United States
Department of
Agriculture

**Food and
Nutrition
Service**

Office of
Analysis and
Evaluation

School Lunch and Breakfast Cost Study

Final Report

October 1994

School Lunch and Breakfast Cost Study

Final Report

October 1994

Contract No. 53-3198-2-021

Submitted to:

John Endahl
Office of Analysis and Evaluation
Food and Nutrition Service
United States Department of Agriculture
3101 Park Center Drive
Alexandria, VA 22302

Submitted by:

Frederic B. Glantz
Christopher Logan
Hope M. Weiner
Michael Battaglia
Ellen Gorowitz

Table of Contents

Table of Contents
(continued)

Acknowledgements

The School Lunch and Breakfast Cost Study represents the culmination of more than two years of effort by many persons in several organizations. While it is not possible to thank every person who contributed to the study, we want to acknowledge the support and contributions of several individuals.

Special thanks are due to the school districts that participated in the study. The cooperation of food service directors and their staff was invaluable. Participating schools were most gracious in permitting study staff to observe meal preparation and service over several days. Thanks too to the school district administrators who opened their doors to the study staff and found time in their busy days to be interviewed and provide school district financial records.

Staff of the Office of Analysis and evaluation, Food and Nutrition Service, U.S. Department of Agriculture had responsibility for overseeing the project. John Endahl, the Project Officer, provided valuable criticism and direction throughout the project.

Brown & Company of Arlington, Virginia was Abt Associates' subcontractor for part of the data collection. Their staff conducted on-site reviews of financial records of each of the participating school districts, and interviewed food service directors and other school district administrators. Milton Hatcher and Tyrone Brown were responsible for the subcontract.

Several staff members at Abt Associates played important roles in the project. Marjorie Levin directed the field operations. Michael Battaglia developed the sampling design. Ellen Lee managed the data base and assisted in the analysis. Christopher Logan and Ellen Gorowitz helped analyze the data. Tracy Olcott coordinated the production of all project reports. Special thanks to Hope Weiner who was involved in all aspects of the study from beginning to end. The overall success of the project is in no small measure the result of her tireless efforts.

Frederic B. Glantz
Project Director
Abt Associates Inc.

Executive Summary

STUDY BACKGROUND

The School Lunch and Breakfast Cost Study was carried out by Abt Associates Inc. of Cambridge, Massachusetts, under contract to the Food and Nutrition service (FNS) of the United States Department of Agriculture (USDA). It provides a detailed examination of the cost of producing reimbursable meals in the National School Lunch and Breakfast Programs (NSLP and SBP) during School Year (SY) 1992-93. Information was collected information from a nationally-representative sample of 94 School Food Authorities (SFAs). In each SFA, data were collected in a representative sample of schools and kitchens. In total, data were collected in a sample of 540 schools.

The study examined the costs charged to SFAs (reported costs), as well as those costs incurred by the school district in support of SFA operations, but not charged to the SFA (unreported costs). Together, the reported costs and the unreported costs are the full cost of meal production.

NONPROFIT FOODSERVICE OPERATIONS

SFAs are required to be nonprofit and self-sufficient. Usually SFAs operate at the break-even level, i.e., costs should equal revenues from all sources. Nonprofit status is determined by the financial status of the school food service ***as a whole*** rather than the financial status of each Federal program separately. SFAs are not required to maintain separate cost and revenue records for the NSLP, SBP and other nonprofit school food service activity. SFAs can use Federal lunch and non-severe need breakfast payments to support their overall nonprofit school food service. Federal funds from NSLP can be used to support SBP or non-program food service such as a la carte service.

Because SFAs are nonprofit, reported costs will generally equal revenues. Within this overall status though, SFAs may shift costs between breakfast and lunch, or reimbursable and non-reimbursable meals. If revenues from reimbursable meals exceed the cost of producing these meals, the SFA may use the funds to support a la carte meals. Similarly, if revenues from reimbursable meals are less than the costs, the SFA may use the a la carte revenues to support the cost of reimbursable meals.

Major findings related to SFA revenues and reported costs include:

- On average, SFAs operate at the break-even level, with total revenues about equal to total reported costs.
- Revenues from reimbursable meals exceed the cost of producing those meals. Reimbursable lunches generate a revenue surplus that is used to offset losses from reimbursable breakfasts.
- SFAs also subsidize non-program food service (e.g., a la carte) with surplus revenues from reimbursable lunches.
- Revenues from reimbursable meals (including government subsidies and student payments) accounted for an average of 85 percent of total SFA revenues.

REPORTED COSTS

From an SFA's perspective, reported costs ***are*** the costs of running the Child Nutrition programs. That is, reported costs are the costs SFAs are expected to cover from revenues derived from food service sales and government reimbursements. Major findings related to the reported cost of producing reimbursable meals include:

- The combined Federal subsidy for free lunches and breakfasts covers the cost of producing these meals. The combined median cost of producing NSLP and SBP meals ($2.68) was less than the combined Federal subsidy for free meals ($2.79).
- The reported cost of producing a reimbursable lunch was less than the Federal subsidy for a free lunch. The SFAs' median reported cost of producing a reimbursable lunch was $1.63, compared with a Federal subsidy of $1.84 for a free lunch. In 75% of the SFAs, the reported cost of producing reimbursable lunches was less than the Federal subsidy.
- The reported cost of producing a reimbursable breakfast exceeded the Federal subsidy for a free breakfast. The SFAs' median reported cost of producing a reimbursable breakfast was $1.05, compared with a Federal subsidy of $0.95 for a free breakfast ($1.12 for a "severe need" breakfast). In two-thirds of the SFAs, reported costs exceeded the regular reimbursement rate for free breakfasts.

Federal meal subsidies are not intended to cover all costs for all SFAs. It is expected that some SFAs will have reported costs above the subsidy while others will have costs below the subsidy. However, it is intended that, on average, across all SFAs Federal subsidies will cover the costs of producing reimbursable meals.

UNREPORTED COSTS

Most school districts incur some costs in support of the food service operations that are not charged to the SFA budget. In some cases, the school districts chose to bear these costs as a way to subsidize the SFA, while in other cases, the districts carried the costs because the SFA had insufficient funds to cover all expected costs. Major findings related to the unreported costs and the full cost of producing reimbursable meals include:

- Across all SFAs, unreported costs accounted for an average of 17 percent of full costs.
- For the average SFA, the median full cost of producing a reimbursable lunch and breakfast was $1.88 and $1.38, respectively.
- Unreported costs are primarily labor, indirect costs, equipment depreciation, and utilities.
- Administrative labor costs accounted for 13 percent of the average SFA's full cost (compared to eight percent of the average SFA's reprted cost).

Chapter One

Introduction

The School Lunch and Breakfast Cost Study, conducted for USDA's Food and Nutrition Service (FNS), was designed to "...determine the cost to produce school lunches and breakfasts, including indirect and local administrative costs" (P.L. 101-624). Specifically, the study was intended to meet the following objectives:

- determine the national average cost of producing reimbursable National School Lunch Program (NSLP) and School Breakfast Program (SBP) meals during School Year (SY) 1992-93;
- determine the value of local administrative costs used to produce reimbursable meals;
- determine the composition of indirect costs, the extent to which they are charged to School Food Authority (SFA)[1] accounts, and the basis for these charges;
- determine the composition of SFA revenues, including federal reimbursements, cafeteria sales (student payments for NSLP and SBP reduced- and full-price meals, a la carte, and adult meals, etc.), and State and local cash assistance; and
- determine the extent to which meal production costs vary by the type of meal production/distribution system used by SFAs.

While there have been several previous studies of school meal costs, these efforts have suffered from two important methodological weaknesses:

- They have relied on costs as *reported* by SFAs and have therefore not reflected the cost of all of the resources used by SFAs to produce school meals.
- Because there is no separate accounting of the costs attributable to the production of different meals (e.g., breakfast vs. lunch, reimbursable vs. a la carte meals), past studies have relied on indirect, econometric techniques to convert breakfasts, adult meals, and a la carte sales into NSLP-lunch equivalents (LEQ) to estimate

[1]A school district is an educational entity recognized by the State, responsible for the administration of one or more schools but does not necessarily have the legal authority to operate the NSLP and SBP. A School Food Authority is "...the governing body which is responsible for the administration of one or more schools and has the legal authority to operate the Program therein or be otherwise approved by FNS to operate the program." (7CFR210.2).

unit costs. Such indirect measurement techniques do not provide a true measure of the costs of producing reimbursable lunches and breakfasts.

To overcome these problems, the *Meal Cost Methodology Study* (MCM), conducted by Abt Associates for FNS, developed a methodology to identify and measure the full cost of meal production (i.e., including costs that were not charged to the SFA account) and to allocate these costs to different SFA activities.[2] Abt Associates pilot tested this new direct measurement methodology in 18 SFAs during SY 1990-91 and determined that it is a feasible mechanism for measuring the per-meal costs of reimbursable meals in the NSLP and SBP. This study used the MCM approach (described in Chapter Two) in a nationally-representative sample of SFAs to meet the previously described objectives.

The remainder of this chapter provides brief descriptions of the two programs that are the focus of the study—the NSLP and the SBP—and discusses the issue of defining costs for meals produced and served in these programs.

OVERVIEW OF THE NATIONAL SCHOOL LUNCH PROGRAM AND THE SCHOOL BREAKFAST PROGRAM

The NSLP and the SBP are two of the "Child Nutrition Programs" administered by FNS that operate in every State in the nation. Each program is briefly described below.

The National School Lunch Program

The NSLP is the largest and oldest Child Nutrition Program. The Federal contribution for School Year (SY) 1991-92 was about $4.4 billion, including donated commodities.

The NSLP provides Federal subsidies for school lunches served to children at all income levels. Eligible institutions include public schools, private non-profit schools, and public or licensed residential child care institutions. Nationally, about 95 percent of all public schools and 29 percent of all private schools participate in the NSLP.[3] Any child in a participating school is eligible to purchase a school lunch. About 60 percent of all children in schools regularly participate in the program.[4]

---

[2]Glantz, F. et al., **Child Nutrition Meal Cost Methodology Study** (U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation, 1992).

[3]Committee on Agriculture, Nutrition, and Forestry, U.S. Senate. **Child Nutrition Programs: Description, History, Issues, and Options** (Washington, D.C.: 1983).

[4]Burghardt, J. et al., **The School Nutrition Dietary Assessment Study, School Food Service, Meals Offered, and Dietary Intakes** (Princeton, NJ: Mathematica Policy Research, Inc., 1993).

Federal assistance takes two forms: cash and commodities. To be eligible for Federal subsidy, lunches served must meet nutritional guidelines set forth by the Secretary of Agriculture designed to ensure that the meal provides, on average, one-third of a student's daily nutritional requirements. Federal assistance is performance-based—i.e., reimbursement is provided to States only for meals actually served to students. Two kinds of cash assistance are provided. Under Section 4 of the National School Lunch Act, a cash subsidy is provided for every lunch served, regardless of the income of the child's family. Under Section 11 of the National School Lunch Act, additional cash subsidies are provided for children qualifying for free or reduced-price lunches. Currently, students eligible for a free lunch are those from families with incomes at or below 130 percent of poverty. Reduced-price lunches may be served to students from families whose incomes fall between 130 and 185 percent of poverty. These students may be required to contribute an additional amount of their own money for the lunch—up to $0.40 per lunch. An additional $0.02 per lunch is reimbursed for each meal served in schools in which 60 percent or more of the lunches in the second preceding year were claimed as free or reduced-price meals. Total cash reimbursements received by schools during Fiscal Year (FY) 1992 amounted to approximately $3.8 billion.

The NSLP is the only Child Nutrition Program that requires a matching contribution by States. States are required to provide matching funds equal to up to 30 percent of the amount of Section 4 assistance they received during SY 1980. The actual percentage depends on the average per capita income in the State as compared with the national average. States with average per capita incomes lower than the national average are required to contribute less than 30 percent.

Under Sections 6 and 14 of the National School Lunch Act, schools also receive agricultural commodities for use in school lunches. Entitlement commodity assistance, provided regardless of family income, is available for each meal served (about $0.14 per lunch for SY 1992-93) and is provided to States based on the estimated number of lunches to be served in the school year. In addition, the school lunch program may receive "bonus commodities"—commodities that do not count against the State's entitlement and which vary from year to year both in amount and the types of commodities provided.

In FY 1992, about 24.6 million lunches were served daily in the NSLP. The per meal lunch reimbursement rates in effect for SY 1992-93 are as follows:

	Regular Reimbursement Rates	Average Entitlement Commodities	Total Subsidy
Paid	$0.1625	$0.1400	$0.3025
Reduced-price	1.2950	0.1400	1.4350
Free	1.6950	0.1400	1.8350

Federal law prohibits schools from charging students who qualify for free lunches, but allows them to charge up to $0.40 for reduced-price lunches. There is no limit placed on what paying students may be charged for lunch.

The School Breakfast Program

The SBP provides Federal funds for non-profit breakfast programs in eligible schools (i.e., public or private non-profit) and other approved child care institutions. Initiated in 1967, the program is aimed at "nutritionally needy" children[5]. Throughout its early history, legislation stressed the need to reach children in poor areas, especially rural areas where children might have to travel great distances to school, and children of working mothers.

The current cost of the breakfast program (FY 1992) is about $790 million. As with the NSLP, Federal SBP reimbursement is based on the number of meals served. Per-meal reimbursement rates vary in two ways. First, as in the NSLP, three categories of reimbursement are established according to family income: paid reimbursement is provided for breakfasts served to those from families with incomes above 185 percent of poverty; reduced-price rates are established for breakfasts served to children from families with incomes between 130 and 185 percent of poverty; and free rates are established for breakfast served to children from families with incomes below 130 percent of poverty. Second, a "severe need" rate is established for free and reduced-price breakfasts in schools that served 40 percent or more of their lunches to children below 185 percent of poverty two years prior to the school year for which the rate

[5]Committee on Agriculture, Nutrition, and Forestry, U.S. Senate, 1983.

is claimed.[6] Schools must also demonstrate that unusually high preparation costs exceed the regular reimbursement. The per meal breakfast reimbursement rates in effect for SY 1992-93 are as follows:

	Regular Reimbursement Rates	Severe Need Reimbursement
Paid	$0.1875	$0.1875
Reduced-price	0.6450	0.8225
Free	0.9450	1.1225

Federal law prohibits schools from charging students who qualify for free breakfasts, but allows them to charge up to $0.30 for reduced-price breakfasts. There is no limit placed on what paying students may be charged for breakfast.

Most subsidies are for meals served in elementary schools; not only do more elementary schools participate in the program, but student participation is much greater in these schools. The great majority of children who participate in the program receive free breakfasts (i.e., have incomes below 130 percent of poverty). In FY 1992, 88 percent of all breakfasts were served free or at a reduced-price rate.

Nonprofit Foodservice Operations

SFAs are required to be nonprofit and self-sufficient. Usually SFAs operate at the break-even level, i.e., costs should equal revenues from all sources. Nonprofit status is determined by the financial status of the school food service ***as a whole*** rather than the financial status of each Federal program separately. SFAs are not required to maintain separate cost and revenue records for the NSLP, SBP and other nonprofit school food service activity. SFAs can use Federal lunch and non-severe need breakfast payments to support their overall nonprofit school food service. Federal funds from NSLP can be used to support SBP or non-program food service such as a la carte service.[7]

---

[6]Prior to the 1981 Omnibus Budget Reconciliation Act (OBRA), schools could be designated as severe need if state law required them to operate a breakfast program.

[7]7CFR Parts 210 and 220.

DEFINING MEAL COSTS

In existing cost reporting systems, the definition and measurement of meal production costs depends on the vantage point adopted and on how the information is to be used. At the local level, cost accounting systems are designed to inform local managerial decisions. Most often, school districts expect their food service authorities to operate at the break-even level, i.e., costs should equal revenues from all sources. The cost elements included in the SFA's cost accounting system are, for the most part, limited to those costs that the food service authority is expected to cover from revenues generated from food service sales and government reimbursements. However, these costs may not reflect the full cost of meal production in the school district. For example, the SFA costs may exclude the cost of school district resources used to support SFA operations.

Conceptually, the full cost of meal production should include the current cost of **all** resources used in meal production, including those charged to the SFA budget and those charged to other budgets or donated to the SFA. These total costs include:

- **Direct Meal Production Costs.** Direct meal production costs are those directly traceable to meal production and service. They include such items as food cost, SFA food service labor costs, and other identifiable meal production costs (e.g., supplies).

- **Non-meal Production Costs.** These costs, which can be incurred at both the SFA and school district level, are not directly traceable to the production of meals in schools. At the SFA level, these costs include labor for food service administration and other SFA support activities, the cost of the facilities occupied by the SFA, storage and transportation of foods, and transportation of meals within the district. At the school district level, examples include the time spent by business managers who are often responsible for SFA as well as school district purchases; school principals, custodians and secretaries who provide administrative services that facilitate the operation of school cafeterias; and cafeteria and kitchen utility costs that are often included in school district utility bills. Other examples of school district costs include: school facilities used to store and transport inventories of food (and other SFA supplies); district facilities used to prepare and serve meals; and vehicles used to transport meals prepared at central or base kitchens to satellite and receiving kitchens. Some or all of these costs may be directly charged to the SFA and appear as line-items on the SFA financial statement or they may be included as part of an indirect cost rate; or they may be absorbed by the school district and not charged in any way to the SFA.

- **Costs of Other Resources.** Examples of other resources (which may be meal production or non-meal production costs) that do not appear in either SFA or school district budgets are: volunteers and student aides who routinely assist in the cafeteria; and depreciation of capital equipment.

The chapter that follows describes the study methodology, including the approach used to measure reimbursable meal costs, the selection of the study sample, and the data collection activities. Chapter Three presents the estimates of reported costs. Chapter Four presents the estimates of full costs. Indirect costs are discussed in Chapter Five. Chapter Six examines SFA revenues.

Chapter Two

Overview of the School Lunch and Breakfast Cost Study

This chapter provides a detailed description of the School Lunch and Breakfast Cost Study. First, the methodology used to measure meal costs is described. Next, sample selection and recruitment are discussed. The chapter concludes with a discussion of the data collection strategy.

OVERVIEW OF THE MEAL COST METHODOLOGY

The primary objective of the School Lunch and Breakfast Cost Study is to determine the average cost of producing school lunches and breakfasts, including indirect and local administrative costs. In contrast to the methods used by SFAs and in prior research studies, the methodology for this study relies on the direct measurement of costs attributable to the various SFA activities rather than the use of indirect allocation rules.[1] Exhibit 2.1 presents an overview of the study approach.

The methodology consists of four elements:

1) measuring the full cost of SFA operations;

2) distributing the reported and full cost of SFA operations to the production of lunches, the production of breakfasts, and non-meal production activities;

3) distributing a share of the cost of non-meal production activities to the production of lunches and breakfasts to obtain the full cost of producing these meals; and

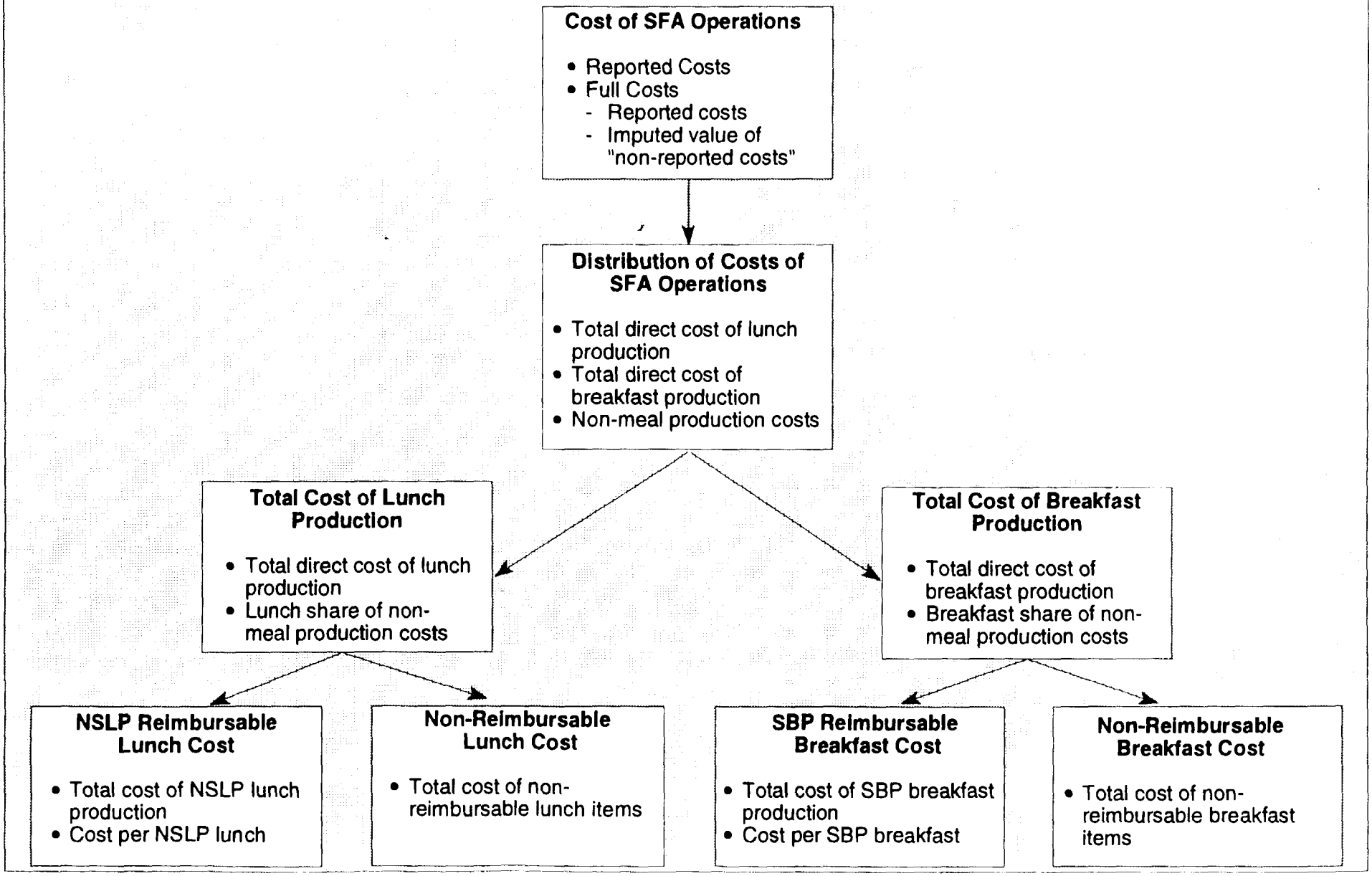
4) distributing the reported and full cost of meal production to the production of reimbursable and non-reimbursable meals.

To complete these four processes requires a review of SFA financial statements, meal production records, recipes, invoices, and other documentation. SFA and school district officials are interviewed to provide data to impute the value of school district costs that are not charged to the SFA budget. Data needed to allocate labor costs among SFA activities are obtained through a time study conducted with food service

[1]The methodology used in this study was developed and pilot tested as part of the Meal Cost Methodology Study. See Glantz, F. et al, **Child Nutrition Meal Cost Methodology Study** (U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation, 1992). The methodology measures the ***average*** cost of producing lunch and breakfast. It is not intended to measure the ***incremental*** cost of adding a breakfast program to an existing lunch program.

Exhibit 2.1

Overview of Meal Cost Methodology Framework



staff in a sample of schools. Finally, a sample of meals taken by students are observed to obtain data on the distribution of menu items sold in reimbursable and non-reimbursable meals. The relationship between these data collection activities and the four elements of the methodology are summarized in Exhibit 2.2. Each element of the methodology is discussed below.

Exhibit 2.2

Data Collection Activities by Study Component

Element of Methodology	Data Collection Activity
Measure the Full Cost of SFA Operation	• review the SFA's annual financial statement with SFA and school district officials to verify reported costs and to identify unreported costs; and • obtain information needed to impute the value of these unreported costs
Distribute the Reported and Full Costs of SFA Operations Between Lunch Production, Breakfast Production, and Non-Meal Production Activities	• review meal production records, recipes, and invoices to directly measure the cost of food used in lunch and breakfast production during a sample time period; and • conduct a time study to identify the labor costs attributable to lunch and breakfast production and non-meal production activities
Distribute a Share of Non-Meal Production Costs to Lunch and Breakfast Production	• no separate data collection; allocation of non-meal production costs based on distribution of food and labor costs.
Distribute the Reported and Full Costs of Producing Lunches and Breakfasts Between Reimbursable and Non-Reimbursable Meals	• observe a sample of meals taken by students to identify the quantity of each menu item sold that is attributable to reimbursable and non-reimbursable meals.

Measuring the Full Cost of SFA Operations

Full-cost accounting requires that the cost of **all resources** used by the SFA be identified and attributed to SFA operations. These include costs incurred by and charged to the SFA (reported costs), as well as costs incurred by the school district for activities in support of SFA operations. These latter costs may or may not be charged to the SFA. Full-cost accounting also requires that the value of in-kind contributions (e.g., donated commodities and volunteer labor) be included as a cost of SFA operations.

Similarly, full cost accounting of SFA operations requires that a portion of these school district indirect costs be assigned to SFA operations. Indirect costs are those costs that are incurred by the school district in support of SFA and other school district operations, but are not directly traceable to specific activities. The study approach measures the full cost of SFA operations including both those costs that are reported on annual financial statements and unreported costs which must be identified and measured.

The process of identifying unreported costs involves reviewing the SFA's annual expense statement with the SFA director and/or SFA business manager.[2] Where applicable, the process also involves reviewing the supporting documentation for the school district's indirect cost rate with the school district business manager. The objective of this review is to determine the inclusiveness of each line item on the expense statement--does the reported cost include all of the cost attributable to food service operations? For each line item, this review also seeks to determine if unreported or under-reported costs are included in the school district's indirect cost rate (e.g., if utilities were not included in the SFA's expense statement, this review will determine if utilities were included in the school district's indirect cost rate).

The review of SFA expense statements and school district indirect cost documentation identifies those cost elements for which costs have to be imputed. Respondents are also asked to provide (or identify sources for) the information needed to impute the costs (e.g., to impute the cost of off-budget labor costs, it is necessary to identify the off-budget staff, the amount of time they devote to food service activities, and their wage rates). Principals in a sample of schools are interviewed to identify unreported costs incurred at the school level (e.g., distributing and processing applications for school meal benefits). Exhibit 2.3 summarizes the sequence of activities used to identify and measure unreported costs.

