	0.46	0.44	0.41
Pizza, cheese, type unknown	1.51	1.23	1.46	1.56	1.56
Pizza, cheese blend	1.35	1.28	1.36	1.35	1.35
Potatoes, formed, frozen	0.45	0.47	0.46	0.43	0.44
Sodas, carbonated	0.39	0.35	0.40	0.39	0.37
Milk, lo fat, fat solids unknown	0.31	0.29	0.30	0.33	0.30
Catsup, individual pack	0.76	0.86	0.81	0.73	0.66
Bread, white	0.64	0.74	0.65	0.62	0.59
Peaches, canned, light syrup	0.60	0.63	0.59	0.59	0.62
Chicken, patties, white/dark mix unknown	1.79	1.89	1.75	1.82	1.81
Pizza, pepperoni, cheese unknown	1.49	1.62	1.51	1.43	1.54
Cookie dough	1.46	1.40	1.45	1.48	1.47
Oranges, fresh	0.39	0.42	0.41	0.39	0.35
Beef, breaded patties/nuggets	1.47	1.51	1.52	1.44	1.40
Mixed fruit, canned, light syrup	0.67	0.70	0.67	0.65	0.65
Lettuce, heads	0.35	0.33	0.36	0.33	0.40
Fruit juice, bars, frozen	0.91	0.93	0.93	0.91	0.86
Fish, nuggets/patties, breaded	1.74	1.88	1.78	1.79	1.52
Biscuits and rolls	1.08	1.13	1.10	1.06	1.05
Tomatoes, fresh	0.67	0.75	0.68	0.65	0.62
Milk, flavored, whole	0.35	0.41	0.33	0.34	0.36
Cakes/brownies, prepared, individual pack	1.82	1.80	1.82	1.91	1.68
Meat filled pastry (includes Hot Pockets)	1.96	1.96	1.97	1.98	1.92

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study*, 1998.

## 2. Degree of Procurement Centralization

Procurement decisions can be made at different levels within a school district. By procurement decisions we mean major decisions regarding the selection of foods to be purchased and the selection of vendors, for example, not just the placing of orders. School districts were asked whether these decisions were centralized at the district level, decentralized with decisions made at the level of the individual schools, or a combination of the two. On the basis of their responses, it is estimated that procurement decisions were made as follows among public unified school districts in SY 1996/97.

Size of district	Centralized		Decentralized		Combination		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 1,000	2,314	67.8	413	12.1	684	20.1	3,411	100.0
1,000 to 4,999	2,772	55.3	390	7.8	1,847	36.9	5,009	100.0
5,000 to 24,999	1,017	72.2	31	2.2	361	25.6	1,409	100.0
25,000 or more	231	91.3	0	0.0	22	8.7	253	100.0
All districts	6,334	62.8	835	8.3	2,914	28.9	10,083	100.0

As indicated, a majority of all districts use a centralized approach. The proportion using a centralized approach increases with district size with 91.3 percent of districts of 25,000 or more students using this approach. Overall, only 8.3 percent of all districts are estimated to make their decisions on a decentralized basis while the remaining 28.9 percent use some combination of the two.

Table VII-3 lists the mean cost per pound of the same 50 food items displayed in Table VII-2, except costs are classified by the degree to which procurement by the respective school districts is centralized. Of the 50 items on the list, districts using a centralized approach to procurement had the lowest mean cost (or tied for lowest mean cost) for 30 items. Decentralized systems were lowest for 13 of the 50 items while districts using a combination of centralized and decentralized procurement were lowest on 15 of the 50 items. To some extent, this is further confirmation of the inverse relationship between per unit cost and size of district since larger districts rely more heavily on centralized procurement.

**Table VII-3: Mean Cost Per Pound for the Top Fifty Foods Purchased by Public Unified NSLP School Districts, SY 1996/97, by Extent to which Procurement is Centralized**

Food Item	Degree of Centralization		
	Centralized	Decentralized	Combination
	-----dollars per pound-----		
Milk, flavored, lo fat, 1%	0.30	0.30	0.30
Milk, flavored, lo fat, fat solids unknown	0.30	0.31	0.31
Milk, whole	0.31	0.32	0.32
Milk, lo fat, 2%	0.31	0.31	0.31
Hamburger and hot dog buns/steak and sub roll	0.81	0.86	0.80
Potatoes, french fries/wedges, frozen	0.45	0.43	0.45
Fruit drinks, individual	0.42	0.44	0.44
Orange juice, individual	0.47	0.55	0.47
Cereals, individual	3.90	4.45	3.91
Milk, lo fat, 1%	0.31	0.30	0.31
Pizza, w/real cheese	1.70	1.62	1.81
Ice cream/ice milk novelties	1.21	1.22	1.36
Pizza, sausage w/cheese blend	1.31	1.41	1.34
Chicken, patties, white meat	1.78	1.82	1.80
Pizza, pepperoni w/cheese blend	1.39	1.47	1.35
Chicken, nuggets, white meat	1.69	1.97	1.72
Cookies individual	2.18	2.53	2.31
Chicken, nuggets, white/dark mix unknown	1.79	1.77	1.72
Chips, tortilla/corn	1.46	1.65	1.43
Milk, flavored, lo fat, .5%	0.31	n/a	0.34
Milk, flavored, skim/nonfat	0.28	0.33	0.31
Donuts/churros/honey bun/cinnamon rolls	1.60	1.68	1.68
Apple juice, individual	0.48	0.58	0.47
Cheese, American/processed	1.73	1.88	1.74
Chips, potato or potato sticks	2.48	2.55	2.46
Pizza, pepperoni w/real cheese	1.81	1.63	1.81
Beef, patties cooked	1.70	1.82	1.75
Apples, fresh	0.44	0.44	0.46
Pizza, cheese, type unknown	1.51	1.32	1.54
Pizza, cheese blend	1.33	1.45	1.38
Potatoes, formed, frozen	0.45	0.45	0.44
Sodas, carbonated	0.38	0.41	0.39
Milk, lo fat, fat solids unknown	0.30	n/a	0.33
Catsup, individual pack	0.74	0.83	0.78
Bread, white	0.63	0.68	0.66
Peaches, canned, light syrup	0.60	0.61	0.59
Chicken, patties, white/dark mix unknown	1.82	2.00	1.66
Pizza, pepperoni, cheese unknown	1.47	1.58	1.53