Allocating Food Costs to Breakfast and Lunch

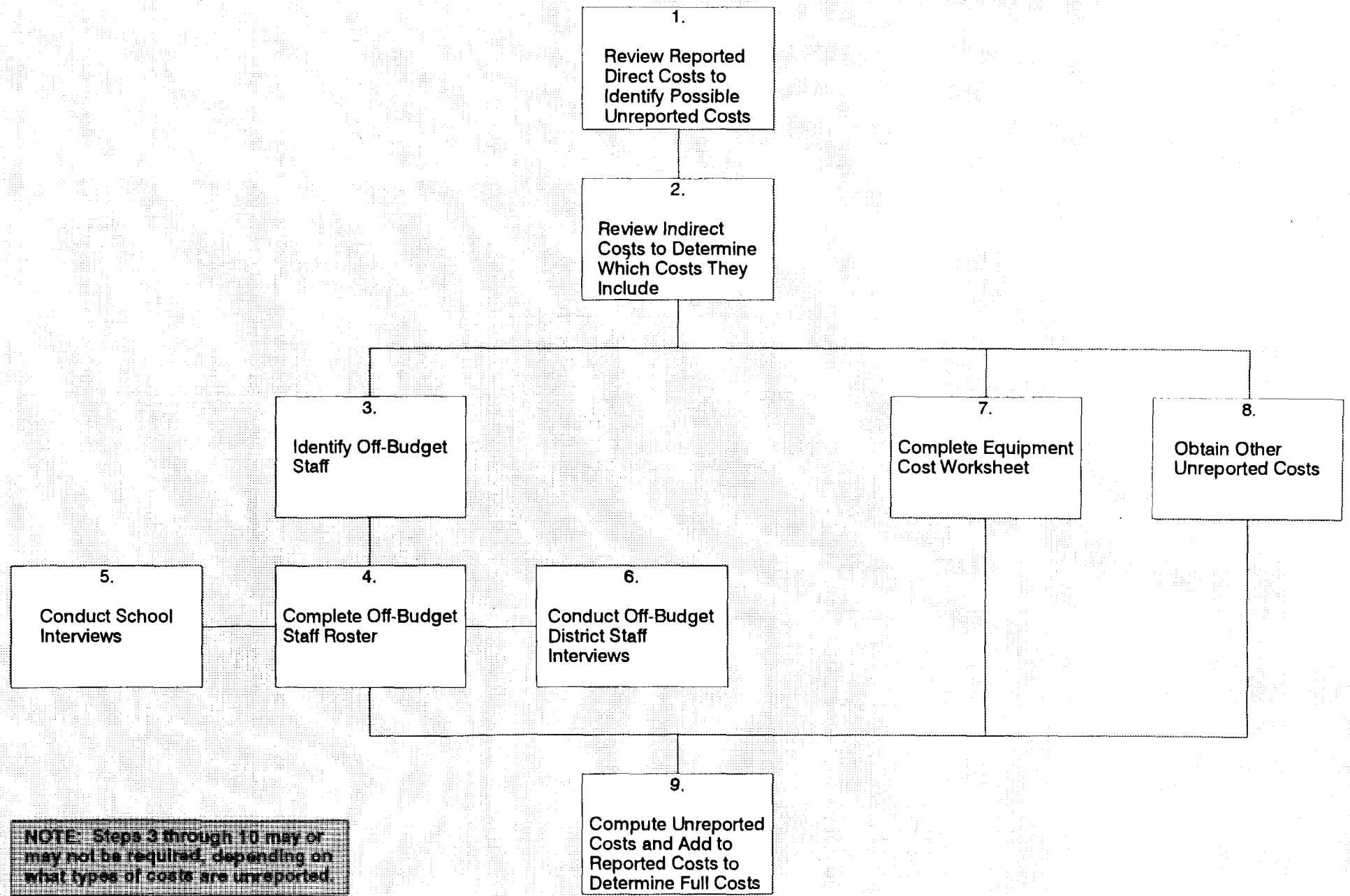
Annual food costs are distributed to breakfast, lunch and other meals using allocation percentages based on the cost of food used during a 5-day study week. The process of identifying the cost of food used in breakfast and lunch production includes the following activities:

- **Prices and Commodities.** Obtaining the average unit price paid for each ingredient (or the USDA-assigned value for donated commodities). SFAs provide master price lists for all foods acquired. These prices are matched to the ingredients used during the 5-day study week by study staff following the completion of data collection.

[2]The study focused on the costs allowable under the program regulations. While efforts were made to identify and exclude unallowable costs, the estimates of reported and full costs may nevertheless include some unallowable costs that were not identified during the review of SFA expense reports. The inclusion of unallowable costs would tend to overstate both reported and full costs.

Exhibit 2.3

Flowchart for Analysis of Unreported Costs



- **Recipe Records.** A review of recipes used in the production of each food item with the kitchen manager to determine the quantity of the ingredients used in the production of each food item. Study staff record the quantity of each ingredient used, and whether the ingredient was a USDA donated commodity on a Recipe Cost Form.

- **Menu Records.** A review of menu and production records with kitchen managers to identify **all** food items produced for breakfast and lunch during the 5-day study period. Serving size and number of servings produced, including leftovers, are recorded by study staff "meal observers" on a Menu and Production Record.[3]

- **Sampling Weights.** Applying sampling weights to the food cost estimates for each sample school to obtain district-level estimates.

Exhibit 2.4 summarizes the calculation of the allocation percentages that are used to distribute annual food costs to breakfast, lunch, and other meals.

Identifying and Allocating Labor Costs to SFA Activities

The allocation of SFA labor costs among food service activities is based on the proportion of time devoted to each activity. Two methods are used for distributing staff time and costs among the various food service activities:

- **Daily Time Records for Direct Meal Production Staff.** A *time study* is used for **kitchen staff** and other school-based food service personnel. All food service workers in a sample of schools/kitchens complete Daily Time Records for the 5-day study week. These data are combined with information obtained from an SFA salary schedule to obtain the labor costs attributable to each food service activity. Labor costs for school-based SFA staff are then aggregated to the school district level.

- **Central Staff Rosters and Off-Budget Staff Rosters.** *Professional estimates* made by SFA and school district staff are used to obtain the distribution of time across food service activities for staff not represented in the time study. Professional estimates are made for three groups: central SFA staff; central school district staff; and school staff.

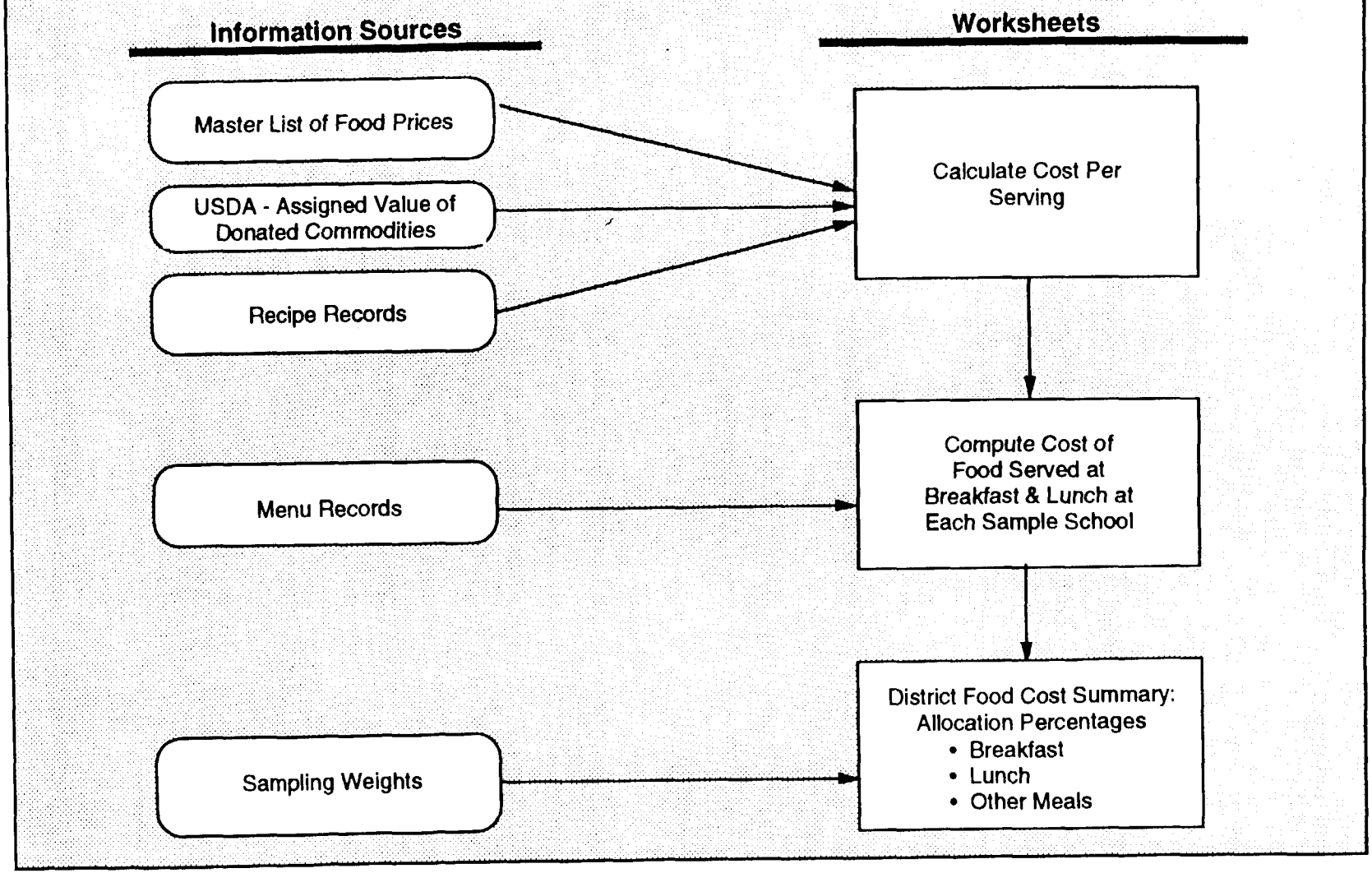
- **Sampling Weights.** Sampling weights are applied to labor cost estimates for each sample school to obtain district-level estimates of the labor cost of school-based staff.

---

[3]Copies of the study instruments are included in Appendix E with a description of how each instrument is used.

Exhibit 2.4

Calculation of Allocation Percentages Used to Distribute Annual Food Costs to Breakfast, Lunch and Other Meals



Abt Associates Inc.
School Lunch and Breakfast Cost Study

Exhibit 2.5 summarizes the procedures used to estimate the percentage of total annual labor costs attributable to each food service activity.

Allocating "Other" Costs Between Breakfast and Lunch Production

The study methodology directly measures the food and labor costs attributable to breakfast and lunch production. However, a share of direct costs (e.g., supplies, equipment, etc.) must be distributed to breakfast and lunch production to obtain the total reported cost of producing breakfasts and lunches. In the MCM methodology, such costs are distributed between breakfast and lunch in relation to the proportion total of labor and food costs used in breakfast and lunch production. In this way, meal production activities that use a greater amount of labor and food are appropriately credited with a large share of other direct costs.

Allocating Total Lunch and Breakfast Costs to Reimbursable and Non-Reimbursable Meals

The previous steps provide estimates of total annual lunch and breakfast costs. Total annual meal costs (for each type of meal) are allocated to reimbursable and non-reimbursable meals based on the proportion of food costs (for each type of meal) used to produce the food that students actually take as part of reimbursable meals.[4]

To derive these estimates, meal observers record the food items selected by a sample of students taking reimbursable meals in the sample schools. These data are combined with district records of the total number of reimbursable meals served at sample schools during the study week and the previously computed cost per serving (of each food item) to estimate the total food cost of reimbursable meals served at the sample schools. These estimates are then weighted to provide an aggregate district-level estimate of reimbursable food costs. Exhibit 2.6 summarizes the estimation of the percentage of food costs that are reimbursable.

[4]The methodology does not identify those costs that are restricted only to reimbursable meals (e.g., administrative functions related to the meal benefit application and approval process). This results in a slight overstatement of the costs attributable to non-reimbursable meals. Similarly, some high cost foods may require relatively little preparation labor and vice versa. While allocating other costs on the basis of food costs is the best practical option, it is not a perfect measure.

Exhibit 2.5
Estimating the Percentage of Labor Costs Attributable to Each Type of Meal

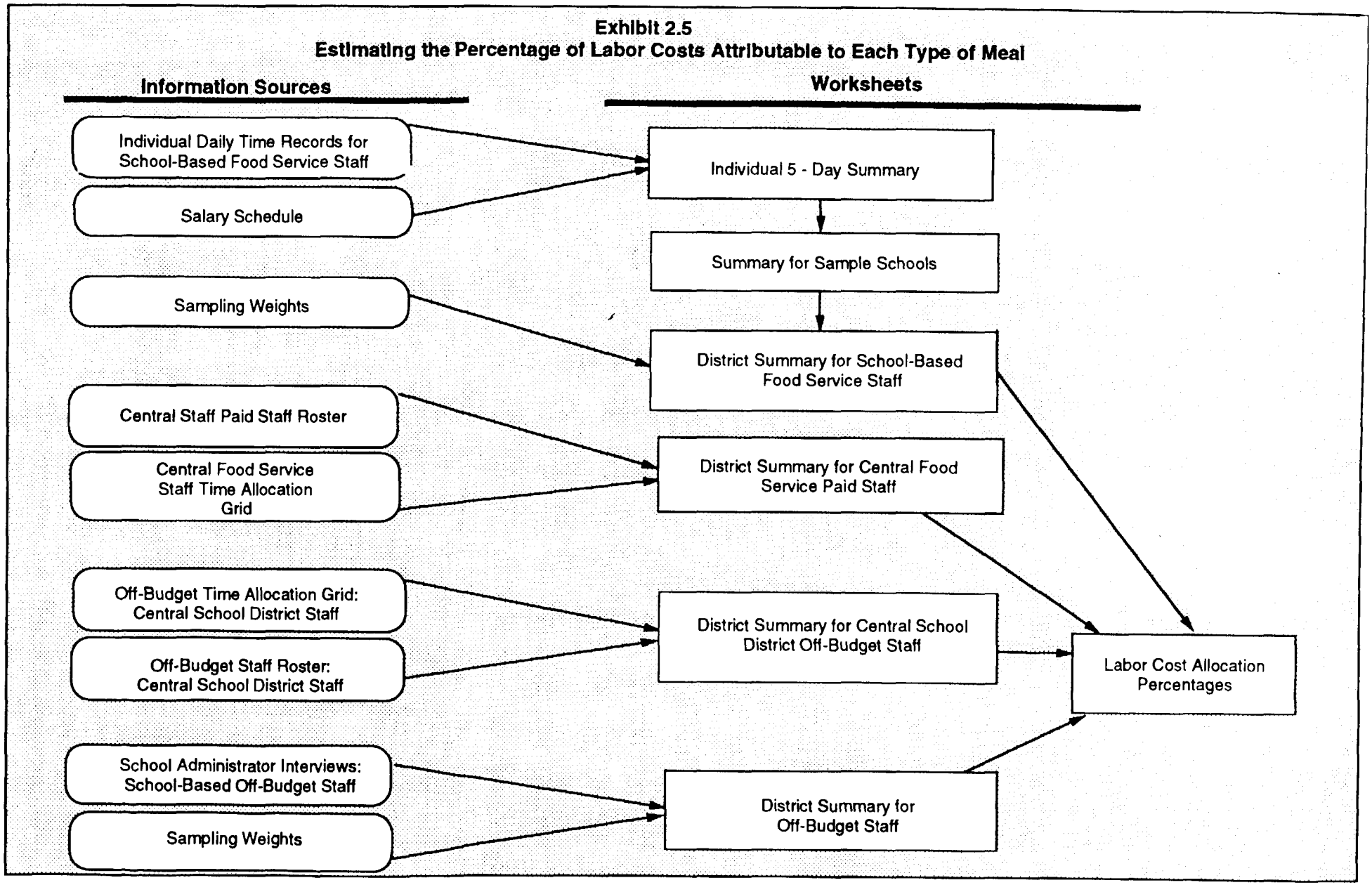
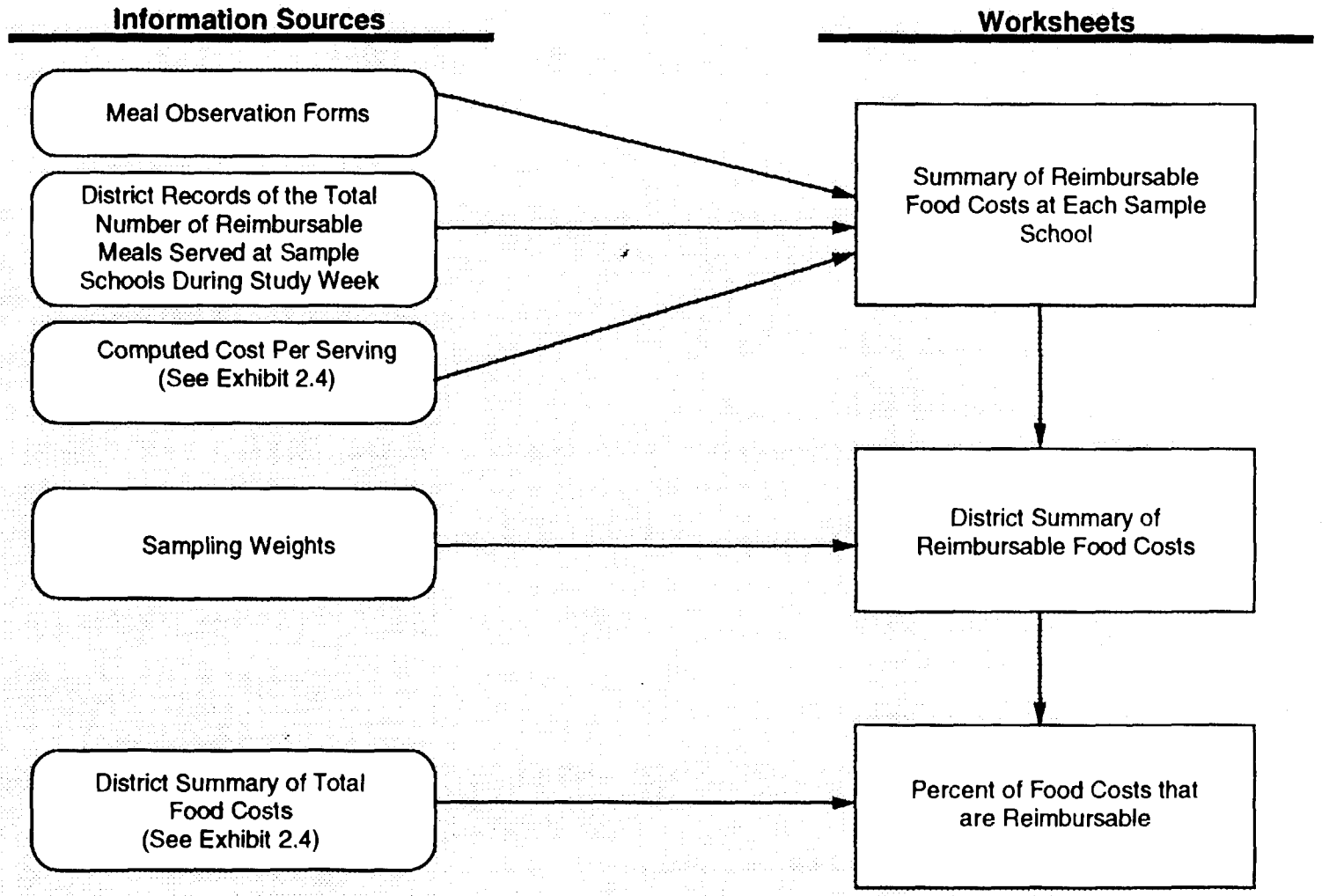


Exhibit 2.6

Estimation of the Percentage of Food Costs that are Reimbursable



Abt Associates Inc.
School Lunch and Breakfast Cost Study

SAMPLE DESIGN AND SELECTION

Sample Design

This section presents an overview of the sample design; a more detailed discussion is contained in Appendix A. The School Lunch and Breakfast Cost Study involved the collection of data from a national probability sample of school districts that participate in the NSLP. To select such a sample the study constucted a national listing of SFAs that included information on the size of the lunch and breakfast program and the type of meal production system used.

To construct this listing of SFAs, a telephone survey was conducted of a national probability sample of public school districts in the continental United States to collect information on 1) participation in the School Breakfast Program (SBP), 2) type of meal production system, and 3) total reimbursable lunches and breakfasts served in SY 1991-92. This information was then used only to draw a stratified sample of school districts from among the telephone survey respondents. Detailed meal production cost information was collected on-site for this sample of school districts to calculate national estimates of the mean cost of producing NSLP and SBP meals.

The first step in the overall study was the selection of a stratified national probability sample of 985 school districts to be included in the telephone survey. Interviews were completed with 924 districts for a response rate of 97 percent.

The sample of 924 districts responding to the telephone survey was a large enough sample to allow for the recruiting of a stratified sample of 100 districts for on-site data collection. The stratifiers were type of meal production system, and whether the district participated in the SBP. Four types of meal production systems were used in the stratification:

- **On-site kitchens only.** The SFA has only independent or on-site kitchens which prepare and serve food for the school in which the kitchen is located.

- **Base or central kitchens with satellites.** The SFA uses base kitchens which produce meals for service on-site and for delivery to satellite or receiving schools, and/or central kitchens which prepare food and transport it to satellite or receiving schools. This category does not include any independent kitchens.

- **Combination: mostly on-site kitchens.** The SFA uses a combination of base/central kitchens with satellites and on-site kitchens. In this combination system most of the schools in the SFA have on-site kitchens.

- **Combination: mostly satellite kitchens.** The SFA uses a combination of kitchens, but in this category most of the schools in the SFA have satellite (i.e., receiving) kitchens.

The desired distribution of the second-phase sample by the eight strata is shown in Exhibit 2.7.

Exhibit 2.7

Desired Distribution of the Second-Phase Sample

Production System	Sample Size of NSLP and SBP Districts	Sample Size of NSLP Only Districts	Total SFA Sample Size
Pure System Strata:			
On-site kitchen only	26	8	34
Base or central kitchens with satellites only	26	8	34
Combination system strata:			
Other combination - mostly on-site kitchens	12	4	16
Other combination - mostly satellite kitchens	12	4	16
	76	24	100

Recruiting School Districts

The 924 districts were sorted into the eight cells of the design by production system and presence of the SBP. Within each cell, a target number of districts to be recruited was established. A stratified random sample of 100 districts was selected, together with 64 backup districts to replace districts that refused or could not participate in the study. As the number of refusals increased during the recruiting process, several more backup samples were drawn, bringing the total number of districts contacted to 218. A total of 98 SFAs agreed to participate in the study.

Of the 98 SFAs that were initially included in the study sample, a total of 94 were used in the analysis.[5] Exhibits 2.8 and 2.9 show the distribution of the 94 SFAs that were used in the analysis. The final sample reflects reclassifications. Reclassification was necessary because in some instances districts had been misclassified on the basis of telephone survey data.

[5]Data collection problems in three SFAs precluded the use of the data from these SFAs in the analysis. In addition, one SFA dropped out of the study during the data collection.

Exhibit 2.8

Distribution of the Final Sample of 94 SFAs by Size and Meal Production System

Production System	SFA Enrollment			
	Less than 1,000	1,000 - 4,999	5,000 or more	Total All SFAs
On-site kitchen only	9	12	13	34
Base/Central only	1	9	13	23
Mostly on-site kitchen	0	4	18	22
Mostly satellite kitchen	2	3	10	15
Total All SFAs	12	28	54	94

Exhibit 2.9

Distribution of the Final Sample of 94 SFAs by Participation in the SBP and Meal Production System

	Participation in the SBP		
Production System	NSLP and SBP	NSLP only	Total All SFAs
On-site kitchen only	27	7	34
Base/Central only	19	4	23
Mostly on-site kitchen	18	4	22
Mostly satellite kitchen	14	1	15
Total All SFAs	78	16	94

In addition to the three stratifying variables that were used in site selection (SFA size, participation in the SBP, and type of meal production system), the percentage of SFA revenues derived from a la carte sales was used as a cross-cutting variable in the analysis. SFAs were divided into two groups—those with relatively high a la carte revenues (at least ten percent of total revenue) and those with relatively low a la carte revenues (less than ten percent of total revenues). Of the 94 SFAs used in the

analysis, 79 were able to separate a la carte revenues from other cafeteria sales (e.g., student payments for full and reduced-price meals, and adult meals). Twenty-nine of these 79 SFAs had a la carte sales which accounted for less than ten percent of total SFA revenue and in 50 SFAs a la carte sales accounted for at least ten percent of total revenues.

DATA COLLECTION

The data collection activities for the School Lunch and Breakfast Cost Study were conducted in Spring/Fall 1993. Study staff were sent to each of the 98 SFAs participating in the study and collected data from 540 schools. During these on-site visits, study staff: 1) conducted unstructured in-person interviews with SFA directors, school and kitchen personnel, and central school district personnel; 2) reviewed financial statements, menus, and meal production records, invoices, and NSLP and SBP meal count records; 3) conducted a time study for selected food service staff; and 4) observed food items selected by students at breakfast and lunch. The data collection for the study involved three phases, each of which is discussed below.

Phase 1: Spring 1993

In preparation for the on-site visits study staff conducted a brief pre-visit telephone interview with SFA directors. The questionnaires for this telephone interview were mailed to the SFA director in advance of the interview to familiarize them with the questions and to allow them to review appropriate records. The pre-visit interview obtained background information needed to plan for the on-site visits and minimize the burden on SFA and school district personnel. Similarly, to prepare for the data collection in each school, study staff conducted a brief telephone interview with kitchen managers.

Phase 2: Spring 1993

During Phase 2, study staff visited each of the 98 SFAs in the study sample. During this site visit study staff obtained the information needed to allocate the SFAs' ***reported costs*** between lunch and breakfast production and between reimbursable and non-reimbursable meals. This involved the following major activities:

- **Identified the cost of food used in breakfast and lunch production.** Study staff:

  1. Reviewed menu and meal production records with kitchen managers to identify the food items produced for breakfast and lunch during the week of the visit. Serving size and number of servings produced were recorded by study staff on a Menu Record.

2. Reviewed recipes used in the production of each food item produced with the food service manager (or kitchen manager as appropriate) to determine the quantity of each of the ingredients used in the production of each food item. Study staff recorded the quantity of each ingredient used and whether the ingredient was a USDA donated commodity on a Recipe Record.

3. Reviewed selected invoices with the SFA business manager to obtain the average unit price paid for each ingredient (or the USDA assigned value for donated commodities). Study staff recorded this information on the Recipe Record.

4. Obtained counts of the number of NSLP-lunches and SBP-breakfasts served at a representative sample of schools during the week of the visit. Study staff recorded these counts on a Meals Served by School Grid.

- **Observed a sample of students at breakfast and lunch.** Study staff recorded the food items selected by a random sample of students in each school. This permits the identification of reimbursable and non-reimbursable meals, and the estimation of the number of servings of each food item selected as part of reimbursable meals.

- **Identified the labor costs of breakfast production, lunch production, and non-meal production activities.** Study staff:

1. Obtained a list of all central SFA and school district staff whose salaries are charged to the SFA budget. Salary and work schedule information were recorded by study staff on a Central Food Service Paid Staff Roster. This list was reviewed with the SFA director to identify whose staff who work on both meal production and non-meal production activities.

2. Conducted a time study of school-based food service staff that work on meal production activities (i.e., produce/serve breakfasts and/or lunches). All food service staff in the sample schools were included in the time study. Study staff reviewed the Daily Time Record with the food service staff participating in the time study. These staff completed a Daily Time Record for a 5-day period.

3. Obtained professional estimates of the time distribution by function for those central SFA staff not included in the time study. These estimates were obtained through brief discussion with the SFA Director and/or appropriate SFA and school district staff.

Phase 3: Fall 1993

Phase 3 of the data collection focused on the unreported costs attributable to school food service operations. During Phase 3, study staff interviewed SFA and school district staff in each of the SFAs

that participated in Phase 2 of the study to identify the resources used by, but not charged to, the SFA. Information was also obtained to estimate the value of these unreported costs. The Phase 3 data were used to estimate the *full cost* of producing reimbursable lunches and breakfasts.

During the Phase 3 on-site visits, study staff conducted the following major activities:

- **Reviewed the SFA's annual financial statement with the SFA director and/or the SFA business manager.** During this review study staff discussed each of the line items included on the SFA's expense statement with the respondents. The objective of this review was to determine which cost elements had been under-reported (or not reported at all). Study staff sought to identify SFA or school district staff who could provide information regarding these under-reported costs.

- **Reviewed the school district's indirect cost allocation with the school district business manager.** During this review study staff discussed each of the cost elements that were included in the district's indirect cost pool. This review also examined school district practices for charging these costs to food service and other school district operations.