**Table VII-3: Mean Cost Per Pound for the Top Fifty Foods Purchased by Public Unified NSLP School Districts, SY 1996/97, by Extent to which Procurement is Centralized (continued)**

Food Item	Degree of Centralization		
	Centralized	Decentralized	Combination
	-----dollars per pound-----		
Cookie dough	1.46	1.40	1.48
Oranges, fresh	0.39	0.39	0.40
Beef, breaded patties/nuggets	1.48	1.42	1.45
Mixed fruit, canned, ls	0.66	0.69	0.67
Lettuce, heads	0.36	0.39	0.32
Fruit juice, bars, frozen	0.91	0.91	0.94
Fish, nuggets/patties, breaded	1.70	1.90	1.82
Biscuits and rolls	1.07	1.19	1.11
Tomatoes, fresh	0.66	0.91	0.65
Milk, flavored, whole	0.35	n/a	0.37
Cakes/brownies, prepared, individual pack	1.85	1.90	1.73
Meat filled pastry (includes Hot Pockets)	1.95	1.53	2.06

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study, 1998.*

## **B. The Effect of Procurement Practices on Food Costs**

### **1. The Relationship Between Food Cost and Responsibility for Vendor Selection**

The selection of vendors is a key decision in the procurement process of an SFA. The assignment of responsibility for the decision depends both on the level of specialization within the SFA and on how the SFA is organized. As discussed in Chapter VI, a majority of SFAs in every size category looked to their food service director to select vendors. Overall, 71.2 percent of all SFAs assigned this responsibility to the food service director.

The remaining SFAs assign this task to a variety of positions within their school districts including the kitchen manager, business office, school board, and staff nutritionist among others. Of these, kitchen managers are most prominent, particularly among the smallest districts where they make the decision for 21.8 percent of all districts with less than 1,000 students.

Among its key findings, the study conducted in 1984/85 found that those school districts where the kitchen manager made the decision were more likely to experience higher per unit costs while those in which the business office made the decision were more likely to experience lower per unit costs. Results from the survey conducted in FY 1996/97 are similar in some respects but different in others, as can be seen from Table VII-4.

As in the earlier study, those districts in which the kitchen managers selected the vendors, paid the highest price for more items (17) than did any other category of decision-maker. However, these districts also had the second highest number of items (10) for which they were lowest cost. Interestingly, five of the ten items for which they were lowest cost (by a small amount) were different forms of fluid milk. It is possible that the slightly lower prices enjoyed by these districts (which are highly concentrated among the smallest) are due to their closer proximity to fluid milk supplies.

The decision-maker category with the largest number of items of lowest cost (24) was the catch-all "other" category (a category not included in the earlier study). This category is represented in the sample by only seven SFAs and, therefore, the results should be interpreted with caution. Of these seven districts, vendors for three were selected by the buying cooperatives to which they belonged and for two others the decisions were made by nutritionists.

Business office and school board decision-makers both experienced slightly more highest prices than lowest prices, ratios of 11:8 and 9:6, respectively. For those SFAs where food service management companies selected the vendors, there was an even split between lowest (7) and highest (7) prices. With the exception of two food items, SFAs where the food service director made the decision were always somewhere in the middle on prices. Of the two exceptions, one was lowest and the other highest.

**Table VII-4: Mean Cost Per Pound for the Top Fifty Foods Purchased by  
Public Unified NSLP School Districts, SY 1996/97,  
by Decision-Maker Responsible for Vendor Selection**