- **Identified "off-budget" staff working on SFA activities.** Through discussion with the SFA director, study staff identified school district personnel that spend some of their time working on food service activities. Study staff completed an Off-Budget Staff Roster (which is identical to the Central Food Service Paid Staff Roster). Professional estimates of time spent on SFA activities were recorded by study staff on an Off-Budget Time Allocation Form.

- **Completed worksheets necessary to impute unreported costs.**

Study Instrumentation

A total of 21 data collection instruments were used in this study. Exhibit 2.10 summarizes the measures, the data collection method, and the respondents. Brief descriptions and copies of all instruments used are contained in Appendix F.

Exhibit 2.10

Data Collection Instruments, Methods and Respondents

Instrument	Method of data collection	Respondent(s)
Phase 1		
1. Previsit Questionnaire	Pre-mailed and telephone follow-up	SFA Director
2. School Information Summary	Telephone interview	Kitchen Manager
3. State Child Nutrition (CN) Director Questionnaire	Pre-mailed and telephone follow-up	State CN Director
4. State Distributing Agency (SDA) Questionnaire	Pre-mailed and telephone follow-up	SDA Director
Phase 2		
5. Menu Record	Record review and discussion	Kitchen Manager
6. Recipe Record	Record review and discussion	Kitchen Manager and SFA Business Manager
7. Cost per Serving Worksheet	Invoice review	Kitchen Manager and/or Business Manager
8. Meal Observation Form	Observation	None
9. Meal Served by School Grid	Record review and interview	SFA Director
10. Daily Time Record	Time-ladder	Kitchen workers
11. School Food Service Staff Roster	In-person interview	SFA Director
12. Central Food Service Paid Staff Roster	In-person interview	SFA Director
13. Central Paid Staff Time Allocation Grid	In-person interview	SFA Director and other managers, if appropriate
Phase 3		
14. Food Service Expense Statement and Supplement	Record review and in-person discussion	SFA Director and/or Business Manager
15. Food Service Revenue Statement Review	Record review and in-person discussion	SFA Director and/or Business Manager
16. Food Service Off-Budget Staff Roster	In-person interview	Individuals identified by the SFA Director
17. Off-Budget Staff Time Allocation Grid	In-person interview	Individuals identified by the SFA Director
18. School Administrator Interview Guide	In-person interview	School Principal
19. School District Indirect Cost Review Guide	Pre-mailed and in-person discussion	School District Business Manager
20. State Education Agency Finance Officer Questionnaire	Pre-mailed and telephone follow-up	SFA Finance Officer
Worksheets for Study Staff		
21. Equipment Cost Worksheet	Worksheet	None

Abt Associates Inc.
School Lunch and Breakfast Cost Study

Chapter Three

Estimates of Reported Costs

This chapter presents an analysis of SFAs' **reported** costs for SY 1992-93. The research questions addressed in this chapter include:

- What is the national average reported cost of producing a reimbursable lunch?
- What is the national average reported cost of producing a reimbursable breakfast?
- What is the composition of reported reimbursable meal costs, i.e., what proportion of reported reimbursable meal costs are attributable to food costs? to labor costs? to other costs?
- What proportion of reported costs are attributable to food service administration?
- How do reported reimbursable meal production costs vary by the type of meal production/distribution system used by SFAs?

The analysis focuses on the costs of producing reimbursable meals and includes only those costs that were charged to SFA budgets.[1] From the SFAs' perspective, reported costs ***are*** the costs of running the NSLP and SBP. These are the costs that they are expected to cover. However, as noted earlier, many SFAs use school district resources for which they are not charged. The magnitude and composition of these unreported costs is examined in Chapter Four.

In considering the cost estimates discussed in this chapter, readers should recognize that reported costs represent only part of the cost of producing reimbursable meals. The key findings with regard to reported food service costs include:

- The national median reported cost of producing a reimbursable lunch in SY 1992-93 was $1.63.
- The national median reported cost of producing a reimbursable breakfast in SY 1992-93 was $1.05.

[1]Reported cost may exceed actual cash outlays. For example, some SFAs report indirect costs, but do not actually transfer the funds to the school district's general fund (see Chapter Five). Similarly, depreciation expenses do not involve cash outlays.

- The Federal subsidy for free lunches appears to be sufficient to cover the reported cost of producing reimbursable lunches. In three out of four SFAs (77 percent), the reported cost of producing a reimbursable lunch was less than the total Federal subsidy for a free lunch. Similarly, 77 percent of all reimbursable lunches were produced at a reported cost that was less than the total Federal subsidy for a free lunch.

- The Federal subsidy for free breakfasts does not appear to be sufficient to cover the cost of producing reimbursable breakfasts. The higher severe need reimbursement rate was sufficient to cover reported costs in 60 percent of SFAs, while the regular reimbursement rate for a free breakfast was sufficient to cover reported costs in only 34 percent of SFAs. Fifty-nine percent of all reimbursable breakfasts were produced at a reported cost that was less than the severe need rate (and only 33 percent at a cost that was less than the regular Federal subsidy for a free breakfast).

- On average, food costs accounted for 48 percent of SFAs' total reported costs; labor costs accounted for 44 percent of reported costs; and other costs accounted for the remaining 8 percent of reported costs.

- Administrative labor costs accounted for an average of 8 percent of the average SFA's total reported cost.[2]

Again, it is important to caution the reader that reported costs do not account for all of the costs of producing reimbursable meals.

REPORTED COSTS OF PRODUCING REIMBURSABLE MEALS

This section presents the national estimates of reported costs for reimbursable meals and provides estimates for several subgroups, including districts that do and do not participate in the SBP; by SFA size; and by the proportion of SFA revenues from a la carte sales.[3]

Cost per Reimbursable Lunch

The distribution of SFAs by the reported cost of producing a reimbursable lunch in SY 1992-93 is shown in Appendix E (Exhibit E.1). Reported costs per reimbursable lunch ranged from $0.93 to $2.50. Exhibit 3.1 summarizes the national mean reported cost of producing reimbursable lunches using both SFAs and NSLP meals as the unit of analysis. Across all SFAs, the mean reported cost is $1.64 to

---

[2]In this study administrative activities were defined quite broadly, and were not limited to those activities that are associated with program regulations (e.g., application, verification, meal counting, etc.). All non-meal production activities were included in "administration" for purposes of this study.

[3]Cost estimates by type of meal production system are discussed in Appendix C.

Exhibit 3.1

Total Reported Cost per Reimbursable Lunch

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$1.64	$1.63	.34	$1.69	$1.66	.30	12,937	94
Participation in SBP								
NSLP and SBP	1.63	1.66	.34	1.69	1.66	.29	8,566	78
NSLP only	1.66	1.63	.34	1.69	1.63	.39	4,371	16
SFA Size								
Small (1-999)	1.67	1.78	.34	1.69	1.78	.36	6,327	12
Medium (1,000-4,999)	1.59	1.62	.36	1.56	1.56	.33	4,537	28
Large (5,000+)	1.64	1.58	.31	1.73	1.67	.27	2,073	54
A la Carte Revenues[1]								
< 10% of Total Revenue	1.61	1.54	.31	1.80	1.70	.34	3,673	29
≥ 10% of Total Revenue	1.57	1.61	.28	1.63	1.65	.24	6,311	50

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

produce a reimbursable lunch. None of the differences among the subgroups of SFAs examined in Exhibit 3.1 is significant at the .05 level of confidence.[4]

When the unit of analysis is the NSLP meal, the mean reported cost of producing a reimbursable lunch in SY 1992-93 was $1.69.[5] This reflects the large number of reimbursable lunches served in the small

[4]Reported cost per reimbursable lunch and breakfast by meal production system is presented in Appendix E, Exhibit E.3.

[5]Calculated as the mean cost per reimbursable lunch across all reimbursable lunches served in the Nation, i.e., the NSLP meal is the unit of analysis. This analysis gives equal weight to each reimbursable lunch, and since most reimbursable lunches are produced in large SFAs, the results are influenced by the costs incurred in large SFAs.

number of large SFAs where reported costs are high. Approximately 16 percent of SFAs have enrollments over 5,000. Nearly 60 percent of the reimbursable lunches served in SY 1992-93 were served in these large school districts.

Participation in the SBP and the percent SFA revenues derived from a la carte sales do not appear to significantly affect the reported cost of producing a reimbursable lunch.

As noted in Chapter One, the Federal subsidy for free lunches in SY 1992-93 was about $1.84 ($1.70 in cash reimbursements plus $0.14 in entitlement commodities). This was considerably more than the mean reported cost of producing a lunch ($1.69). The mean reported cost of producing a reimbursable lunch was less than the total subsidy for a free lunch in three out of four SFAs (77 percent). Similarly, 77 percent of all reimbursable lunches served in SY 1992-93 were produced at a reported cost that was less than the total subsidy for a free lunch.

Cost per Reimbursable Breakfast

The distribution of SFAs by the reported cost per reimbursable breakfast is presented in Appendix E (Exhibit E.2). In SY 1992-93, reported costs per reimbursable breakfast ranged from $0.58 to $2.93, with a median cost of $1.05 and a mean cost of $1.27 (Exhibit 3.2). There was considerably more variation among SFAs in reported breakfast costs than in reported lunch costs. The coefficient of variation (the standard deviation divided by the mean) for breakfast was 0.47 compared to 0.21 for lunch. The relatively greater variability in the cost per reimbursable breakfast may reflect the variability in unit reported labor costs for breakfast. That is, total breakfast labor costs in a school may be viewed as relatively fixed because of the small size of the breakfast program. Thus, as the number of breakfasts served increases, the reported labor costs per breakfast may be expected to decrease.

When the unit of analysis is the SBP meal, the mean reported cost per reimbursable breakfast was $1.11. Within each size class, the mean reported cost per reimbursable breakfast is lower when the unit of analysis is the SBP meal. This may reflect the apparent economies of scale in breakfast production—schools serving large numbers of reimbursable breakfasts tend to have lower unit reported costs.

While the reported cost per reimbursable breakfast appears to be higher in SFAs that derived at least ten percent of total SFA revenue from a la carte sales, this difference is not statistically significant.

The regular reimbursement rate for free breakfasts in SY 1992-93 was $0.95, with a "severe need" rate of $1.12. In contrast to lunch costs, where the reported cost of producing reimbursable lunches tended

Exhibit 3.2

Total Reported Cost per Reimbursable Breakfast

	Unit of Analysis is SFA[1]			Unit of Analysis is SBP Breakfast			SFA Sample Size	
	Mean	**Median**	**STD**	**Mean**	**Median**	**STD**	**Weighted**	**Unweighted**
Total SFAs	$1.27	$1.05	.60	$1.11	$1.05	.29	8,516	78
SFA Size								
Small (1-999)	1.08	1.05	.20	1.06	1.03	.18	4,693	10
Medium (1,000-4,999)	1.65	1.15	.84	1.12	1.03	.42	2,119	17
Large (5,000 +)	1.34	1.09	.71	1.13	1.10	.28	1,704	51
A la Carte Revenues[2]								
< 10% of Total Revenue	1.06	0.97	.29	1.01	0.92	.27	1,984	25
≥ 10% of Total Revenue	1.39	1.15	.68	1.16	1.17	.28	4,375	40

[1]The difference in reported costs between small and medium-size SFAs is significant at the .05 level of confidence.

[2]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

to be less than the Federal subsidy for free lunches, in most SFAs, the reported cost of producing reimbursable breakfasts exceeded the reimbursement rates. In 66 percent of SFAs, reported costs exceeded the regular reimbursement rate for free breakfasts, and in 40 percent of SFAs, reported costs exceeded the higher severe need reimbursement rate. Even when the unit of analysis is the SBP meal, 67 percent of all breakfasts served in SY 1992-93 were produced at a reported cost that exceeded the regular reimbursement rate for a free breakfast (41 percent were produced at a reported cost that exceeded the higher severe need rate).[6] As noted above, reported costs do not include all of the costs of producing reimbursable meals. On a full cost basis, the proportion of SFAs for which costs exceed the reimbursement rate are even higher (see Chapter Four).

[6]Program administrative data show that in FY 1993, 65 percent of the free breakfasts were reimbursed at the severe need rate and about 56 percent of all breakfasts were severe need.

COMPOSITION OF REPORTED COSTS

As one would expect, food and labor costs accounted for the vast majority (92 percent) of the average SFA's reported costs (Exhibit 3.3). Food costs (including the assigned value of donated commodities) accounted for just under one-half (48 percent) of reported costs, while labor costs accounted for 44 percent of reported costs. All other costs, including supplies, contract services, capital expenditures, indirect charges by the school district, etc., represented only 8 percent of the average SFA's reported costs.[7]

Proportion of Food Costs Attributable to Donated Commodities

The value of USDA donated commodities accounts for a significant proportion of the total reported cost of food used by SFAs. In SY 1992-93 commodities (including bonus commodities) accounted for 17 percent of the total cost of food used by the average SFA; in 70 percent of all SFAs donated commodities accounted for ***at least*** 15 percent of total food costs (Appendix E, Exhibit E.5). It should be noted that SFAs may use donated commodities for non-reimbursable as well as reimbursable meals.

Proportion of Reported Costs that is Reimbursable

As discussed above, school meal production involves the preparation and service of a la carte items, adult meals, and other food items in addition to the production of reimbursable meals. As there is no separate accounting of the resources used in the production of non-reimbursable meals, the allocation of each SFA's total reported breakfast and lunch costs to reimbursable and non-reimbursable meals was made on the basis of the percentage of breakfast and lunch food costs that are reimbursable. The distribution of SFAs by the percentage of reported costs attributable to the production of reimbursable meals is presented in Appendix E, Exhibit E.6. On average, 89 percent of breakfast costs are attributable to reimbursable breakfasts, while 77 percent of lunch costs are attributable to reimbursable lunches.

There is also very little variation among SFAs in the proportion of breakfast costs that are reimbursable. In one-half of SFAs, reimbursable breakfasts accounted for at least 90 percent of breakfast costs; in nearly all SFAs (95 percent) reimbursable breakfasts accounted for at least 80 percent of breakfast costs. This reflects the fact that, for the most part, the breakfast program in schools consists of reimbursable meals being served to children approved for free and reduced price meals.

---

[7]The composition of reported costs by meal production system is presented in Appendix E, Exhibit E.4.

Exhibit 3.3

Composition of Food Service Reported Costs

	Percent of SFA Reported Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total Sample	48.3%	45.5%	11.1%	43.8%	45.9%	11.9%	7.9%	7.0%	5.0%	12,937	94
Participation in SBP											
NSLP and SBP	50.4	48.8	12.0	41.8	43.7	12.6	7.8	7.0	4.9	8,566	78
NSLP only	44.2	44.2	7.7	47.7	50.7	9.5	8.2	6.6	5.2	4,371	16
SFA Size											
Small (1-999)	52.9	49.4	12.9	40.7	45.9	14.3	6.4	6.7	3.4	6,327	12
Medium (1,000-4,999)	44.6	45.5	6.3	46.4	45.7	8.9	9.1	7.0	5.8	4,537	28
Large (5,000 +)	42.2	39.6	6.8	47.8	49.2	6.1	10.0	11.0	5.7	2,073	54
A la Carte Revenues[1]											
< 10% of Total Revenues	45.4	45.0	4.9	46.5	45.9	8.1	8.1	5.7	5.5	3,673	29
≥ 10% of Total Revenues	47.3	47.5	7.4	45.3	43.6	6.5	7.4	6.7	5.5	6,311	50

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

While, on average, the sale of non-reimbursable meals (particularly a la carte food items) is considerably greater at lunch than at breakfast, there is also more variation among SFAs in the relative magnitude of a la carte and adult meals (Appendix E, Exhibit E.6).

Cost Components of Reimbursable Meals

Reimbursable Lunch Costs. Exhibit 3.4 presents the cost components of reimbursable lunches.[8] For the average SFA, reported food costs per reimbursable lunch were $0.79 in SY 1992-93, with mean reported labor costs of $0.71, and other costs averaging $0.13. There was relatively little variation among SFAs in food costs per reimbursable lunch--in almost half of all SFAs (45 percent) food costs per reimbursable lunch were between $0.70 and $0.90 (Appendix E, Exhibit E.7). Similarly, there was relatively little variation among SFAs in reported labor costs per reimbursable lunch, with 43 percent of SFAs reporting labor costs per reimbursable lunch between $0.60 and $0.80.

Exhibit 3.4

Reported Cost Components of Reimbursable Lunches

Unit of Analysis	Cost Component									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
SFA	$0.79	$0.77	0.25	$0.71	$0.70	0.27	$0.13	$0.12	0.09	12,937	94
Meal	$0.72	$0.70	0.14	$0.79	$0.77	0.22	$0.19	$0.18	0.10	12,937	94

Mean food costs per reimbursable lunch are lower using the meal as the unit of analysis ($0.72 vs. $0.79), perhaps reflecting the greater buying power of the large SFAs that serve large numbers of meals. However, it is interesting to note that mean labor costs per reimbursable lunch are higher using the meal as the unit of analysis.

[8]Detailed tables by type of SFA are presented in Appendix E, Exhibits E.9 and E.10.

Reimbursable Breakfast Costs. Exhibit 3.5 presents summary of the cost components of reimbursable breakfasts.[9] For the average SFA, reported food costs per reimbursable breakfast were $0.56 in SY 1992-93, with mean reported labor costs of $0.62, and other costs averaging $0.10. Labor costs per reimbursable breakfast are considerably more variable than food costs--the coefficient of variation for breakfast labor costs is 0.80 compared to 0.31 for food costs. It is interesting to note that there is considerably more variability in labor costs for breakfast than for lunch (Appendix E, Exhibit E.8). This may reflect the relative differences in the size of breakfast and lunch programs. As noted above, at most schools the breakfast program is quite small with relatively fixed labor costs. Reported labor costs per breakfast may be expected to decrease as the number of breakfasts served increases.

Exhibit 3.5

Reported Cost Components of Reimbursable Breakfasts

Unit of Analysis	Cost Component									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
SFA	$0.56	$0.55	0.17	$0.62	$0.49	0.51	$0.10	$0.09	0.07	8,516	78
Meal	$0.49	$0.48	0.12	$0.51	$0.48	0.23	$0.12	$0.11	0.06	8,516	78

The effects of potential economies of scale in breakfast production may also be seen in the mean labor cost per meal. The mean labor cost per breakfast is considerably lower when the reimbursable breakfast rather than SFA is used as the unit of analysis ($0.51 vs. $0.62), reflecting the lower breakfast labor costs per meal in SFAs serving large numbers of reimbursable breakfasts.

ADMINISTRATIVE COSTS

Food service administrative costs include the cost of performing administrative activities in support of food service operations, e.g., administrative tasks performed by central food service staff, school-based food service staff (e.g., kitchen managers), central school district personnel, and school administrators

[9]Detailed tables by type of SFA are presented in Appendix E, Exhibit E.11 and E.12.

(e.g., principals). Reported administrative costs include only those costs that are charged to the food service budget. In addition to food service administrative labor costs, it also includes school district (i.e., non-food service) personnel that provide support to food service when the school district charges food service directly for these services.[10]

This study has broadly defined food service administration to include regular administrative activities such as planning, budgeting and management for the food service program, and other non-production activities such as maintenance of food service equipment. Exhibit 3.6 examines administrative labor costs in relation to total SFA reported labor costs. For the average SFA, administrative labor accounted for 17 percent of total reported labor costs. As one might expect, there was a good deal of variation among SFAs in the proportion of reported labor costs devoted to administration. At one extreme, 31 percent of SFAs devoted less than 10 percent of reported labor to administrative activities, while at the other extreme 15 percent of SFAs devoted at least 30 percent of reported labor to administration (Appendix E, Exhibit E.13). Some of this variation no doubt reflects differences among SFAs in what is, and what is not, charged to the food service budget. For example, in some school districts, the food service director is charged to the school district budget rather than the food service budget. In such school districts, ***reported*** administrative labor costs would account for a relatively small proportion of total reported SFA labor costs.

Exhibit 3.7 examines reported administrative labor costs in relation to total reported costs. Administrative labor accounts for a relatively small proportion of total reported costs. For the average SFA, reported administrative labor costs accounted for only eight percent of total reported costs in SY 1992-93. In nine out of ten SFAs (89 percent), administrative labor accounted for less than 15 percent of total reported costs (Appendix E, Exhibit E.14). As one would expect, administrative labor costs were relatively higher in SFAs that participated in both the NSLP and SBP than in SFAs that only participated in the NSLP. Similarly, administrative costs were relatively higher in large school districts (enrollment $\geq$ 5,000) than in small districts (enrollment $\leq$ 1,000).[11]

---

[10]As discussed in Chapter Five, only four percent of school districts charge food service directly for support services provided by school district personnel. These costs may be charged to SFA budgets as part of indirect costs. In such cases they would not be included in administrative costs.

[11]Reported administrative costs by meal production system is presented in Appendix E, Exhibit E.15.

Exhibit 3.6

Administrative Labor Costs as a Percent of Total Reported Labor Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	**Median**	**STD**	**Mean**	**Median**	**STD**	**Weighted**	**Unweighted**
Total	17.4%	14.8%	10.4	24.0%	23.4%	10.4	12,937	94
Participation in SBP								
NSLP and SBP	18.9	18.1	10.8	25.1	24.1	9.9	8,566	78
NSLP only	14.6	10.9	9.1	14.5	11.7	9.9	4,371	16
SFA Size								
Small (1-999)	17.6	13.6	12.0	21.8	28.3	11.7	6,327	12
Medium (1,000-4,999)	16.7	14.1	8.8	19.0	18.1	9.5	4,537	28
Large (5,000+)	18.7	17.6	8.3	25.6	24.1	10.0	2,073	54
A la Carte Revenues[1]								
< 10% of Total Revenues	17.2	10.9	11.1	23.9	23.9	10.2	3,673	29
≥ 10% of Total Revenues	17.5	14.1	8.5	21.2	19.6	8.4	6,311	50

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit 3.7

Administrative Labor Costs as a Percent of Total Reported Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	**Median**	**STD**	**Mean**	**Median**	**STD**	**Weighted**	**Unweighted**
Total	7.9%	7.1%	4.8	11.0%	10.4%	4.9	12,937	94
Participation in SBP								
NSLP and SBP	8.3	8.3	4.7	11.4	10.6	4.6	8,566	78
NSLP only	6.9	5.8	4.9	7.1	5.8	5.4	4,371	16
SFA Size								
Small (1-999)	7.6	5.8	5.2	9.4	11.1	5.1	6,327	12
Medium (1,000-4,999)	7.8	6.5	4.6	8.3	8.0	4.1	4,537	28
Large (5,000+)	8.7	8.9	3.4	11.9	11.1	4.7	2,073	54
A la Carte Revenues[1]								
< 10% of Total Revenues	7.7	6.2	4.7	10.4	9.7	4.6	3,673	29
≥ 10% of Total Revenues	7.9	7.1	4.1	10.0	10.4	3.9	6,311	50

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Chapter Four

Estimates of Full Costs

As discussed in Chapter One, SFAs' reported costs include only those costs that SFAs are expected to cover from revenues generated from food service sales and government reimbursements. However, reported costs often do not reflect the cost of all resources attributable to food service operations. Nearly all school districts incur some costs in support of food service operations that are not charged to the SFA budget.

This chapter presents an analysis of SFAs' **full costs** for SY 1992-93. The research questions addressed in this chapter, similar to those addressed in Chapter Three, include:

- What is the magnitude and composition of unreported costs?
- What is the national average **full cost** of producing a reimbursable lunch?
- What is the national average **full cost** of producing a reimbursable breakfast?
- What is the composition of **full costs** for reimbursable meals, i.e., what proportion is attributable to food costs? to labor costs? to other costs?
- What proportion of **full costs** are attributable to food service administration?
- How do **full costs** for reimbursable meals vary by the type of meal production/distribution system used by SFAs?

The key findings with regard to the full cost of food service operations include:

- Unreported costs accounted for an average of 19 percent of the full cost of food service operations in SY 1992-93.
- Three line items--labor (44%), "unreported" indirect costs (27%), and equipment depreciation (16%)--accounted for an average of nearly 90 percent of unreported costs in SY 1992-93.
- The national median full cost of producing a reimbursable lunch in SY 1992-93 was $1.88. This compares with a median reported cost of $1.63. Unreported costs accounted for 13 percent of the full cost of a reimbursable lunch.
- The national median full cost of producing a reimbursable breakfast in SY 1992-93 was $1.38. This compares with a median reported cost of $1.05. Unreported costs accounted for 24 percent of the full cost of a reimbursable breakfast.

- The Federal subsidy for free lunches appears to be comparable to the full cost of producing reimbursable lunches. In 39 percent of SFAs, the full cost of producing a reimbursable lunch was less than the total Federal subsidy for a free lunch. Approximately 46 percent of all reimbursable lunches were produced at a cost that was less than the total Federal subsidy for a free lunch.

- The Federal subsidy for free breakfasts is not sufficient to cover the cost of producing reimbursable breakfasts. The regular reimbursement rate for a free breakfast was sufficient to cover full costs in less than one out of ten SFAs (7%), and the higher severe need reimbursement rate was sufficient to cover full costs in only one out of five SFAs (18%). Only 11 percent of all reimbursable breakfasts were produced at a full cost that was less than the Federal subsidy for a free breakfast, and 39 percent at a full cost that was less than the severe need rate.

- On a full cost basis, food costs accounted for an average of 38 percent of food service costs; labor costs accounted for 46 percent of food service costs; and other costs accounted for the remaining 16 percent of food service costs.

- Administrative labor costs accounted for 14 percent of the average SFA's full cost.

MAGNITUDE AND COMPOSITION OF UNREPORTED COSTS

Magnitude of Unreported Costs

Exhibit 4.1 examines the magnitude of unreported costs in relation to the full cost of food service operations.[1] On average, unreported costs accounted for 19 percent of full costs in SY 1992-93. In more than nine out of ten SFAs (94%), unreported costs accounted for less than 30 percent of full costs (Appendix E, Exhibit E.16).[2] It should be noted that not all unreported costs are attributable to reimbursable meals. As one would expect, unreported costs were higher in small SFAs. Among small SFAs unreported costs accounted for an average of 24 percent of full costs, compared to an average of approximately 14 percent in medium and large SFAs. As discussed below, small SFAs are more likely to rely on school district personnel for administrative support of food service operations. Since SFAs are rarely charged (either directly or indirectly) for such support from school district personnel, small SFAs are likely to have relatively higher unreported labor costs than medium and large SFAs.[3]

---

[1]Total unreported costs in relation to full cost by meal production system is presented in Appendix E, Exhibit E.17.

[2]Components of unreported costs to full costs by size and type of production system is presented in Exhibits E.18-E.21.

[3]Since school administrative staff salaries are higher than food service staff salaries, on a full cost basis food service activities performed by school administrative staff will cost more than if performed by food service staff.

Exhibit 4.1

Total Unreported Costs as a Percent of Full Costs

	Unreported Costs as a Percent of Full Costs			SFA Sample Size	
	Mean	**Median**	**STD**	**Weighted**	**Unweighted**
Total	18.6%	17.1%	11.7%	12,934	93
SFA Size					
Small (1-999)	23.6	21.4	13.6	6,327	12
Medium (1,000-4,999)	13.3	12.4	6.2	4,537	28
Large (5,000+)	15.0	13.1	7.3	2,070	53

Composition of Unreported Costs

Exhibit 4.2 presents the distribution of unreported costs by line item. The four largest categories of unreported costs are labor (which includes salaries and fringe benefits), indirect costs, equipment depreciation, and utilities. Unreported labor represented 44 percent of total unreported costs, unreported indirect costs represented 27 percent, equipment depreciation represented 16 percent and unreported utilities represented 11 percent. Other unreported costs -- supplies and other direct costs -- represented less than two percent of total unreported costs. The discussion below examines each of the four major categories of unreported costs.

Unreported Labor Costs. As noted above, school district personnel often provide support for food service activities. This support is almost always administrative support (school district personnel are rarely involved in food production activities). In some cases, SFAs are charged directly for the time that school district personnel devote to food service activities; in other cases, the cost of this labor is included in the school district's indirect cost rate; while in other cases, these costs are absorbed by the school district (i.e., not charged to the SFA budget). Unreported labor costs include personnel that are not

Exhibit 4.2

Distribution of Unreported Costs by Line Item to Total Unreported Costs

Item	Mean	Median	STD
Labor	43.9%	38.2%	26.9%
Food	0.0	0.0	0.0
Supplies	0.1	0.0	1.2
Utilities	11.3	4.1	13.2
Equipment Depreciation	16.3	13.6	15.6
Other Direct Costs	1.3	0.0	2.4
Indirect Costs	27.1	24.3	23.5
Grand Total	100.0%		
Unweighted N = 93. Weighted N = 12,934.			

Columns may not sum to 100.0% due to rounding.

charged directly or indirectly to the food service budget.[4] Unreported labor includes both school district central staff and school-based personnel (e.g., principals, secretaries, etc.) that spend some portion of their time working on food service activities. SFA directors identified school district central staff that provided support for food service and estimated the amount of time that each person spent on food service activities. Similarly, school principals identified and estimated the amount of time that school personnel spent on food service activities. These time-use estimates were combined with salary data to estimate unreported labor costs.

Exhibit 4.3 examines unreported labor costs as a percentage of total unreported costs. Unreported labor represented 44 percent of total unreported costs in SY 1992-1993. For one out of four SFAs (24%), unreported labor represented less than 20 percent of total unreported costs (Appendix E, Exhibit E.22). At the other extreme, unreported labor accounted for at least 70 percent of total unreported costs in one-quarter (24%) of all SFAs. Unreported labor was a larger component of total unreported costs for large

[4]School districts may or may not charge indirect costs to the SFA budget. In cases where a school district does not charge food service for indirect costs, school district personnel that are included in the district's indirect cost rate are included in "uncharged indirect costs" rather than unreported labor costs.

Exhibit 4.3

Unreported Labor[1] as a Percent of Total Unreported Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	43.9%	38.2%	26.9%	12,934	93
SFA Size					
Small (1-999)	40.6	34.3	23.1	6,327	12
Medium (1,000-4,999)	40.8	42.0	27.1	4,537	28
Large (5,000+)	60.6	63.1	30.9	2,070	53

[1]Labor represents both salary and fringe benefit costs.

SFAs than for small or medium-size SFAs.[5] This results not from the use of relatively more unreported labor, but rather because in large SFAs other cost elements (such as indirect costs and equipment depreciation) are more likely to be reported than in small SFAs.

Exhibit 4.4 examines unreported labor costs as a percentage of total labor costs. In three out of four SFAs (74%), unreported labor represented less than 20 percent of total labor costs (Appendix E, Exhibit E.24). However, for five percent of SFAs, unreported labor accounted for at least 40 percent of total labor costs. SFAs where unreported labor accounts for a relatively high proportion of total labor costs tend to be small SFAs where food service labor is heavily subsidized by the school district. In general, unreported labor was a higher proportion of total labor for small SFAs than for medium-size or large SFAs, indicating that small SFAs rely more heavily on the school district for support services (for which they are not charged) than larger SFAs.[6]

[5]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.23.

[6]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.25.

Exhibit 4.4

Unreported Labor as a Percent of Total Labor

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	18.4%	14.1%	19.7%	12,934	93
SFA Size					
Small (1-999)	24.2	19.3	25.3	6,327	12
Medium (1,000-4,999)	11.1	11.2	7.7	4,537	28
Large (5,000+)	16.6	13.4	10.4	2,070	53

Exhibit 4.5 examines unreported school-based labor as a percent of total unreported labor. As mentioned above, unreported labor consists of personnel at the school district level and personnel at the individual school level (school administrative labor). The distribution is essentially bimodal -- for 44 percent of SFAs, less than 10 percent of unreported labor consists of school administrative labor, while for 21 percent of SFAs, more than 90 percent of unreported labor consists of school-based personnel (Appendix E, Exhibit E.26).[7] This appears to reflect the influence of three factors:

- use of non-food service central school district personnel for support services for the SFA;
- the locus of responsibility for processing applications for school meal benefits and conducting income verifications; and
- the degree to which non-food service school personnel are involved in the distribution of meal tickets.

Exhibit 4.5 shows that school-based personnel account for a much smaller proportion of unreported labor costs in small SFAs (21%) than in medium-size SFAs (57%) and large SFAs (59%). As discussed above, small SFAs are more likely to rely on central school district personnel for support services. However, activities such as processing applications and income verification are more likely to be carried out

[7]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.27.

Exhibit 4.5

School Administrative Labor as a Percent of Total Unreported Labor

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	39.6%	23.1%	39.6%	12,934	93
SFA Size					
Small (1-999)	20.8	4.6	31.1	6,327	12
Medium (1,000-4,999)	56.7	69.6	38.4	4,537	28
Large (5,000+)	59.3	84.2	38.5	2,070	53

centrally (by SFA personnel) in small SFAs than in larger SFAs, where those same activities are more likely to be carried out by (non SFA) school personnel.

Unreported Indirect Costs. Nearly all State Education Agencies review school districts' cost information and provide each school district with an approved indirect cost rate. However, school districts are not obligated to apply the approved indirect cost rate to food service (or other grant programs). Some school districts have indirect costs that are attributable to food service, but do not report these costs on the food service budget. In some districts food service reports some, but not all, of the indirect costs. Exhibit 4.6 presents the distribution of SFAs by whether they report all indirect costs, some indirect costs, or no indirect costs. In nine out of ten SFAs where the school district has indirect costs that could be applied to food service, the SFA does not report for any indirect costs. However, large SFAs are more likely to report indirect costs than small or medium-size SFAs.[8]

[8]As discussed in Chapter Five, even in cases where the SFA reports indirect costs, the school district might not recover these costs (i.e., funds are not transferred from the food service account to the school district general fund).

Exhibit 4.6

Proportion of Calculated Indirect Costs Reported by the SFA: Distribution of SFAs by Size Class

Size Class	Report None	Report Some	Report All	All SFAs[1]
Small SFAs	100.0%	0.0%	0.0%	100.0%
Medium SFAs	89.2	2.4	8.4	100.0
Large SFAs	52.5	5.2	42.4	100.0
All SFAs	89.3	1.6	9.0	100.0
Unweighted N = 81 Weighted N = 11,608				

[1]Includes only SFAs where the school district has indirect costs that could be applied to food service.

Unreported indirect costs represent school district resources used by food service and account for 5 percent of the full cost of food service (Appendix E, Exhibit E.20). Unreported indirect costs account for 27 percent of total unreported costs for the average SFA. Exhibit 4.7 examines unreported indirect costs as a percent of total unreported costs.[9] For almost one-third of all SFAs (32%), unreported indirect costs accounted for less than 10 percent of total unreported costs (Appendix E, Exhibit E.28). At the other extreme, in 17 percent of SFAs unreported indirect costs accounted for at least half of total unreported costs. Unreported indirect costs accounted for an average of about 28 percent of total unreported costs in small SFAs and medium-size SFAs, compared to only 18 percent in large SFAs. This reflects the fact that relatively few small or medium-size SFAs report indirect costs. Indirect costs are described in more detail in Chapter Five.

Unreported Equipment Depreciation. SFAs rarely include equipment depreciation as a reported cost. In SY 1992-93, only 16 percent of SFAs reported depreciation costs.[10] Consequently, an Equipment Cost Inventory for each school in the district was completed for those districts that did not report

[9]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.29.

[10]Depreciation was more likely to be reported by large SFAs (40%) than small (0%) or medium-size SFAs (28%).

Exhibit 4.7

Unreported Indirect Costs as a Percent of Total Unreported Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	27.1%	24.3%	23.5%	12,934	93
SFA Size					
Small (1-999)	28.2	24.3	21.8	6,327	12
Medium (1,000-4,999)	29.7	23.9	24.7	4,537	28
Large (5,000+)	17.9	0.0	23.7	2,070	53

depreciation expense. Equipment costs were then amortized over a 12-year lifespan to estimate depreciation costs.

Exhibit 4.8 examines unreported depreciation as a percentage of total unreported costs.[11] Unreported depreciation represented, on average, 16 percent of total unreported costs, and in only one-third of SFAs (32%) did unreported depreciation account for as much as 20 percent of total unreported costs (Appendix E, Exhibit E.31).[12]

Unreported Utilities. Utilities include electricity, gas, and any other energy costs used in food production.

Exhibit 4.9 examines other unreported utility costs as a percentage of total unreported costs.[13] On average, unreported utility costs represented 11 percent of total unreported costs. In three out of four SFAs (77%), unreported utility costs accounted for less than 20 percent of total unreported costs (Appendix E, Exhibit E.33).

---

[11]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.30.

[12]Depreciation was more likely to be reported by large SFAs (40%) than small (0%) or medium-size SFAs (28%).

[13]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.32.

Exhibit 4.8

Unreported Depreciation as a Percent of Total Unreported Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	16.3%	13.6%	15.6%	12,934	93
SFA Size					
Small (1-999)	18.3	13.6	14.7	6,327	12
Medium (1,000-4,999)	16.3	15.6	16.7	4,537	28
Large (5,000+)	10.1	7.7	14.1	2,070	53

Exhibit 4.9

Unreported Utility Costs as a Percent of Total Unreported Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	11.3%	4.1%	13.2%	12,934	93
SFA Size					
Small (1-999)	11.0	11.7	9.7	6,327	12
Medium (1,000-4,999)	12.2	0.0	16.9	4,537	28
Large (5,000+)	10.2	3.7	13.2	2,070	53

FULL COST OF PRODUCING REIMBURSABLE MEALS

Full Cost per Reimbursable Lunch

Full costs per reimbursable lunch in SY 1992-93 ranged from $1.14 to over $3.00. In 41 percent of all SFAs, the full cost per reimbursable lunch was at least $2.00 (Appendix E, Exhibit E.34). By contrast, in only 12 percent of SFAs was the reported cost per reimbursable lunch this high.

Exhibit 4.10 summarizes the full cost of producing reimbursable lunches using both the SFA and the NSLP meal as the unit of analysis. Across all SFAs, the mean full cost of a reimbursable lunch was $2.14. This estimate reflects the influence of small SFAs with very small, high cost lunch programs.[14] The very small, high cost SFAs exert less influence on the median than the mean. Therefore, the median full cost per reimbursable lunch ($1.88) is probably a better indicator of the full cost of producing reimbursable lunches in the average SFA. For the average SFA the full cost of producing a reimbursable lunch is 15 percent higher than the reported cost (median full cost of $1.88 vs. median reported cost of $1.63). None of the subgroup differences is significant at the .05 level of confidence.[15]

The total Federal subsidy for free lunches in SY 1992-93 ($1.84) was slightly less than the median full cost of producing a lunch ($1.88). The full cost of producing a reimbursable lunch was less than the total subsidy for a free lunch in 39 percent of SFAs. Similarly, 46 percent of all reimbursable lunches served in SY 1992-93 were produced at a full cost that was less than the total subsidy for a free lunch.

Full Cost per Reimbursable Breakfast

In SY 1992-93 full costs per reimbursable breakfast ranged from $0.62 to $3.60 (Appendix E, Exhibit E.35), with a median cost of $1.38 and a mean cost of $1.67 (Exhibit 4.11). Unreported costs had a greater effect on breakfast costs than lunch costs. For the average SFA, the full cost of a breakfast was 31 percent higher than the reported cost of a breakfast (median full cost of $1.38 vs. median reported cost

---

[14]In the unweighted sample of 93 SFAs, one SFA with a weight of 585 had a full cost per reimbursable lunch of $6.00. This SFA had extremely high labor costs. With two schools producing a combined total of less than 20,000 lunches per year (an average of only 108 per day) and less than 9,000 breakfasts per year (an average of only 51 per day), it employed two full-time kitchen manager/cooks.

[15]Full cost per reimbursable lunch and breakfast by meal production system is presented in Appendix E, Exhibit E.36.

Exhibit 4.10

Total Full Cost per Reimbursable Lunch

	Total Full Cost per Reimbursable Lunch						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$2.14	$1.88	.95	$1.95	$1.88	.47	12,934	93
NSLP and SBP	2.22	1.88	1.12	1.95	1.88	.46	8,563	77
NSLP only	1.99	1.85	.44	2.04	2.08	.51	4,371	16
SFA Size								
Small (1-999)	2.43	2.08	1.21	2.26	2.08	.83	6,327	12
Medium (1,000-4,999)	1.85	1.81	.51	1.80	1.74	.47	4,537	28
Large (5,000+)	1.91	1.88	.35	1.96	1.88	.37	2,070	53
A la Carte Revenues[1]								
< 10% of Total Revenue	2.02	1.76	.52	2.05	1.94	.51	3,673	29
≥ 10% of Total Revenue	1.88	1.88	.35	1.86	1.87	.31	6,308	49

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

of $1.05). None of the subgroup differences in the full cost per reimbursable breakfast are significant at the .05 level of confidence.

There is some evidence of economies of scale in the production of reimbursable breakfasts. Total breakfast labor costs in a school may be viewed as relatively fixed because of the small size of the breakfast program. Thus as the number of breakfasts served increases, labor cost per breakfast decreases. When the unit of analysis is the SBP meal, the median full cost per reimbursable breakfast was $1.20. This reflects the effect of schools serving large numbers of reimbursable breakfasts which tend to have lower unit costs.

Exhibit 4.11

Total Full Cost per Reimbursable Breakfast

	Total Full Cost per Reimbursable Breakfast						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is SBP Breakfast				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total SFAs	$1.67	$1.38	.75	$1.28	$1.20	.37	8,514	77
SFA Size								
Small (1-999)	1.59	1.38	.49	1.32	1.10	.38	4,693	10
Medium (1,000-4,999)	1.89	1.28	1.00	1.25	1.25	.48	2,119	17
Large (5,000 +)	1.60	1.24	.90	1.27	1.20	.33	1,702	50
A la Carte Revenues[1]								
< 10% of Total Revenue	1.31	1.34	.32	1.15	1.02	.31	1,984	25
≥ 10% of Total Revenue	1.70	1.38	.85	1.31	1.35	.34	4,373	39

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

The regular reimbursement rate for free breakfasts in SY 1992-93 was $0.95, with a "severe need" rate of $1.12. These rates were almost always insufficient to cover the full cost of producing a reimbursable breakfast. In nine out of ten SFAs (93%), the full cost exceeded the regular reimbursement rate for free breakfasts, and in eight out of ten SFAs (82%), the full cost exceeded the higher severe need rate. Even when the unit of analysis is the SBP meal, 89 percent of all breakfasts served in SY 1992-93 were produced at a full cost that exceeded the regular reimbursement rate for a free breakfast (61 percent were produced at a full cost that exceeded the higher severe need rate). This contrasts sharply with lunch costs.

COMPOSITION OF FULL COSTS

The composition of full costs differed somewhat from the composition of reported costs. As one would expect, food and labor costs accounted for the vast majority (84%) of the full cost of food service operations for the average SFA (Exhibit 4.12).[16] However, food costs (including the assigned value of donated commodities) accounted for 38 percent of full costs, compared to 48 percent of reported costs. This reflects the fact that all food costs are included in reported costs, but some labor and other costs are not included in reported costs. Labor costs accounted for 46 percent of full costs (44 percent of reported costs). All other costs, including supplies, contract services, depreciation, indirect charges by the school district etc., represented 16 percent of the average SFA's full costs (8 percent of reported costs).

Cost Components of Reimbursable Lunches

Exhibit 4.13 presents a summary of the components of the full cost of reimbursable lunches.[17] For the average SFA, food costs per reimbursable lunch were $0.79 in SY 1992-93, with mean labor costs of $1.00, and other costs averaging $0.35. There was considerably more variation among SFAs in labor costs than food costs (Appendix E, Exhibit E.38). The coefficient of variation for labor cost per lunch was 0.54 compared to 0.32 for food costs. The greater variability in labor costs reflects the variation in the proportion of labor costs that are unreported (Appendix E, Exhibit E.24). While all food costs are reported, on average 18 percent of labor costs are unreported.

Mean food costs per reimbursable lunch are lower using the meal as the unit of analysis ($0.72 vs. $0.79), perhaps reflecting the greater buying power of the large SFAs. Mean labor costs per lunch are also somewhat lower using the meal as the unit of analysis ($0.90 vs. $1.00).

---

[16]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.37.

[17]Appendix E, Exhibits E.40 and E.41 present this information by type of SFA.

Exhibit 4.12

Composition of Food Service Full Costs

	Percent of SFA Full Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total Sample	38.2%	38.8%	6.5%	45.8%	46.0%	7.5%	16.0%	15.5%	4.3%	12,934	93
Participation in SBP											
NSLP and SBP	38.7	40.9	5.3	45.2	44.1	6.4	16.0	15.5	4.6	8,563	77
NSLP only	37.3	35.4	8.2	46.9	48.6	9.3	15.8	16.0	3.7	4,371	16
SFA Size											
Small (1-999)	38.3	37.0	6.1	44.5	47.3	7.4	17.2	16.0	3.7	6,327	12
Medium (1,000-4,999)	39.0	40.8	6.5	45.9	45.8	7.4	15.1	13.7	4.2	4,537	28
Large (5,000 +)	36.4	35.9	7.1	49.5	49.1	7.0	14.1	13.7	5.1	2,070	53
A la Carte Revenues[1]											
< 10% of Total Revenues	37.0	35.4	6.0	46.8	48.6	7.1	16.2	16.0	3.3	3,673	29
≥ 10% of Total Revenues	39.7	42.0	6.8	45.4	44.1	7.6	14.8	14.9	3.7	6,308	49

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit 4.13

Full Cost Components of Reimbursable Lunches

Unit of Analysis	Cost Component									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
SFA	$0.79	$0.77	0.25	$1.00	$0.82	0.54	$0.35	$0.30	0.22	12,934	93
Meal	$0.72	$0.70	0.14	$0.90	$0.90	0.30	$0.33	$0.30	0.18	12,934	93

Cost Components of Reimbursable Breakfasts

Exhibit 4.14 examines the components of the full cost of reimbursable breakfasts.[18] For the average SFA, food costs per reimbursable breakfast were $0.56 in SY 1992-92, with mean labor costs of $0.84, and other costs averaging $0.27. As in the case of lunch costs, there is considerably more variation in breakfast labor costs than breakfast food costs (Appendix E, Exhibit E.39). The coefficient of variation for labor cost per breakfast was 0.65 compared to 0.30 for food. As discussed above, the greater variability in labor costs in part reflects the variability in unreported labor costs.

While food costs per reimbursable breakfast are somewhat lower using the meal as the unit of analysis ($0.49 vs. $0.56), mean labor costs are considerably lower using the meal as the unit of analysis ($0.57 vs. $0.84). This reflects the economies of scale in breakfast production--schools that serve large numbers of reimbursable breakfasts tend to have much lower labor costs per meal than schools that serve relatively few reimbursable breakfasts.

Administrative Costs

Food service administrative costs include the cost of performing administrative activities in support of food service operations, e.g., administrative tasks performed by central food service staff, school-based food service staff (e.g., kitchen managers), central school district personnel, and school administrators

[18]Appendix E, Exhibit E.42 and E.43 present this information by type of SFA.

Exhibit 4.14

Full Cost Components of Reimbursable Breakfasts

Unit of Analysis	Cost Component									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
SFA	$0.56	$0.55	0.17	$0.84	$0.64	0.55	$0.27	$0.21	0.14	8,514	77
Meal	$0.49	$0.48	0.12	$0.57	$0.53	0.26	$0.22	$0.21	0.10	8,514	77

(e.g., principals). This study has broadly defined food service administration to include regular administrative activities such as planning, budgeting and management for the food service program, and other non-production activities such as maintenance of food service equipment.

Exhibit 4.15 examines total administrative costs (including unreported costs) in relation to total labor costs.[19] Because virtually all unreported labor performs administrative and other non-production activities in support of food service, on a full-cost basis administrative labor accounts for a much higher percentage of labor costs than on a reported-cost basis. On a full-cost basis, administrative labor accounted for an average of 30 percent of total labor costs. This compares to an average of 17 percent on a reported-cost basis. As one would expect based on the differences among SFAs in what is and what is not charged to the food service budget, there is also less variation in the administrative share of total costs on a full-cost basis than on a reported-cost basis (coefficient of variation of 0.38 vs. 0.60, Appendix E, Exhibit E.45).

Exhibit 4.16 examines total administrative labor costs in relation to total full costs. Administrative labor accounts for a relatively small proportion of total full costs. For the average SFA, total administrative labor cost accounted for 14 percent of total full costs in SY 1992-93. In eight out of ten SFAs, administrative (and other non-production) labor accounted for less than 20 percent of total full costs (Appendix E, Exhibit E.46).

[19]Additional detail by type of meal production system is presented in Appendix E, Exhibit E.44.

Exhibit 4.15

Total Administrative Labor Costs as a Percent of Total Labor Costs

	Total Full Cost per Reimbursable Lunch						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	29.5%	28.3%	8.9	32.2%	30.2%	10.4	12,934	93
NSLP and SBP	29.2	27.9	9.4	32.3	29.5	10.6	8,563	77
NSLP only	30.1	28.8	7.7	31.5	30.8	8.7	4,371	16
SFA Size								
Small (1-999)	29.7	28.2	8.5	31.2	28.6	10.3	6,327	12
Medium (1,000-4,999)	27.7	28.8	9.0	28.0	28.8	9.7	4,537	28
Large (5,000+)	32.7	33.2	8.7	33.4	30.2	10.3	2,070	53
A la Carte Revenues[1]								
< 10% of Total Revenues	30.3	28.2	8.6	32.1	32.2	10.6	3,673	29
≥ 10% of Total Revenues	28.4	28.6	7.4	29.5	27.8	8.6	6,308	49

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit 4.16

Administrative Labor Costs as a Percent of Total Full Costs

	Total Full Cost per Reimbursable Lunch						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	13.6%	13.4%	5.1	14.7%	14.0%	5.0	12,934	93
NSLP and SBP	13.2	13.0	4.7	14.5	14.0	4.9	8,563	77
NSLP only	14.5	13.7	5.6	16.0	14.6	6.1	4,371	16
SFA Size								
Small (1-999)	13.2	13.4	4.3	13.6	13.7	5.1	6,327	12
Medium (1,000-4,999)	13.0	11.8	5.4	12.9	13.0	5.1	4,537	28
Large (5,000+)	16.3	14.5	5.4	15.3	14.2	4.9	2,070	53
A la Carte Revenues[1]								
< 10% of Total Revenues	14.5	13.7	5.4	14.6	14.5	5.0	3,673	29
≥ 10% of Total Revenues	13.0	12.1	4.7	13.9	12.2	4.9	6,308	49

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Chapter Five

Analysis of School District Indirect Costs

As discussed in Chapter Four, SFAs often use a variety of resources that are provided or paid for by the school district, including:

- administrative or support functions performed by school district personnel, (including accounting, data processing, payroll, personnel, purchasing, storage, and transportation);
- facilities, equipment, supplies, and services (including energy, communications and transportation) provided or paid for by the school district; and
- employee benefits, payroll taxes and insurance.

School districts account for these resources in one of three ways.

1. Costs which the school district can and wants to identify are treated as ***direct food service costs***.
2. Costs which can not practically be identified as direct costs are, in some school districts, allocated to the food service program as ***reported indirect costs***.
3. Costs of school district support for food service operations are often left ***unreported*** and are included as part of the general operating costs of the school district.

In this study, costs incurred by school districts in support of food service operations have been estimated in two ways. If the school district has a method that can be used to allocate indirect costs to the food service program, but does not report these costs, the ***unreported food service indirect cost*** has been calculated. In some SFAs, no indirect cost allocation method is available; in others, the indirect cost does not include all support functions or cost objects attributable to food service. For these SFAs, school district resources used in support of food service that were not included in the unreported indirect cost (if any) were calculated as ***unreported direct costs***.

This chapter presents an analysis of school district indirect costs. The objective of this analysis is to determine the amount of indirect cost allocated to food service, the basis for the indirect cost allocation, and the amount of indirect cost actually transferred from the food service fund to the school district's general fund.

The research questions addressed include:

- What proportion of SFAs report indirect food service costs? How much of the actual food service indirect cost is reported and recovered?
- How does each school district allocate indirect cost to food service?
- To what extent do school districts calculate and charge indirect costs to other state and Federal grants?

To address these questions, a review of indirect cost allocation practices in SY 1992-1993 was conducted for each SFA in the study sample. This review was generally completed with the school district's business manager or other senior administrative officer. The data from the indirect cost review were combined with SFA cost reports and results from a telephone survey of state education finance officers.

For the purposes of the study, the calculated food service indirect cost was based on the most inclusive available rate or method. As discussed later in this chapter, most school districts have more than one indirect cost rate or other allocation method. This approach minimized the need to estimate unreported direct costs.

The key findings with regard to indirect costs include:

- SFAs rarely report indirect costs. In 80 percent of SFAs, the school district has indirect costs in support of food service, but these costs are not reported on SFA financial statements. Unreported indirect costs are nearly 8 percent of total SFA reported costs.
- School districts rarely recover indirect costs from food service. Only 4 percent of school districts with food service indirect costs ***report and recover*** the full amount of those indirect costs.
- School districts often choose to absorb the indirect costs attributable to food service as a means of subsidizing the SFA. More than half (53%) of school districts that did not recover indirect costs from food service chose to bear these costs rather than charge the SFA.
- Nearly all school districts with food service indirect costs (94%) have a percentage rate (i.e., the ratio of school district indirect costs to all school district direct costs) available for allocating indirect costs to food service and other grants. All such indirect cost percentage rates are calcuated or approved by the State Education Agency on the basis of a standard cost allocation plan.
- School districts are more likely to calculate and recover indirect costs from other grants and programs than from food service. One third of school districts with indirect cost methods calculate and recover the full indirect costs for at least some of their other grants and programs.

SFA PRACTICES FOR REPORTING INDIRECT COSTS

It is important to distinguish between *reporting indirect costs* attributable to food service, and *recovering* these costs from the SFA. Some school districts have an indirect cost rate, but do not apply this rate to food service. In such cases, the indirect costs attributable to food service are not reported on the SFA's annual cost report or financial statement. However, in other SFAs, the school district calculates the indirect costs attributable to food service and these costs are reported on the SFA's financial statement, but the school district does not *charge* the SFA for the full indirect cost (i.e., reported indirect costs are not recovered by the school district). This section examines SFA practices for ***reporting*** indirect costs. The ***recovery*** of indirect costs from food service (and other school district programs) is discussed in the next section.

Any SFA that has an applicable indirect cost rate and does not charge all SFA costs directly is considered to have indirect costs, even if the school district does not apply the rate to food service costs.[1] As shown in Exhibit 5.1, the great majority of SFAs (80%) have indirect costs but do not report them. Only eight percent report all of the indirect costs attributable to food service, and even fewer (1%) report some, but not all, indirect costs attributable to food service. About 10 percent have no indirect costs, either because all support costs are billed directly to food service (4%) or because the school district has no indirect cost rate or other method of estimating the cost of support services provided to food service (6%).[2]

As noted in Chapter Four, the percent of SFAs reporting indirect costs varies considerably by SFA size. Small and medium-size SFAs rarely report indirect costs. Approximately 92 percent of small SFAs have food service indirect costs but do not report any indirect costs on their annual financial statements. A very small proportion of small school districts (4%) charge food service directly for support services provided; the rest have no method for determining food service indirect costs. Similarly, 81 percent of medium-size districts have food service indirect costs but do not report them; only 10 percent of all medium-size SFAs report any indirect costs. By contrast, 34 percent of large school districts report all

---

[1]District support costs may be billed directly to the SFA on the basis of individual employees' time and salaries or standard rates for services. Because the billing in these instances is considered direct by the district, we do not treat these costs as indirect. The study design did not include analysis of the methods and procedures (e.g., cost allocation plans) for such direct billing of food service support costs. Every school district that billed food service support costs directly used at least one available indirect cost method but did not use that method in determining SFA costs.