Food Item	District food service director	Business office/ purchasing dept.	Food service mgt co.	Kitchen mgr/ head cook	School board	Other
	-----dollars per pound-----					
Milk, flavored, lo fat, 1%	0.30	0.29	0.30	0.27	0.31	0.30
Milk, flavored, lo fat, fat solids unknown	0.31	0.29	0.31	0.31	0.31	0.33
Milk, whole	0.32	0.31	0.31	0.30	0.33	0.31
Milk, lo fat, 2%	0.31	0.34	0.29	0.29	0.31	0.30
Hamburger and hot dog buns/steak and sub	0.80	0.84	0.79	0.95	0.80	0.72
Potatoes, french fries/wedges, frozen	0.45	0.44	0.43	0.47	0.47	0.42
Fruit drinks, individual	0.43	0.39	0.45	0.51	0.42	0.34
Orange juice, individual	0.47	0.49	0.52	0.51	0.48	0.46
Cereals, individual	3.93	3.43	4.36	4.24	3.99	3.64
Milk, lo fat, 1%	0.31	0.33	0.29	0.29	0.30	0.31
Pizza, w/real cheese	1.70	1.98	1.73	1.44	1.75	1.73
Ice cream/ice milk novelties	1.26	1.05	1.39	1.25	1.36	1.07
Pizza, sausage w/cheese blend	1.32	1.31	1.33	1.35	1.34	1.31
Chicken, patties, white meat	1.80	1.68	1.77	1.88	1.80	1.46
Pizza, pepperoni w/cheese blend	1.39	1.26	1.35	1.36	1.44	1.52
Chicken, nuggets, white meat	1.70	1.74	1.47	1.85	1.79	2.07
Cookies individual	2.23	2.33	2.03	2.56	1.93	2.50
Chicken, nuggets, white/dark mix unknown	1.78	1.81	1.61	1.97	1.65	1.66
Chips, tortilla/corn	1.47	1.41	1.54	1.45	1.34	1.30
Milk, flavored, lo fat, .5%	0.31	0.32	n/a	n/a	n/a	n/a
Milk, flavored, skim/nonfat	0.30	0.31	0.26	0.30	n/a	n/a
Donuts/churros/honey bun/cinnamon rolls	1.62	1.63	1.72	1.65	1.57	1.50
Apple juice, individual	0.48	0.48	0.52	0.53	0.49	0.47
Cheese, American/processed	1.73	1.78	1.77	1.89	1.64	1.58
Chips, potato or potato sticks	2.51	2.60	2.40	2.57	2.04	2.08
Pizza, pepperoni w/real cheese	1.81	1.84	1.81	1.79	1.25	1.15
Beef, patties cooked	1.72	1.61	1.71	1.97	1.67	1.28
Apples, fresh	0.45	0.43	0.42	0.50	0.43	0.40
Pizza, cheese, type unknown	1.53	1.59	1.29	1.25	1.21	1.78
Pizza, cheese blend	1.36	1.58	1.26	1.47	1.45	1.16
Potatoes, formed, frozen	0.45	0.47	0.43	0.47	0.51	0.42
Sodas, carbonated	0.39	0.41	0.38	0.40	0.36	n/a
Milk, lo fat, fat solids unknown	0.31	0.29	n/a	0.29	0.32	0.34
Catsup, individual pack	0.75	0.68	0.85	0.93	0.70	0.68
Bread, white	0.63	0.61	0.62	0.79	0.64	0.60
Peaches, canned, light syrup	0.60	0.60	0.61	0.59	0.62	0.60
Chicken, patties, white/dark mix unknown	1.83	1.76	1.61	1.78	1.52	1.59
Pizza, pepperoni, cheese unknown	1.50	1.49	1.36	1.58	1.50	1.19
Cookie dough	1.47	1.79	1.37	1.15	1.49	1.22
Oranges, fresh	0.40	0.36	0.38	0.42	0.39	0.33
Beef, breaded patties/nuggets	1.48	1.23	1.48	1.70	1.58	1.20
Mixed fruit, canned, light syrup	0.66	0.67	0.68	0.67	0.68	0.64
Lettuce, heads	0.36	0.35	0.38	0.30	0.35	0.33
Fruit juice, bars, frozen	0.91	0.84	0.87	1.13	0.99	0.79
Fish, nuggets/patties, breaded	1.73	1.76	1.80	1.66	1.84	1.83
Biscuits and rolls	1.09	1.06	1.06	1.15	1.04	0.94
Tomatoes, fresh	0.66	0.66	0.66	0.74	0.83	0.65
Milk, flavored, whole	0.34	0.54	n/a	0.30	0.27	0.41
Cakes/brownies, prepared, individual pack	1.80	1.85	1.69	1.78	2.23	2.76
Meat filled pastry (includes Hot Pockets)	1.99	1.85	1.85	1.96	2.07	1.90

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study, 1998.*

## **2. Relationship of Cost Per Pound and Decision-Maker Responsible for Food Selection**

As reported in Chapter VI, food selection is the responsibility of the food service director in the majority (71.3 percent) of all SFAs. This is followed in relative importance by the kitchen manager/head cook (19.0 percent), predominately in smaller districts, and by food service management companies (8.7 percent) operating in districts of all sizes. A variety of other decision-makers are also responsible for making food selections, including purchasing departments, nutritionists, and school boards, but they collectively accounted for only about 1.0 percent of all districts.

The relationship between per pound cost and food selection responsibility closely resembles the relationship between per pound cost and vendor selection. The number of food items for which each type of decision-maker was found to have the mean lowest cost, highest cost, and the ratio of the number of lowest-to-highest cost is as follows:

<u>Decision-maker</u>	<u>Number lowest cost</u>	<u>Number highest cost</u>	<u>Ratio lowest/highest</u>
district food service director	4	2	2.0
business office	16	12	1.3
kitchen manager	7	21	0.3
food service management company	9	7	1.3
other	23	13	1.8

Food service directors most frequently fall in the middle of the per unit cost range and are rarely at the extreme lower or upper boundaries. This should not be too surprising since food service directors comprise such a large share of the total and therefore represent a variety of off-setting influences.

Purchasing offices and food service management companies both have slightly more food items that are lowest cost than highest cost, though the difference is not significant. The "other" category is associated with a large member of lowest cost items that exceeds the number of highest cost by nearly 2 to 1. However, this category is based on a small number of observations representing very diverse situations that defy generalization.

The most clear-cut relationship revealed in Table VII-5 is the relatively large number of food items (21) for which the kitchen manager/head cook was highest cost. As noted above, however, this position is inversely correlated (and highly so) with district size. Thus, we suspect that the relationship here has as much to do with size as it does with who is responsible for food selection.

**Table VII-5: Cost Per Pound for Foods Frequently Purchased by  
Public Unified NSLP School Districts, SY 1996/97,  
by Decision-Maker Responsible for Food Selection**