[2]In cases where a school district had no method for estimating the cost of support services provided to food service (or not all support services were included in indirect costs) this study identified and estimated the cost of these services. These costs were included as unreported direct costs in Chapter Four.

Exhibit 5.1

SFA Practices for Reporting Indirect Costs

	District Has Food Service Indirect Costs[1]			School District Support Services Treated as Direct Costs	No Method for Estimating Cost of School District Support Services	Total All SFAs	SFA Sample Size	
	SFA Reports[2] all Indirect Costs	SFA Reports[2] Some Indirect Costs	SFA Reports No Indirect Costs				Weighted	Unweighted
Total	8.1%	1.4%	80.2%	3.7%	6.5%	100.0%	12,934	93
SFA Size								
Small (1-999)	0.0	0.0	92.1	4.3	3.6	100.0	6,327	12
Medium (1,000-4,999)	7.7	2.2	81.4	0.0	8.7	100.0	4,537	28
Large (5,000+)	33.6	4.1	41.6	10.3	10.5	100.0	2,070	53

[1] School district has a method for calculating indirect costs for food service and does not treat all support services as direct costs. Some districts do not actually calculate the indirect costs attributable to food service (e.g., a district might have an indirect cost rate, but not apply it to food service).

[2] School districts may calculate and report indirect costs attributable to food service, but not recover these costs. See Exhibit 5.6

the indirect costs attributable to food service, and another 4 percent of large SFAs report a portion of the calculated indirect cost. Only 42 percent of large SFAs do not report any part of calculated indirect costs. Another 10 percent of large SFAs do not report any indirect costs because all school district support services are directly charged to the SFA; the remaining 10 percent have no rates or other methods off allocating indirect costs.

Among school districts with food service indirect costs, SFAs report an average of 10 percent of the food service indirect costs as calculated for this study (Exhibit 5.2). The mean proportion of indirect costs reported by large SFAs is 45 percent; medium-size SFAs report an average of 11 percent of indirect costs; small SFAs do not report any indirect costs. These statistics reflect the essentially bimodal distribution of SFAs. For the most part, SFAs report all indirect costs attributable to food service, or do not report any indirect costs.

Exhibit 5.2

Percent of Indirect Cost Reported by SFAs With Indirect Costs

	Percent of Indirect Cost Reported by SFAs With Indirect Costs[1]			SFA Sample Size[1]	
	Mean	**Median**	**STD**	**Weighted**	**Unweighted**
Total	10.2%	0.0%	29.9	11,608	81
SFA Size					
Small (1-999)	0.0	0.0	0.0	5,826	10
Medium (1,000-4,999)	10.8	0.0	31.0	4,142	25
Large (5,000+)	44.7	0.0	48.5	1,640	46

[1]Excludes weighted total of 1,326 SFAs (12 unweighted) that do not have indirect costs because (a) they have no indirect cost rate or other method, or (b) all costs are billed as direct costs.

RECOVERY OF SFA INDIRECT COSTS

The actual financial impact of indirect cost allocation on SFAs depends on whether these costs are both reported and recovered. The SFA or school district may compute the food service indirect cost for reporting purposes without actually transferring the full calculated amount from the food service fund to the school district's general fund. Some States require SFAs to report food service indirect costs as part of their NSLP and SBP reimbursement claims, but do not require the recovery of the reported indirect cost. Recovery of indirect costs may also depend on whether an SFA has sufficient revenues after covering its direct costs.

School districts rarely recover food service indirect costs. Exhibit 5.3 shows that 89 percent of school districts with food service indirect costs do not report or recover these indirect costs. In about 7 percent of districts with food service indirect costs the SFA reports at least some of these costs, but the school district does not recover the entire food service indirect costs. Only 4 percent of school districts recover all of the food service indirect costs attributable to food service.

As noted above, small school districts do not report (or recover) indirect cost for food service. Even though large SFAs are far more likely to report indirect costs than small and medium-size SFAs, most large school districts still do not recover these reported indirect costs. While 47 percent of large SFAs reported indirect costs, only 7 percent actually transferred the reported indirect costs to the school district's general fund.

Exhibit 5.4 presents the reasons why school districts did not recover indirect costs from food service; in some cases, multiple reasons apply, so the percentages sum to more than 100 percent. More than half (52%) of the school districts that did not recover all of the food service indirect costs chose to bear the cost as a way of subsidizing the SFA. One-quarter of the districts were unable to recover all of the food service indirect costs because the SFA had insufficient funds. Five percent of school districts were directed by a local authority (such as a town council) not to charge food service for indirect costs. About one-third (30%) of school districts could not provide any specific reason why the district did not recover indirect costs from food service. (These districts typically did not report any food service indirect costs and may not have even considered this possibility.)

Only 11 percent of large school districts did not recover indirect costs from food service because the SFA had insufficient funds, but about one quarter of small and medium-sized school districts cited insufficient funds as a reason for not recovering indirect costs from food service. The primary reason for not

Exhibit 5.3

Recovery of Indirect Costs from Food Service Districts with Food Service Indirect Costs

	Percent of Districts with Indirect Costs					District Sample Size[1]	
	Report and Recover all Indirects	Report All But Do Not Recover All Indirects	Report Some, Do Not Recover All Indirects	Do Not Report or Recover Indirects	All Districts with Indirect Costs	Weighted	Unweighted
Total	4.0%	5.0%	1.6%	89.4%	100.0%	11,608	81
SFA Size							
Small (1-999)	0.0	0.0	0.0	100.0	100.0	5,826	10
Medium (1,000-4,999)	8.5	0.0	2.4	89.1	100.0	4,142	25
Large (5,000+)	7.1	35.3	5.1	52.5	100.0	1,641	46

[1]Excludes the school districts that charged support costs directly to food service (weighted sample size, 483). The study did not examine recovery of direct costs billed by the school district to the SFA.

Exhibit 5.4

Reasons for Not Recovering Indirect Costs from Food Service: Districts That Do Not Recover All Indirect Costs from Food Service

Total	Reasons For Not Recovering All Indirect Costs[1]					District Sample Size[2]	
	SFA Had Insufficient Funds	District Chose to Bear Cost	Local Authority Directed District Not to Charge	Other	Don't Know	Weighted	Unweighted
Total	24.9%	52.3%	4.6%	7.1%	30.2%	11,141	71
SFA Size							
Small (1-999)	28.7	52.2	0.0	10.0	30.0	5,826	10
Medium (1,000-4,999)	24.7	50.0	11.8	1.9	33.1	3,792	23
Large (5,000+)	10.6	58.3	4.4	8.5	24.0	1,524	38

[1] Detail does not sum to 100 percent because school districts might have given multiple reasons.

[2] Excludes districts that recover all food service indirect costs.

recovering indirect costs was the same in small, medium-size, and large school districts—the district chose to bear the cost as a means of subsidizing food service.

METHODS USED TO ALLOCATE INDIRECT COSTS

The allocation of indirect costs to food service and other school district programs consists of three basic steps:

- creating one or more pools of indirect costs to be allocated;
- defining the objectives or programs (e.g., vocational education) to which indirect costs will be allocated; and
- setting the formula for allocating the indirect costs to the defined objectives.

Each of these steps significantly affects the nature and magnitude of the indirect cost allocated to food service. The creation of the indirect cost pools determines the size and scope of the school district's indirect costs. The definition of the programs to which indirect costs are allocated affects the proportion of indirect costs allocated to food service, since the more activities or organizations that are included, the smaller the proportion allocated to any one activity. Finally, different formulas allocate more or less cost to food service, depending on whether the resource used as the base (direct costs, person-hours of labor, square feet of space, etc.) is one that food service uses sparingly or intensively.

In allocating indirect costs, school districts follow rules set by Federal and state agencies. The Office of Management and Budget, through Circular A-87, sets guidelines for what indirect costs may be charged against Federal funds, how they may be allocated, and how cost allocation methods should be documented and approved. The U.S. Department of Education regulates the allocation of indirect costs to grants provided to school districts and oversees the role of the states in setting indirect cost rates. Each State Education Agency (SEA) must calculate or approve indirect cost rates for school districts that elect to use them in charging costs to Federal grants, based on a State Cost Allocation Plan for school districts approved by the U.S. Department of Education. The State Cost Allocation Plan sets forth the guidelines for the assignment of school districts' support costs to direct and indirect cost pools and for the calculation of district indirect cost rates. A few large SFAs have State-approved district-specific indirect cost allocation plans.

The Education Department regulations (34 CFR, Parts 74-76) define two categories of indirect cost rates: ***restricted*** and ***unrestricted rates***. A restricted rate is used for a grant that requires that Federal funds do

not supplant local funds, i.e., Federal funds must only be used for incremental costs related to the grant program (such as bilingual education). Only two types of cost pools may be included in a restricted rate: "administrative charges" (costs of district-wide administrative activities, not including the Superintendent and the School Board) and "fixed charges" (employee benefits, payroll taxes and insurance). An unrestricted rate is to be used for programs, including the NSLP and SBP, that do not have the "non-supplanting" rule. Additional indirect costs, such as the operation and maintenance of district facilities, can be included in the unrestricted indirect cost rate. Neither type of rate may include costs that are not allowable under Federal programs, such as capital outlays and interest. USDA regulations (7 CFR 210.14) do not allow the use of food service revenues (directly or through indirect cost allocation) for the purchase of land or buildings, or for building construction.

Most SEAs define and calculate indirect cost percentages for the school districts in their States. This process is usually part of the SEA's general financial reporting system for school districts. The SEA sets the overall accounting framework for the school districts (including funds, programs or objectives, and revenue and expenditure categories); this framework includes the definition of indirect and direct cost pools. Before the start of each school district fiscal year, the typical SEA uses an earlier fiscal year's costs to calculate each school district's indirect cost rate. In a variation on this approach, a school district requests a rate and follows a state-approved formula or worksheet. Some states only calculate restricted indirect cost rates; most calculate both restricted and unrestricted rates.

Some school districts use more ad hoc methods of allocating indirect costs to food service. In these methods, the indirect cost pool is more narrowly defined (e.g., utilities) and a formula appropriate to the nature of the specific indirect pool is established. Examples of this approach include: utilities allocated in proportion to square feet of space; custodial staff charged on the basis of a set number of expected hours of food service support; or data processing costs allocated in proportion to the amount of data processing time used. Finally, some SFAs are charged a lump sum for indirect costs, based on an estimated or negotiated figure representing the cost of the specific services provided by the school district.

Types of Costs Included in Indirect Costs. Exhibit 5.5 summarizes the frequency with which various types of costs are included in the calculated food service indirect cost. Labor (including fringe benefits) is the most common cost: all school districts that could determine the composition of their calculated indirect costs identified labor as a component. (In some SFAs, especially those that made no use of state-calculated rates, the composition of indirect costs was not available.) In 75 percent of school districts with indirect cost rates, the indirect cost includes "other" costs, such as contract services and travel; 45

Exhibit 5.5

Cost Objects Included in Indirect Costs:
School Districts with Food Service Indirect Costs

Cost Object	Cost Object Included in Indirect Costs			Total All Districts with Indirect Costs
	Yes	No	Don't Know[1]	
Labor	84.3%	0.0%	15.7%	100.0%
Supplies	45.2	7.9	46.9	100.0%
Utilities	19.8	42.3	37.9	100.0%
Equipment	13.1	40.5	46.4	100.0%
Other[2]	74.6	5.4	20.0	100.0%
Weighted Sample Size[3]				11,608
(Unweighted Sample Size)[3]				(81)

[1]Many school districts do not calculate or use their indirect cost rates, and therefore do not know the composition of the indirect cost pools.

[2]"Other" costs include travel, communications, publications and subscriptions, and contractual services.

[3]Excludes weighted total of 1,326 SFAs (12 unweighted) that do not have indirect costs because (a) they have no indirect cost rate, or (b) all costs are billed as direct costs.

percent of districts include supplies in their indirect costs. Utilities (20%) and equipment (13%) are far less common; these are the non-labor costs which most frequently had to be estimated as unreported direct costs.

The patterns in Exhibit 5.5 reflect the typical composition of restricted and unrestricted indirect cost rates. Restricted rates typically include the labor, benefits, supplies and miscellaneous costs of general administrative units at the district level that are responsible for accounting, purchasing, payroll, personnel, and data processing. Unrestricted rates, which fewer districts have, add the costs of maintenance personnel and supplies, and often include utilities. Both types of rates exclude capital costs and lease-to-purchase costs as unallowable for federal reimbursement, so equipment costs are only likely to appear if the district rents equipment on a short-term basis.

Allocation Methods. The indirect cost allocation methods used by school districts vary in terms of the cost pools, direct cost objectives, and allocation formulas used, as well as varying in the extent to which these methods are applied to food service costs. The indirect cost allocation formulas used by school districts include:

- the **percentage rate method**, which uses the ratio of all school district indirect costs to all school district direct costs (with varying definitions of indirect and direct costs);
- the **full-time equivalent method**, which allocates costs in proportion to the number of full-time equivalent staff assigned to the program or function;
- the **square footage method**, which allocates costs in proportion to the amount of space used for each program or function;
- measures of labor effort from **time studies** or predetermined allocations of labor hours; and
- **lump-sum** allocation based on judgment, precedent or negotiation;

Exhibit 5.6 shows that nearly all districts (94%) with food service indirect costs have percentage rates. The full-time equivalent method is present in about 8 percent of districts; the lump sum method is present in 7 percent of districts. Less than 2 percent of districts use each of the other allocation methods. About 10 percent of districts have multiple allocation methods -- most often a percentage rate in combination with another method.

Adjusting Indirect Cost Rates. The indirect cost rate is often adjusted for changes in indirect or direct costs between the base year (used in setting the rates) and the year to which the rate is applied. Two options for adjusting indirect cost rates are: (a) the use of provisional and final rates; and (b) using a fixed rate with a carry-forward. In the first approach, a provisional rate is set at the start of the year and used to calculate indirect costs during the year. Once costs for the year are finalized, the final rate is recalculated, and a credit or debit is made to adjust for the difference. The fixed rate/carry-forward approach adjusts the next year's rate to offset any over- or under-recovery of indirect costs. Where the SEA calculates or approves indirect cost rates, it also defines the adjustment procedure.

Nearly three quarters (72%) of school districts with indirect costs do not make any adjustment for changes in indirect cost between the base year and the year to which the rate is applied (Exhibit 5.7). Approximately 27 percent of districts use some form of carry forward adjustment—21 percent adjust the next year's rate and 6 percent apply a credit or debit to the next year's costs, but do not adjust the rates.

Exhibit 5.6

Indirect Cost Allocation Methods:
Distribution of School Districts with Food Service Indirect Costs

Indirect Cost Method	Percent of Districts with Indirect Costs[1]	District Sample Size	
		Weighted	Unweighted
Percentage Rate	93.7%	10,879	75
Restricted Only	22.7	2,633	15
Unrestricted Only	14.0	1,621	8
Restricted and Unrestricted[2]	57.1	6,625	52
Full-time Equivalent Staff	7.7	895	8
Square Footage	1.6	180	6
Time Study or Labor Hours	1.6	184	6
Lump Sum	6.9	804	8
Other	1.8	211	6
Total School Districts with Food Service Indirect Costs		11,608	81

[1] Detail does not sum to 100 percent because 10.2 percent of school districts use multiple methods.

[2] For districts with both restricted and unrestricted rates, the unrestricted rate was used in this study to calculate food service indirect costs. Only a restricted rate was available in certain States because the State Education Agency did not provide for the calculation of unrestricted rates.

CALCULATION AND RECOVERY OF INDIRECT COSTS FROM OTHER GRANTS

School districts can only recover the indirect costs of food services to the extent that the funds available to the food service exceed the direct costs. Unlike the cost-based reimbursement in most Federal education grants to schools, the NSLP and SBP provide a fixed subsidy per meal based on the child's eligibility status (and, for the SBP, whether the school qualifies for severe need rates). Therefore, SFA revenues do not change with the addition of indirect costs, while revenue from cost-based grants can rise when indirect costs are charged. Thus, a school district may have more of an incentive to charge other grants for indirect costs.

Exhibit 5.7

Methods Used to Adjust Indirect Cost Rates:
Distribution of School Districts with Food Service Indirect Costs

Adjustment Procedure	Percent of Districts with Indirect Costs	District Sample Size	
		Weighted	Unweighted
Provisional and Final Rates	1.5%	180	4
Fixed Rate, No Adjustment	57.6	6,687	50
Fixed Rate with Carry-Forward	20.6	2,392	11
Other Rate, No Adjustment	13.0	1,513	6
Other Rate, Recalculate and Charge Later Year	0.9	107	4
Other Method, No Adjustment	1.3	141	4
Other Method, Recalculate and Charge Later Year	5.1	588	2
Total, All Districts with Food Service Indirect Costs	100.0	11,608	81

Exhibit 5.8 shows school district practices for the calculation of indirect cost for other grants and programs. Among school districts with indirect cost methods, 46 percent calculate the full indirect costs for ***at least*** some of their other grants and programs. Over 16 percent of school districts with indirect cost methods calculate indirect costs for all grants and over 29 percent calculate these costs for some of their grants. This compares with only 10 percent of school districts with indirect cost methods (including those that use direct billing for food service support costs) where the SFA reports some or all of the indirect costs attributable to food service.[3]

[3]Exhibit 5.1 shows that a total of 9.5 percent of all school districts report some food service indirects. The base for this figure includes the 6.5 percent of districts with no indirect cost methods. When only the districts with indirect cost methods are included, the percentage reporting some food service indirect costs rises to 10.2 percent. Another 4 percent of districts with indirect cost methods directly charged food service support costs.

Exhibit 5.8

Practices for Calculation of Full Indirect Costs for Other Grants and Programs

District Calculates Indirect Costs for:	Percent of Districts with Indirect Cost Methods[1]	District Sample Size	
		Weighted	Unweighted
All Grants	16.3%	1,976	31
Some Grants	29.3	3,547	32
No Grants	41.1	4,972	19
N/A: No Other Grants	6.2	753	1
Don't Know or Did Not Respond	7.0	843	3
All Districts with Indirect Cost Methods[1]	100.0	12,091	86

[1]Includes 5 districts (unweighted) which have indirect cost methods but charge all food service support as direct costs. These districts are not included in the sample used in Exhibits 5.2 through 5.6.

As in the case of food service, the most common reason for not calculating the full indirect costs for other grants was a decision by the district to bear the cost as a way of subsidizing these grants. About half (53%) of districts that did not calculate indirect costs for other grants chose to absorb the indirect costs attributable to these other grants (Exhibit 5.9). Seventeen percent of school districts did not calculate indirect costs for other grants because these grants did not include indirect costs in their budget; and 19 percent of districts did not calculate indirect costs for other grants because these grants had insufficient funds.

When a school district takes the effort to calculate the indirect costs of a grant, it is likely to recover the indirect cost from the grant. One-third (32 percent) of school districts with indirect cost methods

Exhibit 5.9

Reasons for Not Calculating Full Indirect Cost for Other Grants and Programs

Reason	Percent of Districts Not Calculating Full Indirect Costs for All Grants[1,2,3]	District Sample Size[1]	
		Weighted	Unweighted
Chose Not to Charge Any Other Grant	53.3%	4,541	17
Not Included in Some or All Grant Budgets	17.3	1,476	14
Insufficient Funds in Some or All Grant Budgets	18.8	1,598	12
District Directed by Other Authority Not to Charge Some or All Grants	6.9	590	6
Chose to Leave Money in Some Grants	3.7	316	4
Unaware Some or All Grants Could be Charged	2.6	224	2
Total Sample Size, School Districts Not Calculating Full Indirect Cost for All Grants[1]		8,519	51

[1]Excludes districts with no indirect cost allocation method and districts that calculate indirect costs for all grants and programs.

[2]Districts could give multiple reasons, so percentages do not sum to 100 and sample sizes do not sum to totals.

[3]An alternate indirect cost value was calculated for some grants in 12.8 percent of these districts (weighted percentage).

calculate and recover the full indirect costs for at least some of their other grants and programs.[4] Exhibit 5.10 shows that, of school districts that calculated the indirect costs attributable to other grants and programs, 70 percent recovered ***all*** of the calculated indirect costs; another 18 percent recovered at least ***some*** of the calculated indirect costs. Only 11 percent of school districts that calculated indirect costs attributable to other grants and programs failed to recover any of the calculated indirect costs for other

[4]This figure represents the proportion of all school districts with indirect cost methods (weighted sample size, 12,091) that calculated and recover some indirect costs from other grants. The percentages in Exhibit 5.10 are much higher because they exclude districts that do not calculate indirect costs for any other grant or program.

Exhibit 5.10

Recovery of Full Calculated Indirect Cost for Other Grants and Programs: Districts with Calculated Indirect Costs for Other Grants and Programs

Proportion of Full Calculated Indirect Cost Recovered[1]	Percent of Districts Calculating Indirect Costs[2]	District Sample Size	
		Weighted	Unweighted
Recovered All Indirect Cost	70.5%	3,897	44
Recovered Some Indirect Cost	18.3	1,009	16
Recovered No Indirect Cost	11.2	618	3
All Districts Calculating Indirect Costs[2]	100.0	5,523	63

[1]These categories apply to grants or programs for which the full indirect cost was calculated.
[2]Excludes districts that do not calculate indirect costs for any other grant or program.

grants and programs. This contrasts sharply with the reporting and recovery of indirect costs for the food service where only 4 percent of school districts with food service indirect costs report and recover all of those costs (Exhibit 5.3).

The reasons for not recovering indirect costs from other grants and programs were similar to the reasons for not recovering indirect costs from food service. Among school districts that did not recover the full calculated indirect costs from other grants and programs, 57 percent chose to bear these costs as a means of subsidizing the grants or programs involved (Exhibit 5.11). About 21 percent of school districts did not recover the full indirect costs because the grants or programs involved did not have sufficient funds.

Exhibit 5.11

Reasons for Not Recovering Full Calculated Indirect Cost for Other Grants: Districts That Do Not Recover Full Calculated Indirect Costs for Other Grants

Reason	Percent of Districts That Do Not Recover Full Calculated Indirect Cost[1]	District Sample Size[2]	
		Weighted	Unweighted
Insufficient Funds in Grant Account	20.7%	336	10
Chose to Bear Cost	56.8	924	11
Directed by State or Local Authority to Bear Cost for All Grants	13.5	220	4
Directed by State or Local Authority to Bear Cost for Some Grants	6.8	111	1
Don't Know	19.8	322	2
Total Districts That Do Not Recover Full Calculated Indirect Cost[2]		1,627	19

[1]Percentages do not sum to 100 because districts could give multiple reasons.

[2]Excludes districts that (a) do not calculate indirect cost for any other grants or (b) recover full calculated indirect costs from all other grants for which this value is calculated.

Chapter Six

Composition of SFA Revenues and Revenue/ Cost Comparisons

SFAs receive revenues from several sources. Some of the sources are related to the sale of reimbursable meals (Federal reimbursements, State and local reimbursements, and student payments for reduced-price and full-price meals), while other revenues are not related to the sale of reimbursable meals, including a la carte sales and sales to adults. Because SFAs are nonprofit, reported costs will generally equal revenues. Within this overall status though, SFAs may shift costs between breakfast and lunch, or reimbursable and non-reimbursable meals. If revenues from reimbursable meals exceed the cost of producing these meals, the SFA may use the funds to support a la carte meals. Similarly, if revenues from reimbursable meals are less than the costs, the SFA may use the a la carte revenues to support the cost of reimbursable meals. This chapter presents an analysis of SFAs' revenues for SY 1992-93. This includes both the composition of revenues (the magnitude of each type of revenue relative to the SFA's total revenues) and the relationship of revenues received from reimbursable meals to the cost of producing the meals.

The research questions addressed in this chapter include the following:

- What is the composition of SFA revenues? What proportion of SFA revenues come from various sources, including Federal reimbursements, State and local reimbursements, income from the sale of reimbursable meals, income from a la carte sales, and income from sales to adults?
- What is the difference between the cost of producing reimbursable meals and the revenues derived from the sale of those meals?
- What is the difference between the costs of non-reimbursable meals (e.g. a la carte sales, sales to adults) and the revenue resulting from those meals?

Key findings with regard to SFA revenues include:

- Revenues related to the sale of reimbursable meals account for an average of 85 percent of total SFA revenues.
- USDA subsidies, including cash reimbursements and donated commodities represent the largest single source of SFA revenues, accounting for an average of 46 percent of total SFA revenues.

- On average, SFAs are operating at the break-even level, with total revenues about equal to total reported costs.

- Revenues obtained from reimbursable lunches exceed the cost of producing these meals. SFAs appear to subsidize reimbursable breakfasts and non-reimbursable meals with surplus revenues derived from reimbursable lunches.

COMPOSITION OF REVENUES

Exhibit 6.1 presents the composition of SFAs' revenues in SY 1992-93[1]. The largest source of revenues, accounting for 47 percent of the average SFA's revenues was USDA subsidies, including meal reimbursements (39%) and the assigned value of USDA donated commodities (8%). Student payments for reimbursable meals (i.e., payments for reduced-price and full-price meals) accounted for another 35 percent of total revenues. State and local meal subsidies accounted for four percent of total revenues. Taken together, these three sources, which represent all revenues related to the sale of reimbursable meals, accounted for an average of 85 percent of total SFA revenues. A la carte sales (including adult meals and other non-reimbursable meals) represented 15 percent of the average SFA's total revenues. Other cash revenues (including such sources as interest on deposits, sale of equipment, and sales tax receipts) accounted for an average of two percent of total SFA revenues. Each of these revenue sources is discussed below.

Exhibit 6.1

Composition of SFA Revenues

Source of Revenue	Percent of SFA Revenue			SFA Sample Size[1]	
	Mean	Median	STD	Weighted	Unweighted
USDA Subsidies	46.7%	42.3%	17.2	12,937	94
Meal Reimbursements	38.5	34.1	16.3	12,937	94
Donated Commodities	8.2	7.7	2.8	12,937	94
State and Local Reimbursements	3.9	3.0	4.7	12,937	94
Student Payments for Reimbursable Meals	35.0	35.5	11.7	9,984	79[1]
A la Carte Sales[2]	15.4	11.8	10.5	9,984	79[1]
Other Cash Revenues	1.8	0.2	5.0	12,937	94

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales. The information provided for all other revenue sources combined that was available for the full sample of 94 SFAs was used in conjunction with information available for the 79 SFAs that reported student payments for reimbursable meals and a la carte sales separately to impute the following means values for the full sample:

Student Payments for Reimbursable Meals = 33%
A La Carte Sales = 14%

[2]Includes adult meals and other non-reimbursable meal sales.

[1]Frequency distributions of SFAs by the proportion of total SFA revenue received from each of these are included in Appendix E.

USDA Subsidies

USDA subsidies represented 47 percent of total SFA revenues in SY 1992-93. On average, SFAs participating in the SBP derive 52 percent of their revenue from USDA subsidies compared to only 36 percent for SFAs that only participate in the NSLP (Exhibit 6.2). Small SFAs tended to have a higher percentage of total revenues from USDA subsidies than either medium or large SFAs. The mean percent of SFA revenues derived from USDA subsidies was 55 percent for small SFAs, compared to 40 percent in medium-size and 38 percent large SFAs. The distribution of SFAs by the percent of total revenue derived from USDA donated commodities and cash subsidies is presented in Appendix E, Exhibits E.47 and E.48.

Most of the USDA subsidies consist of cash subsidies for reimbursable meals. These cash subsidies accounted for an average of 39 percent of total SFA revenues compared to an average of 8 percent for donated commodities. On average, SFAs that participate in the SBP derived considerably more of their total revenue from USDA cash subsidies (44%) than did SFAs that only participate in the NSLP (27%). This probably reflects the additional cash subsidies derived from the breakfast program. It might also reflect the fact that free and reduced-price meals have substantially higher reimbursement rates than full-price meals (see Chapter One).[2] SFAs that participate in the SBP tend to have higher concentrations of low-income children than SFAs that only participate in the NSLP. There was little difference in the proportion of total revenues derived from donated commodities (8.0% and 8.6%) between SFAs that participate in the SBP and NSLP-only SFAs. This probably reflects the fact that commodity entitlements are tied to participation in the lunch program.

Similarly, small SFAs derived more of their total revenues from USDA cash subsidies (46%) than did medium-size (32%) and large SFAs (32%). The proportion of total revenues derived from donated commodities was about the same for small, medium-size, and large SFAs. As discussed below, the difference in the proportion of total revenues derived from USDA subsidies may reflect differences in

[2]Data from the **Child Nutrition Program Operations Study** conducted by Abt Associates for the Food and Nutrition Service indicate that SFAs that participate in the SBP have a much higher proportion of children approved for free and reduced-price meals than SFAs that only participate in the NSLP. In SY 1989-90, 38 percent of SFAs that participated in the SBP were classified as "high poverty" SFAs (i.e., had at least 60 percent of their enrollment approved for free or reduced-price meals) compared to only 6 percent of SFAs that did not participate in the SBP. The higher concentration of children approved for free and reduced price meals in SFAs that participate in the SBP would therefore result in relatively higher cash subsidies for the lunch program in these SFAs.

Exhibit 6.2

USDA Subsidies as a Percent of Total SFA Revenues

	Percent of SFA Revenue									SFA Sample Size	
	Total USDA Subsidies			Meal Reimbursements			Donated Commodities				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	46.7%	42.3%	17.2	38.5%	34.1%	16.3	8.2%	7.7%	2.3	12,937	94
Participation in SBP											
NSLP and SBP	52.2	50.5	16.4	44.2	40.8	15.0	8.0	7.6	2.3	8,566	78
NSLP only	35.8	30.2	13.4	27.2	22.6	12.3	8.6	9.5	2.1	4,371	16
SFA Size											
Small (1-999)	54.7	54.1	15.5	45.5	43.7	13.8	9.2	8.2	2.1	6,327	12
Medium (1,000-4,999)	39.5	36.6	14.4	31.8	29.8	14.4	7.8	7.7	2.1	4,537	28
Large (5,000+)	37.8	33.5	17.6	31.5	28.0	18.0	6.3	6.0	1.9	2,073	54

student participation rates in the school meal programs[3]--medium-size and large SFAs derived a much higher proportion of their total revenues from a la carte sales than do small SFAs.

Student Payments for Reimbursable Meals

Student payments for free and reduced-price meals were the second largest source of SFA revenues, accounting for an average of 35 percent of total SFA revenues.[4] The distribution of SFAs by the percent of revenue derived from student payments for reimbursable meals is presented in Appendix E, Exhibit E.49. Exhibit 6.3 shows that SFAs that participate in the SBP on average derived a smaller percentage of their total revenues from student payments for reimbursable meals (31%) than NSLP-only SFAs (42%). This may also reflect the higher concentration of low-income children in SFAs that participate in the SBP. Students paying the full-price for reimbursable meals pay higher prices for these meals than students getting these meals at a reduced-price. There is, of course, no student payment for reimbursable meals taken by students approved for free meals. Small, medium-size, and large SFAs each received about one-third of their total revenues from student payments for reimbursable meals.

State and Local Reimbursements

State and local reimbursements are a relatively minor source of SFA revenue, accounting for an average of only four percent of total SFA revenues in SY 1992-93. In only 14 percent of SFAs did State and local reimbursements account for as much as six percent of total SFA revenues (Appendix E, Exhibit E.50). Exhibit 6.4 shows that there were no meaningful differences between SFAs that participate in the SBP and NSLP-only SFAs, or between small, medium-size, and large SFAs in the percentage of total revenues derived from this source.

A La Carte Sales

Sales of a la carte items and/or adult meals represented an average of 15.4 percent of total revenues.[5] Exhibit 6.5 shows that SFAs that participate in the SBP derived about the same percentage of their total

---

[3]The **Child Nutrition Program Operations Study** reported SY1989-90 participation rates of 64.5% for small districts; 60.5% for medium-size districts; and 57.0% for large districts

[4]This analysis includes only those SFAs that separately report student payments for reimbursable meals from a la carte sales.

[5]This analysis includes only those SFAs that separately report student payments for reimbursable meals from a la carte sales.

Exhibit 6.3

Student Payments for Reimbursable Meals as a Percent of Total SFA Revenues

	Percent of SFA Revenues			SFA Sample Size[1]	
	Mean	Median	STD	Weighted	Unweighted
Total	35.0%	35.5%	11.7	9,984	79
Participation in SBP					
NSLP and SBP	30.6	31.6	10.5	6,151	65
NSLP only	42.2	36.7	10.0	3,833	14
SFA Size					
Small (1-999)	32.9	35.5	10.2	4,353	8
Medium (1,000-4,999)	37.4	35.8	12.5	3,721	23
Large (5,000+)	35.4	34.8	12.6	1,909	48

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit 6.4

State and Local Reimbursements as a Percent of Total Revenues

	Percent of SFA Revenues			SFA Sample Size	
	Mean	Median	STD	Weighted	Unweighted
Total	3.9%	3.0%	4.7	12,934	94
Participation in SBP					
NSLP and SBP	4.2	3.0	5.3	8,566	78
NSLP only	3.4	3.3	3.3	4,371	16
SFA Size					
Small (1-999)	3.9	3.3	4.8	6,327	12
Medium (1,000-4,999)	4.1	3.3	3.9	4,537	28
Large (5,000+)	3.5	2.4	6.0	2,073	54

revenues from a la carte sales as NSLP-only SFAs. Large and medium-size SFAs derived a higher percentage of their revenue from a la carte sales (23% and 16% respectively) than did small SFAs (12%). A priori, there is no reason to expect differences in the relative magnitude of revenue derived from a la carte sales by SFA size. It may simply be that large and medium-size SFAs have a wider range of a la carte meal items available to students in their schools than smaller SFAs. The distribution of SFAs by the percent of revenue derived from a la carte sales is presented in Appendix E, Exhibit E.51.

Exhibit 6.5

Revenues from A La Carte Sales as a Percent of Total Revenues

	Percent of SFA Revenues			SFA Sample Size[1]	
	Mean	Median	STD	Weighted	Unweighted
Total	15.4%	11.8%	10.5	9,984	79
Participation in SBP					
NSLP and SBP	15.3	11.8	8.7	6,151	65
NSLP only	15.5	11.2	12.8	3,833	14
SFA Size					
Small (1-999)	11.7	10.4	5.7	4,353	8
Medium (1,000-4,999)	15.8	17.5	10.7	3,721	23
Large (5,000+)	23.0	24.0	13.8	1,909	48

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Other Cash Revenues

As described above, other cash revenues include such items as interest on deposits, sale of equipment, and sales tax receipts. As expected, it accounts for a very small proportion of total SFA revenues (a mean of 2%). Three-quarters of all SFAs derive less than one percent of their revenues from other cash sources, and only 12 percent of all SFAs derive as much as 3 percent of their total revenues from this source (Appendix E, Exhibit E.52).

COMPARISON OF REVENUE AND COST

SFAs are required to operate on a non-profit basis. In general, school districts expect SFAs to operate on a break-even basis, with SFA revenues covering their reported costs. However, the possibility exists for cost shifting between reimbursable and non-reimbursable meals. To the extent that revenues received from serving reimbursable meals exceed the cost of producing those meals, SFAs may be viewed as cross-subsidizing non-reimbursable meals. Similarly, if revenues from reimbursable meals fall short of their costs, the SFA may be viewed as subsidizing the cost of reimbursable meals. This section compares SFA revenues to reported costs. Three comparisons are made:

- total SFA revenues to total reported costs;
- total revenues derived from serving reimbursable meals to the total reported cost of producing those meals; and
- total revenues derived from non-reimbursable meals (a la carte sales) to the total cost of producing those meals.

Total SFA Revenues Compared With Total Reported Costs

Exhibit 6.6 compares total SFA revenues with total reported costs. SFAs appear to be operating at the break-even level. On average, total SFA revenues are equal to 100 percent of total SFA reported costs.

Exhibit 6.6

Total SFA Revenues as a Percent of Total Reported Cost

	Revenue as a Percent of Cost			SFA Sample Size	
	Mean	Median	STD	Weighted	Unweighted
Total	99.8%	100.0%	13.9	12,937	94
Participation in SBP					
NSLP and SBP	99.4	100.8	16.5	8,566	78
NSLP only	100.8	99.3	5.9	4,371	16
SFA Size					
Small (1-999)	97.1	100.8	17.5	6,327	12
Medium (1,000-4,999)	101.2	98.8	8.3	4,537	28
Large (5,000+)	105.1	104.3	8.2	2,073	54

In 71 percent SFAs, total SFA revenues are between 90 and 110 percent of total reported costs (Appendix E, Exhibit E.53). Although, as noted in Chapter Three, the cost of producing a reimbursable breakfast exceeds the reimbursement rate for free breakfasts, participation in the SBP does not appear to affect SFAs' ability to operate at the break-even level. This is discussed below in the context of revenues from reimbursable meals.

While small and medium-size SFAs appear to be operating at about the break-even level (median ratio of total revenue to total reported costs of 101 and 99 percent respectively), it appears that the revenues of large SFAs slightly exceeded total reported costs (median revenue: reported cost ratio of 104 percent).

Total Revenues From Reimbursable Meals Compared With Reported Reimbursable Meal Costs

Exhibit 6.7 compares the revenues obtained from serving reimbursable meals (lunches and breakfasts combined) to the total reported cost of producing those meals.[6] For the average SFA, revenues from

Exhibit 6.7

Total Revenues from Reimbursable Meals as a Percent of the Total Reported Cost of Producing Reimbursable Meals

	Revenues as a Percent of Cost			SFA Sample Size[1]	
	Mean	Median	STD	Weighted	Unweighted
Total	112.6%	108.2%	24.8	9,984	79
Participation in SBP					
NSLP and SBP	114.4	106.7	28.1	6,151	65
NSLP only	109.8	111.5	18.0	3,833	14
SFA Size					
Small (1-999)	108.1	107.7	18.3	4,353	8
Medium (1,000-4,999)	116.9	111.5	32.2	3,721	23
Large (5,000+)	114.5	113.4	18.4	1,909	48

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

[6]This analysis includes only those SFAs that separately report student payments for reimbursable meals from a la carte sales. The distribution of SFAs by the revenue:cost ratio for reimbursable meals is presented in Appendix E, Exhibit E.54.

reimbursable meals exceeded the reported cost of producing those meals. The mean revenue:cost ratio for reimbursable meals was 113 percent in SY 1992-93 (the median was 108). Although it was not possible in this study to separate revenues derived from reimbursable breakfasts from revenues from reimbursable lunches, it appears that revenues from reimbursable lunches are cross-subsidizing the costs of producing reimbursable breakfasts. As noted in Chapter Three, the average reported cost of producing a reimbursable lunch was less than the Federal subsidy for a free lunch, while the average reported cost of producing a reimbursable breakfast exceeded the Federal subsidy for a free breakfast. Since total revenues derived from reimbursable meals exceed the cost of producing those meals, it appears that reimbursable lunches generate a surplus that can be used to offset losses generated from reimbursable breakfasts.[7]

Total Revenues From Non-reimbursable Meals Compared With Reported Non-Reimbursable Meal Costs

Exhibit 6.8 compares the revenues from a la carte sales (including adult meals and other non-reimbursable meals) to the total reported cost of producing these meals.[8] On average, revenues from a la carte sales fall short of the reported cost of non-reimbursable meal costs. The mean revenue: cost ratio for non-reimbursable meals was 71 percent in SY 1992-93 (median equals 65 percent). A la carte revenues fell short of reported non-reimbursable meal costs in SFAs that participated in the SBP as well as NSLP-only SFAs. Similarly, on average, small, medium-size, and large SFAs all failed to break even on non-reimbursable meals. Since, overall SFAs are operating at the break-even level, it appears that the surplus generated from reimbursable lunches not only offsets losses from reimbursable breakfasts, but also offsets losses from non-reimbursable meals.

---

[7]Since most SFAs serve substantially more reimbursable lunches than reimbursable breakfasts, a small surplus on each reimbursable lunch can offset a much larger loss on each reimbursable breakfast.

[8]This analysis includes only those SFAs that separately report student payments for reimbursable meals from a la carte sales. The distribution of SFAs by the revenue:cost ratio for non-reimbursable meals is presented in Appendix E, Exhibit E.55.

Exhibit 6.8

Total Non-reimbursable Revenues as a Percent of Total Reported Non-Reimbursable Costs

	Revenue as a Percent of Cost			SFA Sample Size[1]	
	Mean	Median	STD	Weighted	Unweighted
Total	70.5%	64.9%	40.2	9,984	79
Participation in SBP					
NSLP and SBP	79.8	79.4	44.1	6,151	65
NSLP only	55.8	64.5	27.3	3,833	14
SFA Size					
Small (1-999)	77.4	64.5	50.3	4,353	8
Medium (1,000-4,999)	57.9	61.7	25.5	3,721	23
Large (5,000+)	79.6	84.2	30.6	1,909	48

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Appendix A

Sample Design

Appendix A

Sample Design

INTRODUCTION

The primary objective of the sample design for the School Lunch and Breakfast Cost Study was to estimate the mean reported cost along with the mean full cost of producing a reimbursable lunch and the national mean reported and full cost of producing a reimbursable SBP breakfast. A secondary objective was to provide separate estimates for types of four meal production systems:

- On-site kitchen only;
- Base or central kitchens with satellites only;
- Other combination - mostly on-site kitchens; and
- Other combination - mostly satellite kitchens.

It was desired that the cost estimates be expressed in two forms. In the first form, the unit of analysis is the SFA. In the second form, the unit of analysis is the size-weighted district. In other words, districts with higher numbers of lunches and breakfasts have a greater weight in the calculation of the mean cost. The estimation methods for accomplishing this are discussed in Appendix B which presents the weighting methodology.

To accomplish these objectives, a national sample of SFAs was first drawn, and a telephone survey conducted to obtain information such as meal production system. A meal production system stratified subsample (i.e., a second-phase sample) was then drawn from the initial sample of SFAs (i.e., the first-phase sample). SFAs in the subsample were recruited to participate in the study. For those SFAs participating, a listing of schools was obtained, and a sample of schools was drawn for each SFA. On-site observations were then made at the sample schools and other required information was collected from the SFA. The collected data was then used to produce SFA level production cost figures. These SFA production cost figures were used to form weighted national estimates of mean lunch and breakfast production costs and for the four meal production systems categories shown above.

THE SAMPLE OF SFAS

The target population for the sample of public SFAs covered the 48 contiguous States and the District of Columbia. A school district universe data file was obtained from Quality Education Data (QED). The QED file contains district identification information and variables such as student enrollment and the Orshansky poverty index for approximately 14,500 public school districts.

The optimum measure of size for the selection of a national probability proportional to size (PPS) sample of SFAs was considered to be total reimbursable lunches. This variable is however not available in the QED data file. A predicted measure of size was therefore developed for each school district in the universe. This was accomplished be creating an Ordinary Least Squares (OLS) regression equation based on the 1,124 year-three SFAs in the Child Nutrition Program Operations (CNPO) Study.[1] These data reflect SFA operations for SY 1990-91. Total lunches was regressed on student enrollment and the Orshansky poverty index. The coefficients of the regression equation were then used to assign a predicted measure of size to each school district in the QED universe.

A stratified PPS sample of 985 districts was then drawn by Abt Associates. The frame was ordered by the four Census Regions, and then by Metropolitan Statistical Area (MSA) district versus non-MSA district. The districts were then sorted by the predicted measure of size. Forty-eight districts had a predicted measure of size large enough to make them certainty selections. The remaining districts were then divided into 937 non-selfrepresenting strata of approximately equal size with respect to the sum of the predicted measure of size. One district was then selected from each non-selfrepresenting stratum with probability proportional to size.

The sample of 985 districts was then contacted by telephone to obtain information on types of meal production systems, participation in the NSLP and SBP, and actual number of lunches and breakfasts served in SY 1991-92. In the telephone survey, an effort was made to identify districts that did not have a one-to-one correspondence with an SFA; none were found. Interviews were completed with 924 SFAs (94% response rate). The 898 SFAs with over 10,000 lunches were retained for possible inclusion in the second-phase sample of SFAs discussed next.

---

[1]The CNPO Study was conducted by Abt Associates for FNS between 1987 and 1992. The study conducted annual surveys of SFA directors in 1989, 1990, and 1991 to collect information on the previous year's food service operations.

It was recognized that the predicted measure of size was an approximation, subject to error, of the actual number of lunches served. Therefore rather than drawing the second-phase sample of SFAs with equal probability within the strata described below, it would be more optimal to use a PPS sampling procedure. The ratio of the actual to predicted lunch count was therefore used as the measure of size for the second-phase sample.

Before drawing the second-phase sample of SFAs, the 898 SFAs were stratified into eight strata: the four meal production systems by participation in the NSLP and SBP versus participation only in the NSLP. This scheme was used for two reasons. First, it made it possible to control the sample size of SFAs for each of the four meal production system categories. Second, for each meal production system category, it allowed for the oversampling of SBP SFAs in relation to the NSLP-Only SFAs.

The desired sample size of SFAs for the analysis was set at 100. This sample size was determined from an analysis of the variance encountered in a small pilot study of SFAs conducted by Abt Associates. As noted earlier, the primary objective of the study was to provide national mean production cost estimates for lunches and breakfasts.

A random system of primary and backup SFAs was set up for each of the eight cells of the four by two classification. The very large SFAs that were included in the first-phase SFA sample with certainty were all treated as primary selections for the second-phase sample. The recruitment process involved repeated contacts with SFA and school district officials (the results are summarized in Exhibit A-1). First, SFA directors were contacted by telephone. During this initial contact study staff explained the objectives of the study and briefly explained what participation would entail. Of the 120 SFAs that refused to participate in the study, 25 refused at this initial contact. Reasons cited ranged from the fact that the SFA was already participating in another study; SFA staff did not have the time; or some change was taking place in the SFA which precluded participation (e.g., the school district was switching over to a food service management company).

Following the initial contact, a more detailed description of the study, including a description of what would be expected of participating SFAs, was sent to each remaining SFA. A followup call was made to SFA directors after they had had a chance to review these materials. Forty eight SFAs refused to participate after reviewing the materials and discussing participation at greater length with study staff. Reasons cited were similar to those of the initial refusals, primarily limited staff availability and lack of interest in the study.

Exhibit A-1

Final Disposition of SFAs Contacted During Recruitment

Disposition Status	Number of Districts
Total SFAs Contacted	218
Agreed to Participate	98
Refused to Participate	120
SFA Director Refused at Initial Contact	25
SFA Director Refused After Reviewing Study Materials	48
Superintendent/School Board Would Not Permit District to Participate	43
SFA Agreed to Participate, But Dropped Out During Planning Process	9

For SFAs that were interested in participating in the study, it was necessary to obtain the approval of the superintendent of schools and/or the school board before finalizing an SFA's participation. In a total of 43 SFAs, the superintendent of schools or school board would not permit the district to participate in the study despite the expressed interest of the SFA director. Reasons cited typically included the burden that the study would place on the school district.

Finally, nine SFAs that had agreed to participate (and had obtained superintendent/school board approval) dropped out of the study during the planning process. Food service directors in these districts indicated that they did not realize the amount of work that was involved and did not have the time to dedicate to this study. Exhibit A-2 shows the distribution of the 94 districts used in the analysis by their participation in the SBP and meal production systems.

THE SAMPLE OF SCHOOLS AND KITCHENS WITHIN SFAS

Sampling SFAs was not sufficient for the conduct of the School Lunch and School Breakfast Cost Study. Districts may contain combinations of several different school and kitchen types -- central kitchens, on-site kitchen schools, base kitchen schools, and satellite schools. The school also served as a natural sampling unit for the observation of a sample of reimbursable lunches and breakfasts in order to observe

Exhibit A-2

Distribution of the Final Sample of 94 SFAs by Participation in the SBP and Meal Production System

Production System	Participation in the SBP		
	NSLP and SBP	NSLP only	Total All SFAs
On-site kitchen only	27	7	34
Base/Central only	19	4	23
Mostly on-site kitchen	18	4	22
Mostly satellite kitchen	14	1	15
Total All SFAs	78	16	94

meal content. At the sample schools, lunches taken and if applicable, breakfasts taken over a five day period were observed. In a five day period, it is feasible to observe approximately 1,000 lunches taken in a school, and if applicable, 250 breakfasts. These factors made it necessary to select a sample of schools/kitchens from each of the 94 SFAs.

Using information on within SFA variances from a small pilot study conducted by Abt Associates, the sample size of schools/kitchens per SFA was set to achieve a coefficient of variation (CV) at the 95 percent confidence level (i.e., 2 * CV), of five percent for the mean production cost for lunches as well as for breakfasts, if applicable. The objective of this component of the study was to attempt to ensure that SFA level cost figures were subject to a very small degree of sampling error (coefficient of variation = 2.5%).

Before discussing the selection of the sample schools, some other constraints on the sample of schools/kitchens are discussed. First, The total sample size of schools/kitchens was originally estimated at around 575 (i.e., a mean of 5.75 per SFA). This number became a total not to be exceeded by any significant amount due to the time in the field and associated field cost problems this would have introduced. Second, it was almost always necessary to set the sample size of schools/kitchens per SFA at an even number to allow for maximum productivity of the field staff.[2] Third, schools that were

[2]Field staff were each assigned to collect data in two schools. One week was spent at each school. This reduced the number of field staff that had to be recruited and trained.

satellites could not be independently sampled. The data collection methodology required that a sample of base kitchens first be drawn, and then sampling one or more satellite schools from the selected based kitchen school. In other words, a two-stage sampling procedure was used. If a base kitchen school was to be observed for one week then one satellite school would be drawn. If the base kitchen school was to be observed for two weeks, the two satellite schools would be drawn - one for each week. Fourth, central kitchens were always sampled with certainty.

The selection of the sample schools was customized to the situation in each district. Each participating SFA provided a listing of its schools/kitchens with lunch and breakfast counts. The schools/kitchens were first sorted into NSLP-Only versus SBP schools (in the SFAs that participated in both the NSLP and SBP). In the NSLP-Only school/kitchen stratum, a PPS sample of schools/kitchens was drawn using number of lunches as the measure of size. In the SBP school/kitchen stratum, the measure of size for the PPS sampling was number of breakfasts.

During the on-site data collection, it was sometimes necessary to delete some schools from the sample for a given SFA due to staffing problems. It was also discovered that on occasion a school was classified incorrectly in terms of their participation in the SBP. Still in other situations, the meal counts used for the PPS sampling turned out to be in error.

SUMMARY

The sampling of SFAs and schools/kitchens was carried out using probability sampling procedures. Although difficulties were encountered in recruiting SFAs to participate, the weighting methodology discussed next was designed to reduce nonparticipation bias. The sampling of schools within SFAs was also carried out fairly successfully. Some problems were encountered with the completeness and accuracy of the school lists provided by the 94 SFAs, although this was not significant in nature. As discussed below, it was also necessary to weight the sample of schools within each SFA so that the SFA level costs figures could be produced.

Appendix B

Weighting Methodology

Appendix B

Weighting Methodology

INTRODUCTION

The analysis for the School Lunch and Breakfast Cost Study required that weights be applied to the data. There are two types of weights in this study. The first type of weight is a within-SFA school/kitchen weight. It allowed for the calculation of SFA level cost figures based on the data collected within each SFA. The second type of weight is an SFA weight. The purpose of this weight is to allow for the calculation of the mean cost estimates for each of the four meal production systems, for all SFAs combined, and for subclasses such as size of SFA. The weight factors are included in the analytic data files developed for this study. Data users need to take the weights into account in any analysis of the data.

SCHOOL/KITCHEN WEIGHTS

As discussed in the sample design section, Abt Associates sampled schools/kitchens within each of the 94 SFAs used in the analysis. Schools/kitchens were sampled using probability sampling methods such as PPS sampling (e.g., to select a sample of on-site school/kitchens), equal probability sampling (e.g., to select a satellite school from a base kitchen school), and take-all sampling (e.g., if an SFA only had two schools, both would have been selected). Records of the sampling that took place in each SFA were maintained, and this information was used to compute the probability of selection of each school/kitchen that was sampled and observed. The school/kitchen weight equaled the reciprocal of the probability of selection of the school/kitchen. The school/kitchen weights were then used to compute SFA level cost figures.

SFA WEIGHTS

The calculation of the SFA weights involved several steps due to the need to account for the SFA selection probabilities at the first-phase sample and the subsample of SFAs drawn for the second-phase sample. The weighting methodology also incorporates nonresponse adjustments carried out by a post-stratification procedure. Finally, it was necessary to produce both SFA level weights and SFA level weights that took meal count volume into account. This provided for the analytic option of producing SFA mean cost estimates or SFA mean cost estimates weighted by meal count volume. The latter type

of estimate gives SFAs with large numbers of meals a greater contribution to the overall estimate of mean cost. The calculation of SFA weights involved four steps. Each is discussed below.

Step One

The first step in the weighting methodology involved computing an SFA weight for each of the 924 SFAs that responded to the brief telephone survey conducted by Abt Associates. For certainty SFAs this weight equalled one. For the remaining noncertainty SFAs the weight equalled the sum of the predicted number of lunches for the stratum the SFA was located in divided by the predicted number of lunches for that SFA. All certainty SFAs responded to the telephone survey, making it unnecessary to carry out a unit nonresponse adjustment to the weights. For the noncertainty SFAs, there was a low degree of unit nonresponse. To adjust for this, the weights of the noncertainty SFAs that responded to the telephone survey were multiplied by 1.0706. This factor equals the ratio of the total predicted lunches for all sample noncertainty SFAs to the total predicted lunches for the noncertainty SFAs that responded to the telephone survey.

Step Two

A total of 278 of the 898 first-phase sample SFAs, with over 10,000 lunches for the school year reported in the telephone survey, were selected into the second-phase SFA sample. This sample was stratified into eight cells - the four meal production system categories by participation in the NSLP and SBP versus NSLP only. All of the large certainty SFAs in the phase one sample were included in the phase-two sample. The SFA weight of these SFAs in step two therefore remained at one. For the noncertainty SFAs, the weight at step two equalled the step one SFA weight times the reciprocal of the probability of selection in the phase two sample. Recall that the probability of selection in the phase two sample was determined by which of the eight cells the SFA fell into, and within that cell by the ratio of the actual number of lunches to the predicted number of lunches. The weights were then ratio-adjusted by cell and certainty versus noncertainty status so that the weighted count of SFAs at step two equalled the weighted count at step one. The weighted count of SFAs by cell is shown in Exhibit B.1.