Food Item	District food service director	Business office/ purch. dept.	Kitchen mgr/ head cook	Food service mgmt. company	Other
	-----dollars per pound-----				
Milk, flavored, lo fat, 1%	0.30	0.31	0.28	0.29	0.28
Milk, flavored, lo fat, fat solids unknown	0.31	0.28	0.32	0.31	0.28
Milk, whole	0.32	0.31	0.32	0.31	0.30
Milk, lo fat, 2%	0.31	0.38	0.30	0.29	0.29
Hamburger and hot dog buns/steak and sub	0.81	0.77	0.88	0.77	0.82
Potatoes, french fries/wedges, frozen	0.45	0.43	0.48	0.42	0.45
Fruit drinks, individual	0.43	0.41	0.43	0.43	0.38
Orange juice, individual	0.47	0.41	0.50	0.53	0.50
Cereals, individual	3.92	3.16	4.05	4.24	3.50
Milk, lo fat, 1%	0.31	0.47	0.30	0.29	0.28
Pizza, w/real cheese	1.71	1.97	1.61	1.73	2.00
Ice cream/ice milk novelties	1.24	1.25	1.27	1.38	1.03
Pizza, sausage w/cheese blend	1.32	1.30	1.33	1.32	1.32
Chicken, patties, white meat	1.80	1.64	1.82	1.67	1.86
Pizza, pepperoni w/cheese blend	1.38	1.19	1.35	1.37	1.62
Chicken, nuggets, white meat	1.70	1.55	1.88	1.53	1.94
Cookies individual	2.21	2.78	2.48	1.98	2.69
Chicken, nuggets, white/dark mix unknown	1.77	1.43	1.93	1.57	1.93
Chips, tortilla/corn	1.47	1.23	1.45	1.41	1.55
Milk, flavored, lo fat, .5%	0.31	0.34	n/a	n/a	n/a
Milk, flavored, skim/nonfat	0.29	n/a	0.32	0.26	0.25
Donuts/churros/honey bun/cinnamon rolls	1.63	1.59	1.56	1.71	1.48
Apple juice, individual	0.48	0.40	0.51	0.52	0.48
Cheese, American/processed	1.73	1.69	1.85	1.76	1.76
Chips, potato or potato sticks	2.51	2.63	2.40	2.34	2.27
Pizza, pepperoni w/real cheese	1.80	1.92	1.62	1.81	1.99
Beef, patties cooked	1.71	1.64	1.92	1.64	1.34
Apples, fresh	0.45	0.45	0.48	0.42	0.38
Pizza, cheese, type unknown	1.52	1.63	1.24	1.41	1.43
Pizza, cheese blend	1.36	1.50	1.45	1.27	1.17
Potatoes, formed, frozen	0.45	0.42	0.48	0.42	0.54
Sodas, carbonated	0.39	0.48	0.36	0.38	0.33
Milk, lo fat, fat solids unknown	0.31	0.29	0.29	n/a	0.32
Catsup, individual pack	0.75	0.67	0.86	0.83	0.63
Bread, white	0.63	0.58	0.74	0.62	0.55

**Table VII-5: Cost Per Pound for Foods Frequently Purchased by  
Public Unified NSLP School Districts, SY 1996/97,  
by Decision-Maker Responsible for Food Selection (continued)**

Food Item	District food service director	Business office/ purch. dept.	Kitchen mgr/ head cook	Food service mgmt. company	Other
	-----dollars per pound-----				
Peaches, canned, light syrup	0.59	0.77	0.61	0.61	0.59
Chicken, patties, white/dark mix unknown	1.82	1.61	1.83	1.54	1.68
Pizza, pepperoni, cheese unknown	1.49	1.24	1.61	1.57	1.19
Cookie dough	1.48	1.59	1.29	1.37	1.66
Oranges, fresh	0.39	0.41	0.40	0.39	0.31
Beef, breaded patties/nuggets	1.46	1.39	1.56	1.46	1.29
Mixed fruit, canned, light syrup	0.66	0.67	0.68	0.67	0.66
Lettuce, heads	0.35	0.46	0.33	0.37	0.33
Fruit juice, bars, frozen	0.90	0.78	1.16	0.88	0.95
Fish, nuggets/patties, breaded	1.73	1.51	1.88	1.85	1.40
Biscuits and rolls	1.08	1.07	1.10	1.09	1.10
Tomatoes, fresh	0.67	0.68	0.74	0.63	0.76
Milk, flavored, whole	0.34	0.39	0.40	0.41	n/a
Cakes/brownies, prepared, individual pack	1.83	1.66	1.87	1.65	2.49
Meat filled pastry (includes Hot Pockets)	1.97	1.69	2.09	1.87	1.96

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study*, 1998.

### **3. Relationship Between Cost Per Pound and Procurement Method**

As we found in Chapter VI, SFAs now make greater use of formal bidding procedures than they did at the time of the earlier study, though informal methods are still used widely. The question to be addressed in this section is: to what extent are differences in procurement method associated with differences in product cost? We address this by comparing the mean per pound cost of the same list of fifty individual food items examined in the previous section. The same procurement methods discussed in Chapter VI are used here.

Since SFAs reported the procurement methods they used for each of eight different product categories separately, each of the fifty food items for which costs were compared was assigned

to one of these categories.<sup>1</sup> Seven of the eight product categories are represented; fresh meat is the only category not represented. To illustrate, the mean per unit cost of flavored, 1% milk for a given SFA is associated with the procurement method that the SFA reported using in the purchase of its dairy products.

An examination of the prices displayed in Table VII-6 reveals the following with regard to the number of items for which each method was lowest cost or highest cost (including both methods when two methods had the same mean cost):

<u>procurement method</u>	<u>number lowest cost</u>	<u>number highest cost</u>	<u>ratio lowest/highest</u>
formal line item bids	16	2	8.0
formal lump sum bids	13	5	2.6
telephone bids/quotes	10	17	0.6
salesperson visits	4	21	0.2
other	16	10	1.6

Not surprisingly, the more formal approaches to procurement are found to result in lower cost more frequently than the more informal approaches. For this particular list of foods, the line item approach to formal bidding resulted in the greatest number of items at lowest cost and the least number at highest cost. In contrast, purchases made through sales visits experienced the highest cost outcome, and by a wide margin.

About 15 percent of all SFAs responding to the survey reported that they either used a different procurement method than the four approaches listed in the question or that they were too far removed from procurement to know for certain which method was being used for one or more of the food categories. One-third of the sample SFAs indicating use of “other” procurement methods did so for the latter reason. Three-quarters of these cited their participation in a cooperative buying program (including the USDA/DOD fresh produce program) as the reason while the remaining one-quarter attributed it to their association with a food service management company.

---

<sup>1/</sup> These assignments are described in Appendix E.

**Table VII-6: Mean Cost Per Pound for the Top Fifty Foods Purchased by Public Unified NSLP School Districts, SY 1996/97, by Procurement Method Used**

Food Item	Procurement Methods				
	Formal line item bids	Formal lump sum bids	Telephone bids/ quotes	Sales- person visits	Other
	-----(\$/pound)-----				
Milk, flavored, lo fat, 1%	0.29	0.30	0.33	0.31	0.30
Milk, flavored, lo fat, fat solids unknown	0.30	0.31	0.33	0.34	0.28
Milk, whole	0.31	0.32	0.34	0.33	0.31
Milk, lo fat, 2%	0.30	0.31	0.32	0.33	0.29
Hamburger and hot dog buns/steak and sub roll	0.80	0.79	0.89	1.12	0.80
Potatoes, french fries/wedges, frozen	0.43	0.46	0.50	0.51	0.42
Fruit drinks, individual	0.42	0.43	0.44	0.43	0.45
Orange juice, individual	0.46	0.49	0.47	0.52	0.47
Cereals, individual	3.71	3.93	4.00	4.90	3.77
Milk, lo fat, 1%	0.31	0.31	0.32	0.30	0.30
Pizza, w/real cheese	1.70	1.77	2.12	1.54	1.88
Ice cream/ice milk novelties	1.23	1.21	1.44	1.41	1.24
Pizza, sausage w/cheese blend	1.32	1.31	1.68	1.32	1.27
Chicken, patties, white meat	1.73	1.85	2.11	1.88	1.73
Pizza, pepperoni w/cheese blend	1.38	1.39	1.66	1.32	1.32
Chicken, nuggets, white meat	1.72	1.64	1.63	1.78	1.73
Cookies individual	2.14	2.05	2.38	2.51	2.53
Chicken, nuggets, white/dark mix unknown	1.78	1.80	1.62	1.78	1.69
Chips, tortilla/corn	1.42	1.37	1.78	1.54	1.57
Milk, flavored, lo fat, .5%	0.32	0.31	n/a	n/a	n/a
Milk, flavored, skim/nonfat	0.31	0.29	0.27	0.31	0.26
Donuts/churros/honey bun/cinnamon rolls	1.57	1.67	1.71	1.67	1.71
Apple juice, individual	0.47	0.50	0.44	0.54	0.46
Cheese, American/processed	1.70	1.77	1.72	1.86	1.80
Chips, potato or potato sticks	2.41	2.43	2.87	2.60	2.39
Pizza, pepperoni w/real cheese	1.67	1.91	2.13	1.90	2.04
Beef, patties cooked	1.69	1.70	1.75	1.86	1.51
Apples, fresh	0.45	0.44	0.44	0.46	0.46
Pizza, cheese, type unknown	1.53	1.48	1.32	1.45	1.55
Pizza, cheese blend	1.38	1.32	1.64	1.34	1.23
Potatoes, formed, frozen	0.43	0.46	0.50	0.51	0.44
Sodas, carbonated	0.38	0.38	0.41	0.42	0.38
Milk, lo fat, fat solids unknown	0.30	0.32	n/a	0.29	0.29
Catsup, individual pack	0.74	0.74	0.86	0.89	0.76
Bread, white	0.63	0.62	0.83	0.72	0.68
Peaches, canned, light syrup	0.58	0.62	0.57	0.64	0.59
Chicken, patties, white/dark mix unknown	1.71	1.91	1.97	1.83	1.83
Pizza, pepperoni, cheese unknown	1.47	1.43	1.64	1.59	1.64
Cookie dough	1.45	1.50	1.23	1.45	1.62
Oranges, fresh	0.40	0.36	0.39	0.41	0.42
Beef, breaded patties/nuggets	1.44	1.47	1.49	1.60	1.48
Mixed fruit, canned, light syrup	0.65	0.67	0.67	0.70	0.68
Lettuce, heads	0.36	0.36	0.32	0.35	0.41
Fruit juice, bars, frozen	0.90	0.93	0.87	1.01	0.75
Fish, nuggets/patties, breaded	1.69	1.90	1.40	1.75	1.86
Biscuits and rolls	1.09	1.08	0.96	1.11	1.11
Tomatoes, fresh	0.69	0.65	0.64	0.77	0.59
Milk, flavored, whole	0.37	0.32	0.75	0.33	n/a
Cakes/brownies, prepared, individual pack	1.67	2.00	1.95	1.97	1.73
Meat filled pastry (includes Hot pockets)	1.92	2.09	1.79	2.02	1.90

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study*, 1998.



#### **4. Relationship Between Cost Per Pound and Pricing Method**

As we found in Chapter VI, SFAs use a variety of techniques to price their food acquisitions. Some of these techniques are formal in the sense that they are specified under terms of the contract they enter into with vendors. Others are arrived at informally between SFAs and their suppliers.

For those districts that price their purchases contractually, a fixed price approach is most commonly used. The principal exception is the widespread use of escalator clauses as part of fixed price contracts for dairy products, though they are used for other foods as well, though less frequently. For those districts that procure informally through salesman visits or by telephone or fax orders, prices are most frequently established on the basis of price bids or quotes.

The number of food items listed in Table VII-7 for which each pricing method was lowest and highest priced and the ratio of the two is as follows:

<b><u>Pricing method</u></b>	<b><u>Number lowest cost</u></b>	<b><u>Number highest cost</u></b>	<b><u>Ratio lowest/highest</u></b>
fixed price contract	9	5	1.8
fixed price w/escalator	13	2	6.5
formula price	6	9	0.7
cost-based price	6	1	6.0
bid or quote price	4	3	1.3
retail price	9	10	0.9
mutually accepted discount	4	17	0.2
other	10	9	1.1

While each pricing method is represented at least once as both lowest price and as highest price, as a group the formal pricing methods exhibit a substantially more favorable relationship between the number of lowest and highest priced food items. Of these methods, the fixed price with escalators has the highest ratio of low to high prices, though cost-based pricing techniques has a ratio that is nearly at high. It is noted that four of the five highest prices reported for the “fixed price contract” technique are fluid milk products. This illustrates the drawback of using a rigid pricing procedure for a food that is inherently unstable in price, particularly in an era of reduced government intervention in commodity markets, including the market for fluid milk.

Bid or quote pricing, a technique that is widely used among SFAs that use less formal procurement procedures, seems to result in per unit costs that generally fall somewhere between the extremes. Discount pricing, which is used by only about 10 percent of all SFAs and most frequently in pricing fresh produce, had the largest number of highest price items by far (17) and the lowest ratio of low to high (0.2).

The “other” pricing category was represented in the sample by a diverse group of six school districts. Three of these districts were identified as “other” only for fresh produce; two of the three obtained their produce through DOD. Another SFA was included because it purchased all foods through a cooperative while still another was operated by a food service management company.