Exhibit B.1

Weighted Count of SFAs by Cell

Cell	Weighted Count of SFAs		
	Certainty	Noncertainty	All SFAs
On-site kitchens only - SBP	7	4,560	4,567
Base or central kitchens with satellites - SBP	4	985	989
Other combination - mostly on-site kitchens - SBP	22	621	643
Other combination - mostly satellite kitchens - SBP	13	982	995
On-site kitchens only - NSLP Only	0	3,342	3,342
Base or central kitchens with satellites - NSLP Only	1	1,579	1,580
Other combination - mostly on-site kitchens - NSLP Only	0	257	257
Other combination - mostly satellite kitchens - NSLP Only	1	563	564
Total All SFAs	48	12,889	12,937

Step Three

Ninety-four of the 278 SFAs agreed to participate in the study and are included in the analytic data file. For the sixteen cells shown in the above table, the weighted total count of SFAs was calculated, using the weights derived in Step Two, for the 94 SFAs. The ratio of the weighted total count of SFAs in each of the sixteen cells (from the above table) to the weighted total count based on the 94 SFAs was then computed. The weights of the 94 SFAs were multiplied by the appropriate cell ratio adjustment factor. The objective of this adjustment was to compensate for differential participation rates across the sixteen cells, and can therefore be viewed as a unit nonresponse adjustment step.

Step Four

This was the final step of the weighting methodology. It is essentially a post-stratification adjustment procedure carried out by the using an iterative raking procedure to derive the final weights for the

analysis. The primary objective was to compensate for unit nonresponse in an effort to reduce nonresponse bias in the sample of 94 participating SFAs. Three control variables were selected for the raking procedure - the four Census Regions, the four meal production system categories, and four SFA size categories using predicted number of lunch quartiles. The control totals came from the sample of 898 SFAs that responded to the telephone survey and reported over 10,000 lunches for the school year. This large sample was used to provide weighted marginal control total distributions for the three variables listed above. Control totals were produced for 1) all SFAs and 2) SBP SFAs. Each of the 898 SFAs also reported total lunches for the school year and if applicable, total breakfasts for the school year. Weighted control total distributions were also computed for these meal count variables - the weighted distribution of lunches by the categories for each of the three variables, and the weighted distribution of breakfasts by the categories of each of the three variables. Four separate iterative raking procedures were then carried out on the sample of 94 participating SFAs. The raking procedure forced the weighted distribution of this smaller sample into agreement with the control totals. To the extent nonresponse bias is associated with Census region, meal production system cell, and size of SFA, the raking procedure yielded post-stratified weights that reduced this bias. The final step in the weighting methodology therefore resulted in four weight factors:

- an SFA-level weight that applies to all 94 SFAs;
- an SFA-level weight that applies to all SBP SFAs;
- a lunch weighted SFA-level weight that applies to all 94 SFAs; and
- a breakfast weighted SFA-level weight that applies to all SBP SFAs.

Weights one and two were used to produce SFA level estimates of mean cost. Weights three and four were used to produce lunch and breakfast volume weighted SFA mean cost estimates.

Appendix C

Estimates of Reported and Full Costs by Type of Meal Production System

Appendix C

Estimates of Reported and Full Costs by Type of Meal Production System

The primary objective of the School Lunch and Breakfast Cost Study is to produce reliable national estimates of the average reported and full cost of producing reimbursable meals in the NSLP and SBP. Because it was anticipated that meal production costs might vary by the type of meal production/ distribution system used by SFAs, a secondary objective of the study is to develop separate estimates of meal costs for each meal production system. This appendix presents estimates of reported and full costs by type of meal production system. It should be noted that, although the study design permits the reliable estimation of costs for each type of meal production system, the sample sizes are too small to provide adequate statistical power to detect differences between the different meal production systems. Appendix D presents the results of a regression analysis that examines differences in the reported and full cost of producing reimbursable meals. The regression models provide additonal statistical power to detect differences between the different meal production systems.

ESTIMATES OF REPORTED COST BY TYPE OF MEAL PRODUCTION SYSTEM

Reported Cost per Reimbursable Lunch

Exhibit C.1 presents estimates of the average reported cost of producing reimbursable lunches for each of the meal production systems together with the 95 percent confidence intervals for these estimates. The estimates are presented using both the SFA and the NSLP lunch as the unit of analysis. More than one half of all SFAs (60 percent) use only on-site meal production (i.e., all meals are produced in the schools in which they are served). Among SFAs that only use on-site production, the average reported cost of producing a reimbursable lunch in SY 1992-93 was $1.61, with a confidence interval of ±$0.10. When the unit of analysis was the reimbursable lunch, the average reported cost of producing a lunch (in SFAs that only use on-site meal production) was $1.63, with a confidence interval of ±$0.10.

Approximately 16 percent of SFAs use a system where all meals are produced in base or central kitchens and shipped to satellite kitchens in the schools where the meals are served.[1] Within this type of meal production/distribution system there appear to be two groups of SFAs. One group consists of relatively small school districts where meals are produced in a base kitchen (located in one of the schools) and

Exhibit C.1

Total Reported Cost per Reimbursable Lunch

	Unit of Analysis is SFA		Unit of Analysis is NSLP Lunch		SFA Sample Size	
	Mean	95% Confidence Interval	Mean	95% Confidence Interval	Weighted	Unweighted
Total SFAs	$1.64	± .07	$ 1.69	± .06	12,937	94
Production System						
On-Site kitchen only	1.61	± .10	1.63	± .10	7,748	34
Base/Central only	1.59	± .16	1.78	± .11	2,056	23
Mostly on-site kitchen	1.82	± .15	1.75	± .12	1,286	22
Mostly satellite	1.71	± .17	1.66	± .16	1,847	15

shipped to a relatively small number of satellite schools. The second group consists of relatively large school districts with large central kitchens that produce meals for a very large number of satellite schools. The estimated cost per reimbursable lunch reflects the heterogeneity within this type of meal production/distribution system. When the unit of analysis is the SFA, the average reported cost of producing a reimbursable lunch was $1.59, with a confidence interval of ±$0.16. However, when the unit of analysis was the NSLP lunch, the average reported cost of producing a reimbursable lunch was

[1]The amount of additional meal production that takes place in the satellite kitchens varies. At one extreme the satellite kitchen simply serves the meals delivered from the base or central kitchen, while at the other extreme, in addition to serving menu items produced at the base or central kitchen, some menu items are produced from scratch at the satellite kitchen.

$1.78, with a confidence interval of ±$0.11. This difference appears to reflect the difference in unit costs between the two groups of SFAs that fall within this type of production system. The many small SFAs with a base kitchen and a few satellite schools tend to have lower unit costs than the few large SFAs with central production facilities and many satellite schools. Across SFAs, the average reported cost of an NSLP lunch ($1.59) reflects the lower reported costs of the many small SFAs using this type of production system. The higher reported costs in the few large districts that serve large numbers of meals increased the average reported cost to $1.78 when the NSLP lunch was the unit of analysis.

The remaining two types of meal production systems represent combinations of on-site production and base/central kitchens with satellite schools. The first combination system consists of SFAs where most of the schools have on-site meal production, but some schools are satellites of base/central kitchens. The second combination system includes SFAs where most of the schools are satellites of base/central kitchens, but some schools have on-site meal production. Together these combination systems are used by 24 percent of SFAs. The average reported cost per reimbursable lunch was $1.82 (±$0.15) in SFAs with mostly on-site kitchens and $1.71 (±$0.17) in SFAs with mostly satellite schools. When the unit of analysis was the NSLP lunch, the average reported costs were $1.75 (±0.12) and $1.66 (±$0.16) respectively.

Reported Cost per Reimbursable Breakfast

Exhibit C.2 presents the breakfast cost estimates and confidence intervals for each of the four meal production systems. Approximately 58 percent of SFAs with a breakfast program use on-site production. Among these SFAs, the mean reported cost of producing a reimbursable breakfast was $1.07 (±$0.09) in SY 1992-93. The mean cost was $1.07 (±$0.09) when the unit of analysis was the SBP breakfast.

Only 13 percent of SFAs with a breakfast program use the base/central kitchen with satellite schools production system. However, the estimated mean reported breakfast cost for these SFAs appears to be extraordinarily high-- $2.22 (±$0.39). The estimate reflects the influence of small SFAs with small/very high cost breakfast programs.[2] When the SBP breakfast was the unit of analysis, the effect of the small high cost breakfast programs decreased, reducing the average cost of a reimbursable breakfast to $1.40 (±$0.25).

---

[2]In the unweighted sample of 19 SFAs, one SFA with a weight of 447 had reported costs of $3.00 per reimbursable breakfast. The breakfast program was very small with relatively high labor costs. This SFA has since discontinued it breakfast program because of very low participation and its high costs.

Exhibit C.2

Total Reported Cost per Reimbursable Breakfast

	Unit of Analysis is SFA		Unit of Analysis is SBP Breakfast		SFA Sample Size	
	Mean	95% Confidence Interval	Mean	95% Confidence Interval	Weighted	Unweighted
Total SFAs	$1.27	± .13	$1.11	± .06	8,516	78
Production System						
On-Site kitchen only	1.07	± .09	1.07	± .09	4,980	27
Base/Central only	2.22	± .39	1.40	± .25	1,102	19
Mostly on-site kitchen	1.85	± .30	1.16	± .12	727	18
Mostly satellite	1.02	± .12	1.04	± .13	1,707	14

Relatively few SFAs (9 percent) with a breakfast program use a combination system with mostly on-site kitchens. Among these SFAs the mean reported cost of an SBP breakfast was $1.85 (±$0.30). Again, when the SBP breakfast was the unit of analysis the mean reported cost per breakfast was considerably lower-- $1.16 (±$0.12) -- reflecting the lower unit cost in the SFAs that serve large numbers of reimbursable breakfasts.

Twenty percent of SFAs with a breakfast program use a combination system with mostly satellite schools. The mean reported cost of a reimbursable breakfast among these SFAs was $1.02 (±$0.12). When the SBP breakfast was the unit of analysis the mean cost was $1.04 (±$0.13).

ESTIMATES OF FULL COST BY TYPE OF MEAL PRODUCTION SYSTEM

Full Cost per Reimbursable Lunch

Exhibit C.3 presents estimates of the average full cost of producing reimbursable lunches for each of the meal production systems along with the 95 percent confidence intervals for these estimates. The estimates are presented using both the SFA and the NSLP lunch as the unit of analysis. More than one half of all

Exhibit C.3

Total Full Cost per Reimbursable Lunch

	Total Full Cost per Reimbursable Lunch				SFA Sample Size	
	Unit of Analysis is SFA		Unit of Analysis is NSLP Lunch			
	Mean	95% Confidence Interval	Mean	95% Confidence Interval	Weighted	Unweighted
Total SFAs	$2.14	± .19	$ 1.95	± .09	12,934	93
Production System						
On-Site kitchen only	1.96	± .14	1.86	± .13	7,747	34
Base/Central only	1.78	± .18	1.93	± .15	2,054	22
Mostly on-site kitchen	2.33	± .23	2.05	± .20	1,286	22
Mostly satellite	3.18	± .99	1.98	± .28	1,847	15

SFAs (60 percent) use only on-site meal production (i.e., all meals are produced in the schools in which they are served). Among these SFAs, the average full cost of producing a reimbursable lunch in SY 1992-93 was $1.96, with a confidence interval of ±$0.14. When the unit of analysis is the reimbursable lunch, the average full cost of producing a lunch was $1.86, with a confidence interval of ±$0.13. This reflect the large number of lunches that are served in SFAs where costs where relatively lower.

Approximately 16 percent of SFAs use a system where all meals are produced in base or central kitchens and shipped to satellite kitchens in the schools where the meals are served.[3] Within this type of meal production/distribution system there appears to be two groups of SFAs. One group consists of relatively small school districts where meals are produced in a base kitchen (located in one of the schools) and shipped to a relatively small number of satellite schools. The second group consists of relatively large school districts with large scale central kitchens that produce meals for a very large number of satellite schools.

The estimated cost per reimbursable lunch reflects the heterogeneity within this type of meal production/distribution system. When the unit of analysis is the SFA, the average full cost of producing a reimbursable lunch was $1.78, with a confidence interval of ±$0.18. However, when the unit of analysis is the NSLP lunch, the average full cost of producing a reimbursable lunch was $1.93, with a confidence interval of ±$0.15. This difference appears to reflect the variation in unit costs between the two groups of SFAs that fall within this type of production system. The many small SFAs with a base kitchen and a few satellite schools tend to have lower unit costs than the few large SFAs with central production facilities and many satellite schools. Across SFAs, the average full cost of an NSLP lunch ($1.78) reflects the lower costs of the many small SFAs using this type of production system. The higher full costs in the few large districts that serve large numbers of meals increases the average full cost to $1.93 when the NSLP lunch is the unit of analysis.

The remaining two types of meal production systems represent combinations of on-site production and base/central kitchens with satellite schools. The first combination system consists of SFAs where most of the schools have on-site meal production, but some schools are satellites of base/central kitchens. The second combination system includes SFAs where most of the schools are satellites of base/central kitchens, but some schools have on-site meal production. Together these combination systems are used by 24 percent of SFAs. The average full cost per reimbursable lunch was $2.33 (±$0.23) in SFAs with mostly on-site kitchens and $3.18 (±$0.99) in SFAs with mostly satellite schools. The extremely high average cost for the latter group of SFAs reflects the influence of small SFAs with small, very high cost food service programs (see Chapter 4, footnote 14). When the unit of analysis is the NSLP lunch, the average full costs are $2.05 (±0.20) and $1.98 (±$0.28) respectively.

---

[3]The amount of additional meal production that takes place in the satellite kitchens varies. At one extreme the satellite kitchen simply serves the meals delivered from the base or central kitchen, while at the other extreme, in addition to serving menu items produced at the base or central kitchen, some menu items are produced from scratch at the satellite kitchen.

Full Cost per Reimbursable Breakfast

Exhibit C.4 presents the breakfast cost estimates and confidence intervals for each of the four meal production systems. Approximately 60 percent of SFAs with a breakfast program use on-site production. Among these SFAs, the average full cost of producing a reimbursable breakfast was $1.33 (±$0.11) in SY 1992-93. The average cost was $1.21 (±$0.11) when the unit of analysis is the SBP breakfast.

Exhibit C.4

Total Full Cost per Reimbursable Breakfast

	Total Full Cost per Reimbursable Breakfast				SFA Sample Size	
	Unit of Analysis is SFA		Unit of Analysis is SBP Breakfast			
	Mean	95% Confidence Interval	Mean	95% Confidence Interval	Weighted	Unweighted
Total SFAs	$1.67	± .17	$1.28	± .08	8,514	77
Production System						
On-Site kitchen only	1.33	± .11	1.21	± .11	4,980	27
Base/Central only	2.54	± .49	1.58	± .29	1,100	18
Mostly on-site kitchen	2.29	± .37	1.36	± .15	727	18
Mostly satellite	1.82	± .38	1.21	± .21	1,707	14

Only 13 percent of SFAs with a breakfast program use the base/central kitchen with satellite schools production system. However, the estimated average full cost of breakfasts for these SFAs appears to be extraordinarily high-- $2.54 (±$0.49). The estimate reflects the influence of small SFAs with small, very high cost breakfast programs.[4] When the SBP breakfast is the unit of analysis, the effect of the

[4]In the unweighted sample of 18 SFAs, one SFA with a weight of 447 had full costs of $3.60 per reimbursable breakfast. The breakfast program was very small with relatively high labor costs. This SFA has since discontinued it breakfast program because of very low participation and its high costs.

small high cost breakfast programs decreases, reducing the average cost of a reimbursable breakfast to $1.58 (±$0.29).

Relatively few SFAs (9%) with a breakfast program use a combination system with mostly on-site kitchens. Among these SFAs the average full cost of an SBP breakfast was $2.29 (±$0.37). Again, when the SBP breakfast is the unit of analysis the average full cost per breakfast was considerably lower--$1.36 (±$0.15) -- reflecting the lower unit cost in the SFA that serve large numbers of reimbursable breakfasts.

Twenty percent of SFAs with a breakfast program use a combination system with mostly satellite schools. The average full cost of a reimbursable breakfast among these SFAs was $1.82 (±$0.38). When the SBP breakfast is the unit of analysis the mean cost was only $1.21 (±$0.21).

Appendix D

Regression Models for Reported and Full Cost per Reimbursable Meal

Appendix D

Regression Models for Reported and Full Cost per Reimbursable Meal

---

As discussed in Chapter Four, the sample size for this study does not provide adequate statistical power to detect differences in costs among meal production systems. Multivariate analysis has the potential to generate more precise estimates, as well as to shed light on other determinants of costs. Linear regression models were therefore estimated for four dependent variables:

- reported cost per reimbursable breakfast;
- reported cost per reimbursable lunch;
- full cost per reimbursable breakfast; and
- full cost per reimbursable lunch.

Because the models were unweighted, the results are not comparable with results based on weighted means. Not only are the overall and group means different, but the standard errors are lower when unweighted data are used. The regressions should therefore be interpreted as a description of the particular districts that were selected[1], and not generalized to the nation as a whole.

The following explanatory variables were considered for inclusion in the models:

- Indicators of the type of production system (e.g., on-site kitchens only).
- District enrollment, expressed as a categorical variable (under 1,000 students, 1,000 to 5,000 students, over 5,000 students).
- Alternatively, size of the breakfast and lunch programs, in terms of number of reimbursable meals served per year, expressed as categorical variables (more than versus less than 300,000 breakfasts served; more than versus less than 500,000 lunches served).
- Presence of a breakfast program (in the lunch equation only).

---

[1]Ninety-four districts were included in the reported cost analysis. One district was dropped from the full cost analysis due to lack of indirect cost data.

- Indicators of the geographical region in which the district was located (Midwest, West, Northeast, South).

- Two measures of resource costs, taken from the Statistical Abstract of the United States: monthly wage of local government workers in 1991 in a given State, and index of cost of food in 1992 in a given region.

- Indicators of urbanicity of the school district (urban, suburban, rural).

- Cost per enrolled student of all nonreimbursable meals.

Ceteris paribus, it was expected that meal costs would be higher in districts which had smaller programs (because of the likelihood of substantial fixed costs), and in places where labor and food costs were generally higher. It was expected that the presence of a breakfast program would lower the cost of lunches, because of the possibility of resource-sharing. It was also hypothesized that costs would be lower in districts which made a larger per-student investment in nonreimbursable meals, because of the likelihood of cross-subsidization. The indicators of region and urbanicity were included as control variables rather than with any prior expectation of effect. (Note that the regional food cost index could not be included in a specification that contained regional indicators).

A variety of specifications were attempted, including some with interaction terms. The selected version excluded variables for which the standard error exceeded the estimated coefficient. Thus, presence of a breakfast program and cost per student of nonreimbursable meals do not appear in the final models. The results are shown in Exhibits D.1 and D.2.

Regression Models of Reported Cost

The findings on variations for reported costs may be summarized as follows.

- The cheapest production system is on-site kitchens only. With regard to *breakfasts*, use of this system reduced costs by about $0.50 per meal, other things equal, relative to use of base or central kitchens with satellites; by about $0.40 relative to use of mostly on-site kitchens; and by about $0.15 relative to use of mostly satellite kitchens. With regard to *lunches*, use of this system reduced costs by about $0.25 per meal relative to use of base or central kitchens with satellites, and by about $0.15 per meal relative to use of either mostly on-site kitches or mostly satellite kitchens. In the unweighted sample, a difference of about $0.25 between any two production systems achieved statistical significance.[2] Hence, for breakfasts, the two less expensive systems (on-site kitchens

[2]This assumes use of a two-tailed test and a p-value of 0.05. One-tailed tests were used elsewhere (where specific hypotheses were being tested).

only, mostly satellite kitchens) were significantly cheaper than the two more expensive systems; and for lunches, the least expensive system (on-site kitchens only) was significantly cheaper than the most expensive system (base or central kitchens with satellites). Other differences in full cost between production systems were not statistically significant.

- Smaller programs were significantly more expensive for breakfasts only. Serving fewer than 300,000 breakfasts per year increased districts' costs by about $0.25.

- Regional differences were generally small and inconsistent. The only significant difference was that reported costs of lunches were about $0.15 less for programs in the Midwest than in the South (the excluded region) and about $0.21 less than in the North).

- No significant differences were seen among programs in urban, suburban, or rural sites.

The models explained 28 percent and 16 percent of variation in reported costs for breakfasts and lunches, respectively.

Regression Models of Full Cost

The results for full costs were qualitatively similar, with the exception that lunches prepared in base or central kitchens with satellites were now *less* expensive than those prepared in either mostly on-site or mostly satellite kitchens. In particular:

- Based on full as well as reported costs, the cheapest production system is on-site kitchens only. With regard to *breakfasts*, use of this system reduced full costs by about $0.50 per meal, other things equal, relative to use of base or central kitchens with satellites or mostly on-site kitchens, and about $0.35 relative to mostly satellite. With regard to *lunches*, use of this system reduced costs by about $0.25 relative to use of base or central kitchens plus satellites, by about $0.50 relative to use of mostly on-site kitchens, and by about $0.70 relative to use of mostly satellite kitchens. In the unweighted sample, a difference of $0.35 to $0.40 between any two production systems achieved statistical significance. Hence, for breakfasts, all on-site production was significantly cheaper than only two of the alternatives (base or central and mostly on-site), but the other three did not differ significantly from each other; and for lunches, all on-site production was significantly cheaper than mostly on-site and mostly satellite production, while production in base or central kitchens with satellites was also significantly cheaper than production in mostly satellite kitchens.

- Smaller programs were significantly more expensive for breakfasts only. Serving fewer than 300,000 reimbursed breakfasts per year increased districts' costs per reimbursed breakfast by about $0.35; and serving fewer than 500,000 reimbursed lunches per year increased districts' costs per reimbursed lunch by about $0.25.

- Regional differentials were inconsistent. Breakfasts were cheapest to produce in the north and most expensive in the midwest and west. Lunches, in contrast, were cheapest to produce in the midwest, and most expensive in the south.

- Local labor costs significantly increased costs of producing lunches.

- The effects of urbanicity were also inconsistent. Suburban districts achieved significantly lower costs than rural districts for lunch.

Overall, the models explained 30 percent of the variation in breakfast costs, and 20 percent of the variation in lunch costs. Using unweighted data, the production methods alone explain only 12 and 6 percent, respectively, of the variations in these costs.

Exhibit D.1

Regression Models for Reported Cost per Reimbursable Meal
(Standard errors in parentheses)

Variables	Estimated Coefficients	
	Breakfast	**Lunch**
Production Method (Excluded: on-site kitchens only)		
Base or central kitchens with satellites	0.51 (0.15)	0.26 (0.09)
Combination: Mostly on-site kitchens	0.42 (0.15)	0.15 (0.10)
Combination: Mostly satellite kitchens	(0.17)	0.17 (0.11)
Small Program		
(Breakfast: up to 300,000 meals served/year; lunch: up to 500,000 meals served/year)	0.21 (0.12)	-0.09 (0.08)
Urbanicity (Excluded: rural)		
Urban		-0.05 (0.10)
Suburban		-0.13 (0.08)
Region (Excluded: South)		
Midwest	0.14 (0.15)	-0.16 (0.08)
West	0.17 (0.15)	-0.06 (0.09)
North	-0.20 (0.19)	0.06 (0.11)
Intercept	0.87	1.70
Mean of dependent variable	1.28	1.69
R^2	0.28	0.17

Exhibit D.2

Regression Models for Full Cost per Reimbursable Meal
(Standard errors in parentheses)

Variables	Estimated Coefficients	
	Breakfast	**Lunch**
Production Method (Excluded: on-site kitchens only)		
Base or central kitchens with satellites	0.51 (0.18)	0.27 (0.18)
Combination: Mostly on-site kitchens	0.53 (0.18)	0.48 (0.18)
Combination: Mostly satellite kitchens	0.34 (0.20)	0.68 (0.20)
Small Program		
(Breakfast: up to 300,000 meals served/year; lunch: up to 500,000 meals served/year)	0.34 (0.14)	0.23 (0.15)
Monthly Wage of Local Government Workers in State ($000)		0.41 (0.21)
Urbanicity (Excluded: rural)		
Urban		-0.23 (0.20)
Suburban		-0.36 (0.16)
Region (Excluded: South)		
Midwest	0.18 (0.17)	-0.32 (0.16)
West	0.17 (0.18)	-0.20 (0.20)
North	-0.31 (0.22)	-0.25 (0.24)
Intercept	0.93	0.97
Mean of dependent variable	1.47	1.98
R^2	0.27	0.20

Appendix E

Supplementary Tables

Reported Cost Supplementary Tables

Exhibit E.1

Reported Cost per Reimbursable Lunch
Distribution of SFAs

Reported Cost Per Lunch	Percent of SFAs	Percent of Lunches	Total SFAs (weighted)
$0.00 - < 1.00	4.6%	1.4%	601
$1.00 - < 1.10	0 .4	0.3	56
$1.10 - < 1.20	4.1	1.3	531
$1.20 - < 1.30	5.8	6.8	755
$1.30 - < 1.40	11.4	6.3	1,471
$1.40 - < 1.50	8.9	6.0	1,153
$1.50 - < 1.60	9.4	17.7	1,212
$1.60 - < 1.70	14.5	15.3	1,878
$1.70 - < 1.80	13.3	11.3	1,715
$1.80 - < 1.90	9.6	13.3	1,246
$1.90 - < 2.00	5.8	6.2	753
$2.00 - < 2.10	1.3	4.3	170
$2.10 - < 2.20	0.0	0.0	0
$2.20 - < 2.30	1.8	3.6	234
$2.30 or more	9.0	6.2	1,161
Total All SFAs	100.0	100.0	12,937
Mean	1.64	1.69	
Median	1.63	1.66	
STD	.34	.30	
(Unweighted N)			(94)

Exhibit E.2

Reported Cost per Reimbursable Breakfast
Distribution of SFAs

Reported Cost per Reimbursable Breakfast	Percent of SFAs	Percent of breakfasts	Total SFAs (weighted)
$0.00 - < 1.00	35.5%	43.0	3,022
$1.00 - < 1.20	29.4	27.3	2,500
$1.20 - < 1.40	13.2	21.0	1,125
$1.40 - < 1.60	7.7	4.2	657
$1.60 - < 1.80	2.4	2.0	207
$1.80 or more	11.8	2.5	1,004
Total All SFAs	100.0	100.0	8,516
Mean	1.27	1.11	
Median	1.05	1.05	
STD	.60	.29	
(Unweighted N)			(78)

Exhibit E.3

Total Reported Cost per Reimbursable Meal by Meal Production System

A

Reported Cost per Reimbursable Lunch

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production Facility								
On-Site kitchen only	1.61	1.62	.31	1.63	1.65	.29	7,748	34
Base/Central only	1.59	1.66	.38	1.78	1.78	.28	2,056	23
Mostly on-site kitchen	1.82	1.64	.37	1.75	1.66	.28	1,286	22
Mostly satellite	1.71	1.88	.33	1.66	1.57	.32	1,847	15

B

Reported Cost per Reimbursable Breakfast

	Unit of Analysis is SFA			Unit of Analysis is SBP Breakfast			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production System								
On-Site kitchen only	1.07	1.05	.23	1.07	1.05	.23	4,980	27
Base/Central only	2.22	2.92	.87	1.40	1.34	.55	1,102	19
Mostly on-site kitchen	1.85	1.70	.64	1.16	1.17	.26	727	18
Mostly satellite	1.02	1.03	.23	1.04	0.92	.25	1,707	14

Exhibit E.4

Composition of Food Service Reported Costs
by Meal Production System

	Percent of SFA Reported Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production System											
On-Site kitchen only	46.5	45.0	5.6	46.8	46.7	6.6	6.7	5.7	4.3	7,748	34
Base/Central only	50.1	49.5	7.2	39.1	39.4	6.9	10.7	7.9	6.3	2,056	23
Mostly On-Site	39.4	36.4	8.9	51.0	50.7	7.9	9.6	7.2	6.3	1,286	22
Mostly Satellite	59.8	45.5	20.4	31.3	44.1	21.5	8.8	10.1	3.1	1,847	15

Exhibit E.5

Donated Commodities as a Percentage of Total Food Costs: Distribution of SFAs

Donated Commodities as a Percent of Total Food Cost	Percent of SFAs
0% - < 10%	3.2%
10% - < 15%	28.0
15% - < 20%	49.2
20% - < 25%	17.3
25% or more	2.3
Total All SFAs	100.0
Mean	17.3%
Median	16.2%
STD	5.07
Weighted N	12,937
(Unweighted N)	(94)

Exhibit E.6

Percentage of Reported Costs Attributable to Reimbursable Meals: Distribution of SFAs

Percent of Cost Attributable to Reimbursable Meals[a]	Percent of SFAs	
	Breakfast	Lunch
0% - < 50%	0.0%	4.6%
50% - < 60%	2.7	5.5
60% - < 70%	0.0	9.5
70% - < 80%	2.2	32.0
80% - < 90%	40.4	30.8
90% - 100%	54.7	17.7
Total All SFAs	100.0	100.0
Mean	89.3%	77.1%
Median	90%	79%
STD	8.7	14.4
Weighted N	8,516	12,937
(Unweighted N)	(78)	(94)

[a]Based on the proportion of food costs that are reimbursable.