A comparison of the relationship between per unit cost and the pricing methods used for SYs 1984/85 and 1996/97 is summarized in Table VII-8 below. The results suggest two things about this relationship. First, formal pricing methods resulted in lower costs in both periods. Second, the clear advantage (in terms of lower per unit cost) that formal methods exhibited in 1984/85 had lessened by 1996/97, though a significant advantage remained. This is perhaps due to the reduced use of informal techniques in both procurement and pricing that occurred over this period.

**Table VII-7: Mean Cost Per Pound for the Top Fifty Foods Purchased by Public Unified NSLP School Districts,  
by Product Pricing Method Used, SY 1996/97**

Food Items	Formal pricing method				Informal pricing method			Other
	Fixed price contract	Fixed price w/escalator	Formula price	Cost-based price	Bid or quote price	Retail price	Mutually accepted discount	
	-----dollars per pound-----							
Milk, flavored, lo fat, 1%	0.29	0.29	0.30	0.28	0.30	0.31	0.33	0.35
Milk, flavored, lo fat, fat solids unknown	0.31	0.30	0.41	0.32	0.31	0.30	0.37	0.30
Milk, whole	0.31	0.31	0.32	0.32	0.32	0.31	0.34	0.35
Milk, lo fat, 2%	0.31	0.30	0.38	0.31	0.31	0.33	0.31	0.33
Hamburger and hot dog buns/steak and sub roll	0.78	0.84	0.92	0.79	0.85	0.92	1.15	0.92
Potatoes, french fries/wedges, frozen	0.43	0.43	0.46	0.50	0.45	0.51	0.50	0.54
Fruit drinks, individual	0.42	0.43	0.46	0.45	0.43	0.46	0.41	0.29
Orange juice, individual	0.46	0.49	0.50	0.48	0.48	0.48	0.54	0.25
Cereals, individual	3.82	3.71	3.86	4.07	4.05	4.14	4.97	4.32
Milk, lo fat, 1%	0.30	0.30	0.44	0.29	0.30	0.30	n/a	n/a
Pizza, w/real cheese	1.78	1.70	1.74	1.61	1.69	n/a	1.59	1.86
Ice cream/ice milk novelties	1.17	1.19	1.15	1.37	1.41	1.49	1.40	0.97
Pizza, sausage w/cheese blend	1.27	1.39	1.35	1.40	1.36	1.41	1.26	n/a
Chicken, patties, white meat	1.79	1.67	2.14	1.61	1.79	1.52	2.03	1.77
Pizza, pepperoni w/cheese blend	1.31	1.41	1.48	1.45	1.48	1.22	1.26	1.44
Chicken, nuggets, white meat	1.70	1.59	1.67	1.79	1.76	1.61	1.86	1.41
Cookies individual	2.06	2.57	2.29	2.31	2.29	2.65	2.58	2.29
Chicken, nuggets, white/dark mix unknown	1.77	1.80	1.72	1.65	1.80	1.58	1.64	n/a
Chips, tortilla/corn	1.41	1.52	1.48	1.53	1.48	1.53	1.67	1.15
Milk, flavored, lo fat, .5%	0.33	0.31	0.33	n/a	0.31	n/a	n/a	n/a
Milk, flavored, skim/nonfat	0.31	0.29	n/a	n/a	0.28	n/a	n/a	n/a
Donuts/churros/honey bun/cinnamon rolls	1.60	1.48	1.58	1.70	1.68	1.63	1.72	1.84
Apple juice, individual	0.46	0.49	0.50	0.50	0.51	0.40	0.54	0.33
Cheese, American/processed	1.70	1.71	1.72	1.73	1.80	1.95	1.97	1.83
Chips, potato or potato sticks	2.40	2.50	2.48	2.53	2.54	2.58	2.72	1.95
Pizza, pepperoni w/real cheese	1.78	1.75	1.94	1.75	1.79	1.82	1.95	2.06
Beef, patties cooked	1.66	1.51	1.89	1.85	1.81	1.96	1.93	1.49
Apples, fresh	0.43	0.43	0.44	0.45	0.45	0.44	0.48	0.46
Pizza, cheese, type unknown	1.45	1.50	1.73	1.46	1.62	1.31	1.64	n/a
Pizza, cheese blend	1.33	1.37	1.33	1.28	1.39	1.37	1.45	n/a
Potatoes, formed, frozen	0.44	0.44	0.43	0.49	0.46	0.48	0.54	0.44

**Table VII-7: Mean Cost Per Pound for the Top Fifty Foods Purchased by Public Unified NSLP School Districts, by Product Pricing Method Used, SY 1996/97 (continued)**

Food Items	Formal pricing method				Informal pricing method			Other
	Fixed price contract	Fixed price w/escalator	Formula price	Cost-based price	Bid or quote price	Retail price	Mutually accepted discount	
	-----dollars per pound-----							
Sodas, carbonated	0.39	0.34	0.37	0.38	0.39	0.42	0.47	0.42
Milk, lo fat, fat solids unknown	0.31	0.31	0.29	n/a	0.30	n/a	n/a	n/a
Catsup, individual pack	0.72	0.71	0.75	0.85	0.82	0.94	0.83	0.90
Bread, white	0.61	0.69	0.43	0.53	0.66	0.89	0.97	0.60
Peaches, canned, light syrup	0.58	0.60	0.61	0.61	0.60	0.68	0.67	0.61
Chicken, patties, white/dark mix unknown	1.80	1.69	2.12	1.55	1.74	2.05	1.83	2.14
Pizza, pepperoni, cheese unknown	1.38	1.58	1.79	1.28	1.63	2.08	1.27	n/a
Cookie dough	1.46	1.47	1.53	1.40	1.46	1.41	1.45	1.37
Oranges, fresh	0.38	0.40	0.36	0.40	0.39	0.41	0.42	0.40
Beef, breaded patties/nuggets	1.43	1.28	1.40	1.83	1.54	1.81	1.71	1.65
Mixed fruit, canned, light syrup	0.66	0.66	0.67	0.68	0.66	0.76	0.70	0.70
Lettuce, heads	0.37	0.38	0.41	0.35	0.34	0.33	0.33	0.46
Fruit juice, bars, frozen	0.87	0.88	0.88	0.91	0.97	1.02	1.34	1.05
Fish, nuggets/patties, breaded	1.76	1.69	1.73	1.81	1.75	1.52	1.87	1.54
Biscuits and rolls	1.07	1.04	1.06	0.81	1.13	1.42	1.33	0.87
Tomatoes, fresh	0.67	0.67	0.63	0.70	0.65	0.70	0.68	0.99
Milk, flavored, whole	0.42	0.32	0.33	n/a	0.29	0.36	n/a	n/a
Cakes/brownies, prepared, individual pack	1.64	1.65	1.60	2.02	2.14	1.82	2.14	1.98
Meat filled pastry (includes Hot Pockets)	2.05	1.74	1.79	1.82	2.01	1.49	1.97	2.19

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.

Source: *School Food Purchase Study*, 1998.

**Table VII-8: Percentage of Selected List of Food Items that Averaged  
Lowest Price and Highest Price, by Method of Product Pricing,  
SYs 1984/85 and 1996/97**

Rank/school year	Formal pricing methods				Informal pricing methods			
	Fixed price	Fixed price w/escalator	Formula price	Cost- based price	Bid or quote	Retail price	Discount price	Other
	-----percent-----							
<u>Lowest price</u>								
1984/85	21	42	n/a	n/a	19	12	6	n/a
1996/97	15	21	10	10	7	15	7	16
<u>Highest price</u>								
1984/85	9	9	n/a	n/a	2	60	19	n/a
1996/97	9	4	16	2	5	18	30	16

Source: *School Food Purchase Study, 1987* and *School Food Purchase Study, 1998*.

### **5. Relationship Between Cost Per Pound and Participation in Cooperative Buying and Use of Food Service Management Company**

Two operational changes that have come into greater prominence among SFAs in recent years, as described earlier in this report, are the involvement of school districts in cooperative buying programs and the use of food service management companies (FSMCs) to run school food service operations. A primary purpose of both actions is presumably a desire to achieve improved economies of operation.

The study conducted in 1984/85 found that less than 10 percent of the school districts reported membership in a buying cooperative. No comparisons of cost were made between SFAs taking part in cooperative buying programs and those that did not take part. The earlier study also found that only about 1.6 percent of all school districts used a food service management company in 1983/84. A comparison of per unit costs for a selected list of food items indicated that FSMCs

did not compare favorably with most other districts, categorized on the basis of who was responsible for selecting vendors for the districts.

Given the increased use of both cooperatives and FSMCs, the per unit cost of frequently purchased foods for SFAs engaged in these activities was compared against the per unit cost of all other SFAs. The results appear in Table VII-9 below. Since not all school districts that participate in cooperative buying programs do all their buying cooperatively, only those food items that fell within the categories for which respondents indicated they purchased through the cooperative buying program were considered to have been cooperatively purchased.

Of the 47 food items for which prices differed depending on participation in a cooperative buying program, those SFAs participating in a cooperative had the lowest mean price for 36 items (76.6 percent). This would appear to represent a substantial cost advantage. A comparison of the weighted mean cost across all food items on the list indicates that foods purchased through cooperatives were about 3.6 percent below those purchased through other means.<sup>1</sup>

It should also be noted, as discussed in Chapter VI, that participation in cooperative buying programs is greatest among small and mid-size school districts and that the estimated share of overall food purchases made by SFAs participating in these programs is highest among the smallest districts. Thus, any cost advantage achieved by these districts is probably not due to their size since smaller districts, as a group, tend to have higher costs.

Information on other possible costs associated with participation in a cooperative program, such as a membership fee or periodic overhead assessment, was not collected. A more meaningful comparison would require the inclusion of these costs.

School food programs managed by FSMCs were found to have a per unit cost advantage over those not managed by FSMCs. Of the 44 food items that can be compared and for which there were differences in the mean cost, districts managed by FSMCs had the lower cost for 27 items or 61.4 percent. For this particular market basket (weighted on the basis of the relative volume of each food purchased by all SFAs), FSMC districts had costs that were 1.5 percent lower than non-FSMC districts. As with buying cooperatives, the invoiced cost of food items provided by FSMCs does not tell the entire story since there are other costs associated with these operations.

---

1/ Costs were weighted on the basis of the volume of total purchases.

**Table VII-9: Cost Per Pound of Foods Frequently Acquired by Public Unified  
NSLP School Districts, by Participation in Cooperative Buying and  
Involvement of Food Service Management Company, SY 1996/97**

Food Item	Purchased through cooperative buying	Not purchased through cooperative buying	Managed by FSMC	Not managed by FSMC
	-----dollars per pound-----			
Milk, flavored, lo fat, 1%	0.29	0.30	0.29	0.29
Milk, flavored, lo fat, fat solids unknown	0.30	0.31	0.29	0.29
Milk, whole	0.29	0.32	0.32	0.31
Milk, lo fat, 2%	0.29	0.31	0.29	0.29
Hamburger and hot dog buns/steak and sub roll	0.75	0.82	0.74	0.78
Potatoes, french fries/wedges, frozen	0.42	0.46	0.39	0.44
Fruit drinks, individual	0.42	0.43	0.37	0.39
Orange juice, individual	0.47	0.48	0.47	0.44
Cereals, individual	3.75	4.00	3.79	3.51
Milk, lo fat, 1%	0.30	0.31	0.28	0.30
Pizza, w/real cheese	1.74	1.72	1.85	1.64
Ice cream/ice milk novelties	1.17	1.27	1.23	1.08
Pizza, sausage w/cheese blend	1.33	1.32	1.21	1.23
Chicken, patties, white meat	1.74	1.81	1.51	1.77
Pizza, pepperoni w/cheese blend	1.34	1.40	1.29	1.32
Chicken, nuggets, white meat	1.69	1.72	1.58	1.67
Cookies individual	2.03	2.27	1.70	2.08
Chicken, nuggets, white/dark mix unknown	1.71	1.80	1.73	1.72
Chips, tortilla/corn	1.41	1.48	1.25	1.64
Milk, flavored, lo fat, .5%	0.29	0.32	n/a	0.31
Milk, flavored, skim/nonfat	0.29	0.29	0.26	0.28
Donuts/churros/honey bun/cinnamon rolls	1.54	1.64	1.57	1.50
Apple juice, individual	0.49	0.48	0.51	0.44
Cheese, American/processed	1.77	1.73	1.65	1.65
Chips, potato or potato sticks	2.34	2.51	2.32	2.26
Pizza, pepperoni w/real cheese	1.82	1.79	1.75	1.73
Beef, patties cooked	1.65	1.74	1.54	1.68
Apples, fresh	0.45	0.45	0.38	0.43
Pizza, cheese, type unknown	1.50	1.51	1.30	1.49
Pizza, cheese blend	1.31	1.37	1.24	1.31
Potatoes, formed, frozen	0.43	0.46	0.42	0.44
Sodas, carbonated	0.39	0.39	0.34	0.36
Milk, lo fat, fat solids unknown	0.29	0.31	na	0.32
Catsup, individual pack	0.75	0.76	0.85	0.70
Bread, white	0.56	0.65	0.55	0.62
Peaches, canned, light syrup	0.58	0.61	0.59	0.60
Chicken, patties, white/dark mix unknown	1.78	1.79	1.56	1.72
Pizza, pepperoni, cheese unknown	1.57	1.46	1.68	1.41
Cookie dough	1.51	1.45	1.47	1.46
Oranges, fresh	0.40	0.39	0.35	0.37
Beef, breaded patties/nuggets	1.44	1.48	1.63	1.37
Mixed fruit, canned, light syrup	0.65	0.67	0.64	0.67
Lettuce, heads	0.32	0.36	0.31	0.32
Fruit juice, bars, frozen	0.89	0.92	0.73	0.87
Fish, nuggets/patties, breaded	1.81	1.72	1.65	1.69
Biscuits and rolls	0.93	1.11	1.04	1.01
Tomatoes, fresh	0.70	0.67	0.56	0.62
Milk, flavored, whole	0.38	0.35	0.41	0.30
Cakes/brownies, prepared, individual pack	1.71	1.84	1.44	1.49
Meat filled pastry (includes Hot Pockets)	1.94	1.98	1.80	1.79

Note: Shading indicates lowest price. When two or more categories hold the lowest price, all are shaded.  
Source: *School Food Purchase Study*, 1998.

**6. Relationship of Number of Food Items  
Procured and Food Costs Per 1,000 Students**

The vast majority of all school districts acquire between 100 and 250 individual food items (as defined for purposes of this study). Of the SFAs included in the study sample, 84 percent had acquisitions in 1996/97 that fell within this range. In Table VII-10 below, the mean annual food cost per thousand enrolled students is compared among school districts cross-classified by size of school district and number of individual food items acquired during the 1996/97 study period.

The variation in cost levels per 1,000 students is surprisingly large, ranging from as little as \$26,493 to as much as \$195,996. Though the variation for similar data in 1984/85 was not quite as great, the largest value was a multiple of the smallest value then too. Also, the extreme values in the table below represent a small number of SFAs (as indicated) and should therefore be interpreted with care.

These values are subject to numerous other influences beyond size of district and number of items, including the relative importance of reimbursable meals versus a la carte food sales and the extent to which enrollment levels correspond to the number of students obtaining their meals through these programs.

These qualifications aside, the findings suggest two relationships. First, costs tend to rise as the number of food items acquired increases. We suspect that a larger number of food items is associated with the increased sale of a la carte foods and/or with greater use of more highly processed foods, including prepared sandwiches and prepared meals. The latter also tend to be higher cost.

The second relationship is between per unit cost and size of district; the smaller the district the higher the per unit cost. Furthermore, this relationship occurs in almost all cases among districts within the same range of items procured. This is generally consistent with the findings reported earlier in this Chapter relative to the relationship between district size and cost per pound. In this comparison, however, not only do the per unit prices of individual foods or categories come into play but so too do several other factors. This includes differences in the mix of foods, in the efficiency of food utilization and preparation, in whether breakfasts are served, in the relative importance of a la carte versus reimbursable meals, and in rates of student participation. Since the bases of this comparison are the total food expenditures and the total number of students in attendance (adjusted for those not having access to the program), the results reflect a convergence of these influences.



In combination, these factors are resulting in substantially higher food costs per 1,000 students for smaller school districts as well as for districts of all sizes that procure a wider array of foods. For example, the per unit cost for districts with an enrollment of less than 1,000 was 51.6 percent larger than the per unit cost for districts with an enrollment of 5,000 to 24,999 in the 101 to 150 items procured range. Similar magnitudes of difference exist among other comparisons within this table, ignoring those measures that represent a small number of observations and might therefore be considered outliers.

Since the cost of food -- the focus of this study -- is but one element in the overall financial picture, it is necessary to look at the relationship of these costs to other elements before drawing conclusions. In particular, it is important to know if higher food costs are off-set by lower preparation and serving costs and reduced waste and if they result in higher revenue.

**Table VII-10: Mean Cost per Thousand Enrolled Students in Public Unified NSLP School Districts by Number of Individual Food Items Procured and by Size of School District, SY 1996/97**

Number of individual food items procured	School district enrollment			
	Less than 1,000	1,000 to 4,999	5,000 to 24,999	25,000 or more
	-----dollars per 1,000 students-----			
1 to 50	26,493 (1)			
51 to 100	76,935 (9)	91,070 (4)		115,050 (2)
101 to 150	135,817 (20)	98,298 (54)	89,563 (16)	110,916 (2)
151 to 250	189,369 (5)	142,327 (85)	119,583 (61)	104,625 (28)
251 to 350		195,996 (4)	144,454 (13)	118,547 (15)
More than 350				144,866 (2)

Note: Number of observations for each entry appears in parentheses.

Source: *School Food Purchase Study*, 1998.