Exhibit E.7

Reported Food and Labor Costs Per Reimbursable Lunch: Distribution of SFAs

Reported Cost Per Reimbursable Lunch	Percent of SFAs	
	Food	Labor
$0.00 - < $0.30	0.4%	4.5%
$0.30 - < $0.40	1.5	5.1
$0.40 - < $0.50	4.9	7.5
$0.50 - < $0.60	14.4	5.4
$0.60 - < $0.70	17.4	25.9
$0.70 - < $0.80	23.8	17.2
$0.80 - < $0.90	21.1	10.2
$0.90 - < $1.00	3.0	9.3
$1.00 or more	13.5	14.8
Total All SFAs	100.0	100.0
Mean	$0.79	$0.71
Median	$0.77	$0.70
STD	0.25	0.27
Weighted N	12,937	12,937
(Unweighted N)	(94)	(94)

Exhibit E.8

Reported Food and Labor Costs Per Reimbursable Breakfast: Distribution of SFAs

Reported Cost Per Reimbursable Breakfast	Percent of SFAs	
	Food	Labor
$0.00 - < $0.30	7.4%	17.8%
$0.30 - < $0.40	4.4	14.8
$0.40 - < $0.50	24.2	22.2
$0.50 - < $0.60	33.0	11.8
$0.60 - < $0.70	15.7	10.0
$0.70 - < $0.80	10.6	7.5
$0.80 - < $0.90	0.2	1.9
$0.90 - < $1.00	0.5	0.0
$1.00 or more	4.1	14.0
Total All SFAs	100.0	100.0
Mean	$0.56	$0.62
Median	$0 .55	$0.49
STD	0 .17	0.51
Weighted N	8,516	8,516
(Unweighted N)	(78)	(78)

Exhibit E.9

Reported Cost Components of Reimbursable Lunch: SFA as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.79	$0.77	$0.25	$0.71	$0.70	$0.27	$0.13	$0.12	$0.09	12,937	94
Participation in SBP											
NSLP and SBP	0.82	0.77	0.27	0.68	0.66	0.28	0.13	0.12	0.08	8,566	78
NSLP only	0.73	0.80	0.19	0.79	0.70	0.24	0.14	0.10	0.09	4,371	16
SFA Size											
Small (1-999)	0.89	0.79	0.30	0.67	0.70	0.29	0.11	0.12	0.07	6,327	12
Medium (1,000-4,999)	0.70	0.70	0.14	0.74	0.67	0.26	0.15	0.11	0.10	4,537	28
Large (5,000+)	0.69	0.65	0.16	0.78	0.79	0.19	0.17	0.11	0.11	2,073	54
A la Carte Revenues[1]											
< 10% of Total Revenue	0.72	0.73	0.12	0.76	0.70	0.23	0.13	0.08	0.10	3,673	29
≥ 10% of Total Revenue	0.74	0.78	0.17	0.71	0.66	0.16	0.12	0.09	0.09	6,311	50
Production Facility											
On-Site kitchen only	0.74	0.77	0.14	0.75	0.70	0.20	0.11	0.09	0.08	7,748	34
Base/Central only	0.80	0.84	0.23	0.61	0.60	0.18	0.17	0.14	0.10	2,056	23
Mostly on-site kitchen	0.71	0.80	0.17	0.94	0.79	0.28	0.17	0.17	0.11	1,286	22
Mostly satellite	1.04	0.86	0.46	0.52	0.62	0.39	0.15	0.15	0.06	1,847	15

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.10

Reported Cost Components of Reimbursable Lunch: Meal as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			Meal as Unit	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.72	$0.70	$0.14	$0.79	$0.77	$0.22	$0.19	$0.18	$0.10	12,937	94
NSLP and SBP	0.72	0.70	0.14	0.78	0.77	0.22	0.19	0.19	0.10	8,566	78
NSLP only	0.71	0.80	0.20	0.82	0.76	0.24	0.17	0.14	0.09	4,371	16
SFA Size											
Small (1-999)	0.85	0.79	0.21	0.72	0.70	0.26	0.12	0.12	0.06	6,327	12
Medium (1,000-4,999)	0.70	0.69	0.16	0.70	0.65	0.22	0.16	0.13	0.10	4,537	28
Large (5,000+)	0.71	0.68	0.12	0.82	0.81	0.21	0.20	0.21	0.09	2,073	54
A la Carte Revenues[1]											
< 10% of Total Revenue	0.76	0.73	0.13	0.82	0.77	0.28	0.23	0.21	0.10	3,673	29
≥ 10% of Total Revenue	0.69	0.70	0.12	0.77	0.77	0.15	0.16	0.14	0.09	6,311	50
Production Facility											
On-Site kitchen only	0.71	0.68	0.12	0.77	0.76	0.21	0.16	0.14	0.08	7,748	34
Base/Central only	0.76	0.73	0.17	0.81	0.80	0.19	0.21	0.22	0.10	2,056	23
Mostly on-site kitchen	0.67	0.66	0.10	0.86	0.81	0.27	0.22	0.23	0.10	1,286	22
Mostly satellite	0.78	0.78	0.17	0.71	0.66	0.16	0.17	0.21	0.09	1,847	15

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.11

Reported Cost Components of Reimbursable Breakfast: SFA as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.56	$0.55	$0.17	$0.62	$0.49	$0.51	$0.10	$0.09	$0.07	8,516	78
SFA Size											
Small (1-999)	0.57	0.55	0.11	0.44	0.49	0.23	0.07	0.09	0.04	4,693	10
Medium (1,000-4,999)	0.54	0.59	0.11	0.98	0.51	0.75	0.13	0.11	0.07	2,119	17
Large (5,000+)	0.54	0.36	0.31	0.69	0.50	0.43	0.12	0.06	0.10	1,704	51
A la Carte Revenues[1]											
< 10% of Total Revenue	0.50	0.53	0.14	0.47	0.36	0.22	0.10	0.07	0.07	1,984	25
≥ 10% of Total Revenue	0.55	0.55	0.18	0.75	0.49	0.53	0.09	0.07	0.08	4,375	40
Production Facility											
On-Site kitchen only	0.50	0.53	0.09	0.49	0.49	0.15	0.07	0.07	0.05	4,980	27
Base/Central only	0.61	0.61	0.15	1.43	2.11	0.81	0.18	0.21	0.06	1,102	19
Mostly on-site kitchen	0.71	0.60	0.34	1.00	1.03	0.38	0.14	0.06	0.11	727	18
Mostly satellite	0.61	0.76	0.19	0.32	0.19	0.34	0.09	0.09	0.04	1,707	14

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.12

Reported Cost Components of Reimbursable Breakfast: Meal as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			Meal as Unit	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.49	$0.48	$0.12	$0.51	$0.48	$0.23	$0.12	$0.10	$0.06	8,516	78
SFA Size											
Small (1-999)	0.56	0.48	0.12	0.40	0.32	0.19	0.10	0.11	0.04	4,693	10
Medium (1,000-4,999)	0.46	0.42	0.10	0.55	0.46	0.38	0.10	0.07	0.06	2,119	17
Large (5,000+)	0.47	0.47	0.12	0.53	0.53	0.19	0.13	0.11	0.06	1,704	51
A la Carte Revenues[1]											
< 10% of Total Revenue	0.47	0.46	0.12	0.42	0.35	0.21	0.12	0.11	0.06	1,984	25
≥ 10% of Total Revenue	0.49	0.48	0.09	0.56	0.58	0.21	0.12	0.11	0.06	4,375	40
Production Facility											
On-Site kitchen only	0.48	0.48	0.07	0.48	0.48	0.17	0.11	0.13	0.05	4,980	27
Base/Central only	0.56	0.53	0.17	0.67	0.58	0.45	0.17	0.17	0.07	1,102	19
Mostly on-site kitchen	0.46	0.45	0.11	0.58	0.60	0.18	0.13	0.17	0.06	727	18
Mostly satellite	0.53	0.46	0.16	0.42	0.35	0.25	0.09	0.10	0.05	1,707	14

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.13

Reported Administrative Labor Costs as a Percent of Reported Labor Costs: Distribution of SFAs

Administration as a Percent of Total Labor	Percent of SFAs	Total SFAs (weighted)
Less than 10%	30.9	4,004
10% - < 20%	29.8	3,857
20% - < 30%	24.1	3,120
30% - < 40%	14.2	1,841
40% or more	0.9	116
Total All SFAs	100.0	12,937
Mean	17.4	
Median	14.8	
STD	10.4	
(Unweighted N)		(94)

Exhibit E.14

Administrative Labor Costs as a Percent of Total Reported Costs: Distribution of SFAs

Administration as a Percent of Total Reported Costs	Percent of SFAs	Total SFAs (weighted)
Less than 5%	36.7%	4,752
5% - < 10%	32.2	4,166
10% - < 15%	20.1	2,594
15% - < 20%	10.6	1,376
20% or more	0.4	49
Total All SFAs	100.0	12,937
Mean	7.9	
Median	7.1	
STD	4.8	
(Unweighted N)		(94)

Exhibit E.15

Reported Administrative Labor Costs by Meal Production System

A

Administrative Labor Costs as a Percent of Total Reported Labor Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production Facility								
On-Site kitchen only	18.5	16.1	10.6	24.2	21.8	11.3	7,748	34
Base/Central only	18.3	20.9	8.9	27.6	27.9	9.7	2,056	23
Mostly on-site kitchen	15.7	11.7	9.3	21.5	22.2	8.4	1,286	22
Mostly satellite	13.1	13.9	10.9	24.5	23.4	11.1	1,847	15

B

Administrative Labor Costs as a Percent of Total Reported Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production Facility								
On-Site kitchen only	8.5	7.4	4.9	11.1	9.7	5.5	7,748	34
Base/Central only	7.2	8.3	3.9	12.6	11.4	4.8	2,056	23
Mostly on-site kitchen	7.7	6.2	4.5	10.4	10.5	4.3	1,286	22
Mostly satellite	6.0	7.1	4.9	10.4	10.3	4.3	1,847	15

Full Cost Supplementary Tables

Exhibit E.16

Total Unreported Costs as a Percent of Full Costs: Distribution of SFAs

Unreported Costs as a Percent of Full Costs	Percent of SFAs	Total SFAs (weighted)
Less than 10%	20.9%	2,698
10% - < 20%	45.5	5,890
20% - < 30%	27.1	3,506
30% - < 40%	2.0	255
40% or more	4.5	585
Total All SFAs	100.0%	12,934
Mean	18.6	
Median	17.1	
STD	11.7	
(Unweighted N)		(93)

Exhibit E.17

Total Unreported Costs as a Percent of Full Costs by Meal Production System

	Unreported Costs as a Percent of Full Costs			SFA Sample Size	
	Mean	**Median**	**STD**	**Weighted**	**Unweighted**
Production Facility					
On-Site kitchen only	16.8	19.3	6.9	7,747	34
Base/Central only	15.2	14.9	3.8	2,054	22
Mostly on-site kitchen	21.2	23.6	6.2	1,286	22
Mostly satellite	28.0	12.8	24.3	1,847	15

Exhibit E.18

Unreported Labor as a Percent of Total Full Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	9.0%	6.6%	10.5%	12,934	93
SFA Size					
Small (1-999)	11.8	6.8	13.5	6,327	12
Medium (1,000-4,999)	5.3	5.1	4.0	4,537	28
Large (5,000+)	8.8	6.8	6.4	2,070	53
Production Facility					
On-Site kitchen only	7.7	6.8	5.6	7,747	34
Base/Central only	4.5	3.9	2.6	2,054	22
Mostly on-site kitchen	9.4	9.5	6.6	1,286	22
Mostly satellite	19.4	6.8	21.5	1,847	15

Exhibit E.19

Unreported Depreciation as a Percent of Total Full Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	2.4%	2.3%	1.6%	12,934	93
SFA Size					
Small (1-999)	3.2	3.0	1.4	6,327	12
Medium (1,000-4,999)	1.9	2.3	1.4	4,537	28
Large (5,000+)	1.3	1.5	1.4	2,070	53
Production Facility					
On-Site kitchen only	2.6	2.8	1.7	7,747	34
Base/Central only	3.1	3.2	0.9	2,054	22
Mostly on-site kitchen	1.2	0.0	1.3	1,286	22
Mostly satellite	1.7	1.3	0.7	1,847	15

Exhibit E.20

Unreported Indirect as a Percent of Total Full Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	5.0%	4.8%	4.2%	12,934	93
SFA Size					
Small (1-999)	6.1	4.8	4.1	6,327	12
Medium (1,000-4,999)	4.3	4.2	3.9	4,537	28
Large (5,000+)	2.9	0.0	4.3	2,070	53
Production Facility					
On-Site kitchen only	4.3	1.5	4.2	7,747	34
Base/Central only	4.7	4.2	2.4	2,054	22
Mostly on-site kitchen	7.4	6.0	5.3	1,286	22
Mostly satellite	6.3	5.9	4.2	1,847	15

Exhibit E.21

Unreported Other as a Percent of Total Full Costs

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Total	2.2%	1.9%	2.2%	12,934	93
SFA Size					
Small (1-999)	2.5	2.2	1.8	6,327	12
Medium (1,000-4,999)	1.9	0.0	2.6	4,537	28
Large (5,000+)	1.9	0.6	2.4	2,070	53
Production Facility					
On-Site kitchen only	2.2	2.1	2.0	7,747	34
Base/Central only	2.8	3.5	2.9	2,054	22
Mostly on-site kitchen	3.1	3.3	2.9	1,286	22
Mostly satellite	0.7	0.9	0.7	1,847	15

[1]Includes supplies, utilities and other direct cost.

Exhibit E.22

Unreported Labor[1] as a Percent of Total Unreported Costs: Distribution of SFAs

Unreported Labor/ Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0 - < 10%	12.2%	1,583
10% - < 20%	12.1	1,569
20% - < 30%	7.3	939
30% - < 40%	21.4	2,766
40% - < 50%	8.4	1,092
50% - < 60%	8.4	1,081
60% - < 70%	5.8	751
70% - < 80%	13.7	1,770
80% - < 90%	6.5	838
90% - < 100%	4.2	545
Total All SFAs	100.0%	12,934
Mean	43.9	
Median	38.2	
STD	26.9	
(Unweighted N)		(93)

[1]Labor represents both salary and fringe benefit costs.

Exhibit E.23

Unreported Labor as a Percent of Total Unreported Costs by Meal Production System

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Production Facility					
On-Site kitchen only	46.2	38.2	27.9	7,747	34
Base/Central only	29.7	32.2	14.4	2,054	22
Mostly on-site kitchen	42.5	44.0	20.9	1,286	22
Mostly satellite	50.9	59.6	31.5	1,847	15

Exhibit E.24

Unreported Labor[1] as a Percent of Total Labor: Distribution of SFAs

Unreported Labor/ Total Labor	Percent of SFAs	Total SFAs (weighted)
0 - < 10%	32.7%	4,233
10% - < 20%	41.3	5,342
20% - < 30%	12.6	1,627
30% - < 40%	8.9	1,147
40% or more	4.5	585
Total All SFAs	100.0%	12,934
Mean	18.4	
Median	14.1	
STD	19.7	
(Unweighted N)		(93)

[1]Labor equals salaries and fringe benefits.

Exhibit E.25

Unreported Labor as a Percent of Total Labor by Meal Production System

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Production Facility					
On-Site kitchen only	15.8	14.4	10.1	7,747	34
Base/Central only	11.0	8.4	4.7	2,054	22
Mostly on-site kitchen	17.8	18.9	10.4	1,286	22
Mostly satellite	37.9	13.3	41.4	1,847	15

Exhibit E.26

School Administrative Labor as a Percent of Total Unreported Labor[1]: Distribution of SFAs

School Administrative Labor/ Total Unreported Labor	Percent of SFAs	Total SFAs (weighted)
0 - < 10%	43.7%	5,656
10% - < 20%	6.0	778
20% - < 30%	2.4	317
30% - < 40%	1.2	155
40% - < 50%	8.7	1,130
50% - < 60%	6.4	825
60% - < 70%	3.1	395
70% - < 80%	3.6	461
80% - < 90%	4.2	541
90% - < 100%	20.7	2,676
Total All SFAs	100.0%	12,934
Mean	39.6	
Median	23.1	
STD	39.6	
(Unweighted N)		(93)

[1]Unreported Labor includes both unreported salary and fringe benefits.

Exhibit E.27

School Administrative Labor as a Percent of Total Unreported Labor by Meal Production System

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Production Facility					
On-Site kitchen only	37.6	17.2	39.9	7,747	34
Base/Central only	45.7	42.4	36.6	2,054	22
Mostly on-site kitchen	49.7	46.4	38.4	1,286	22
Mostly satellite	34.0	1.5	40.1	1,847	15

Exhibit E.28

Unreported Indirect Costs as a Percent of Total Unreported Costs: Distribution of SFAs

Unreported Indirect Costs/ Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0 - < 10%	31.8%	4,117
10% - < 20%	12.8	1,655
20% - < 30%	16.4	2,124
30% - < 40%	7.4	963
40% - < 50%	14.6	1,893
50% - < 60%	7.8	1,013
60% or more	9.0	1,169
Total All SFAs	100.0%	12,934
Mean	27.1	
Median	24.3	
STD	23.5	
(Unweighted N)		(93)

Exhibit E.29

Unreported Indirect Costs as a Percent of Total Unreported Costs by Meal Production System

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Production Facility					
On-Site kitchen only	23.7	15.4	22.9	7,747	34
Base/Central only	30.8	26.3	15.2	2,054	22
Mostly on-site kitchen	35.2	35.0	23.8	1,286	22
Mostly satellite	31.4	17.2	29.7	1,847	15

Exhibit E.30

Unreported Depreciation as a Percent of Total Unreported Costs by Meal Production System

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Production Facility					
On-Site kitchen only	17.4	13.6	18.0	7,747	34
Base/Central only	21.4	18.1	7.5	2,054	22
Mostly on-site kitchen	6.0	0.14	7.5	1,286	22
Mostly satellite	13.1	9.3	11.6	1,847	15

Exhibit E.31

Unreported Depreciation as a Percent of Total Unreported Costs: Distribution of SFAs

Unreported Depreciation/ Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0 - < 10%	38.4%	4,962
10% - < 20%	29.7	3,844
20% - < 30%	22.3	2,883
30% - < 40%	6.2	796
40% - < 50%	0.5	59
50% - < 60%	0.0	0
60% - < 70%	0.0	0
70% - < 80%	2.1	270
80% - < 90%	0.0	0
90% - < 100%	0.9	119
Total All SFAs	100.0%	12,934
Mean	16.3	
Median	13.6	
STD	15.6	
(Unweighted N)		(93)

Exhibit E.32

Unreported Utility Costs as a Percent of Total Unreported Costs by Meal Production System

	Mean	Median	STD	SFA Sample Size	
				Weighted	Unweighted
Production Facility					
On-Site kitchen only	10.8	10.9	11.6	7,747	34
Base/Central only	17.7	26.0	17.8	2,054	22
Mostly on-site kitchen	15.2	14.5	15.0	1,286	22
Mostly satellite	3.5	1.4	6.0	1,847	15

Exhibit E.33

Unreported Utilities as a Percent of Total Unreported Costs: Distribution of SFAs

Other Unreported Costs/ Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0 - < 10%	53.2%	6,879
10% - < 20%	24.2	3,126
20% - < 30%	11.4	1,472
30% - < 40%	8.3	1,079
40% or more	2.9	379
Total All SFAs	100.0%	12,934
Mean	11.3	
Median	4.1	
STD	13.2	
(Unweighted N)		(93)

Exhibit E.34

Full Cost per Reimbursable Lunch
Distribution of SFAs

Reported Cost Per Lunch	Percent of SFAs	Percent of Lunches	Total SFAs (weighted)
$1.10 - < 1.20	4.6%	1.4%	601
$1.20 - < 1.30	1.2	0.8	153
$1.30 - < 1.40	2.1	3.1	272
$1.40 - < 1.50	7.2	5.4	927
$1.50 - < 1.60	4.9	6.0	634
$1.60 - < 1.70	10.3	11.2	1,334
$1.70 - < 1.80	3.9	8.2	506
$1.80 - < 1.90	17.0	16.5	2,202
$1.90 - < 2.00	8.1	9.1	1,044
$2.00 - < 2.10	6.3	8.4	810
$2.10 - < 2.20	6.0	5.4	782
$2.20 or more	28.4	24.5	3,669
Total All SFAs	100.0	100.0	12,934
Mean	2.14	1.95	
Median	1.88	1.88	
STD	.95	.47	
(Unweighted N)			(93)

Exhibit E.35

Full Cost per Reimbursable Breakfast
Distribution of SFAs

Full Cost per Reimbursable Breakfast	Percent of SFAs	Percent of breakfasts	Total SFAs (weighted)
$0.00 - < 1.00	7.7%	13.8%	656
$1.00 - < 1.20	20.0	35.4	1,701
$1.20 - < 1.40	25.4	23.3	2,164
$1.40 - < 1.60	8.0	15.1	683
$1.60 - < 1.80	15.3	6.7	1,302
$1.80 or more	23.6	5.7	2,008
Total All SFAs	100.0	100.0	8,514
Mean	1.67	1.28	
Median	1.38	1.20	
STD	.75	.37	
(Unweighted N)			(77)

Exhibit E.36

Total Full Cost per Reimbursable Meal by Meal Production System

A

Full Cost per Reimbursable Lunch

	Total Full Cost per Reimbursable Lunch						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production Facility								
On-Site kitchen only	1.96	1.88	.41	1.86	1.83	.39	7,747	34
Base/Central only	1.78	1.76	.42	1.93	1.91	.35	2,054	22
Mostly on-site kitchen	2.33	2.19	.55	2.05	1.96	.48	1,286	22
Mostly satellite	3.18	2.45	1.96	1.98	1.94	.56	1,847	15

B

Full Cost per Reimbursable Breakfast

	Total Full Cost per Reimbursable Breakfast						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is SBP Breakfast				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production System								
On-Site kitchen only	1.33	1.34	.30	1.21	1.20	.28	4,980	27
Base/Central only	2.54	2.80	1.05	1.58	1.41	.62	1,100	18
Mostly on-site kitchen	2.29	2.40	.81	1.36	1.35	.32	727	18
Mostly satellite	1.82	1.41	.73	1.21	1.02	.40	1,707	14

Exhibit E.37

Composition of Food Service Full Costs
by Meal Production System

	Percent of SFA Full Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production System											
On-Site kitchen only	38.1	37.0	4.4	46.4	45.8	7.0	15.5	15.5	4.4	7,747	34
Base/Central only	44.7	43.7	6.4	39.1	40.0	7.1	16.3	16.6	4.2	2,054	22
Mostly On-Site	31.3	28.5	8.4	50.0	50.2	8.2	18.7	19.3	3.1	1,286	22
Mostly Satellite	36.5	40.8	6.0	47.8	48.5	4.2	15.7	17.1	4.2	1,847	15

Exhibit E.38

Full Food and Labor Costs Per Reimbursable Lunch: Distribution of SFAs

Full Cost Per Reimbursable Lunch	Percent of SFAs	
	Food	Labor
$0.00 - < $0.30	0.4%	0.0%
$0.30 - < $0.40	1.5	0.0
$0.40 - < $0.50	4.9	8.5
$0.50 - < $0.60	14.4	3.9
$0.60 - < $0.70	17.4	15.3
$0.70 - < $0.80	23.8	14.1
$0.80 - < $0.90	21.1	16.2
$0.90 - < $1.00	3.0	5.1
$1.00 or more	13.5	36.9
Total All SFAs	100.0	100.0
Mean	0.79	1.00
Median	0.77	0.82
STD	0.25	0.54
Weighted N	12,934	12,934
(Unweighted N)	(93)	(93)

Exhibit E.39

Full Food and Labor Costs Per Reimbursable Breakfast: Distribution of SFAs

Full Cost Per Reimbursable Breakfast	Percent of SFAs	
	Food	Labor
$0.00 - < $0.30	7.4%	7.6%
$0.30 - < $0.40	4.4	6.4
$0.40 - < $0.50	24.2	7.2
$0.50 - < $0.60	33.0	14.2
$0.60 - < $0.70	15.7	23.3
$0.70 - < $0.80	10.6	6.0
$0.80 - < $0.90	0.2	12.7
$0.90 - < $1.00	0.5	0.9
$1.00 or more	4.1	21.7
Total All SFAs	100.0	100.0
Mean	0.56	0.84
Median	0.55	0.64
STD	0.17	0.55
Weighted N	8,514	8,514
(Unweighted N)	(77)	(77)

Exhibit E.40

Full Cost Components of Reimbursable Lunch: SFA as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.79	$0.77	$0.25	$1.00	$0.82	$0.54	$0.35	$0.30	$0.22	12,934	93
NSLP and SBP	0.82	0.77	0.27	1.03	0.79	0.63	0.37	0.30	0.26	8,563	77
NSLP only	0.73	0.80	0.19	0.94	0.82	0.31	0.32	0.27	0.12	4,371	16
SFA Size											
Small (1-999)	0.89	0.79	0.30	1.12	0.82	0.69	0.42	0.31	0.27	6,327	12
Medium (1,000-4,999)	0.70	0.70	0.14	0.86	0.80	0.33	0.29	0.23	0.13	4,537	28
Large (5,000+)	0.69	0.65	0.16	0.94	0.96	0.24	0.28	0.30	0.13	2,070	53
A la Carte Revenues[1]											
< 10% of Total Revenue	0.72	0.73	0.12	0.97	0.82	0.37	0.33	0.27	0.11	3,673	29
≥ 10% of Total Revenue	0.74	0.78	0.17	0.85	0.79	0.23	0.28	0.30	0.10	6,308	49
Production Facility											
On-Site kitchen only	0.74	0.77	0.14	0.91	0.82	0.27	0.30	0.29	0.12	7,747	34
Base/Central only	0.80	0.84	0.23	0.68	0.65	0.20	0.30	0.34	0.11	2,054	22
Mostly on-site kitchen	0.71	0.80	0.17	1.18	1.30	0.38	0.45	0.43	0.14	1,286	22
Mostly satellite	1.04	0.86	0.46	1.58	1.22	1.06	0.55	0.27	0.45	1,847	15

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.41

Full Cost Components of Reimbursable Lunch: Meal as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			Meal as Unit	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.72	$0.70	$0.14	$0.90	$0.90	$0.30	$0.33	$0.30	$0.18	12,934	93
NSLP and SBP	0.72	0.70	0.14	0.89	0.89	0.29	0.33	0.30	0.18	8,563	77
NSLP only	0.71	0.80	0.20	1.02	0.90	0.32	0.32	0.34	0.12	4,371	16
SFA Size											
Small (1-999)	0.85	0.79	0.21	1.01	0.82	0.51	0.39	0.34	0.19	6,327	12
Medium (1,000-4,999)	0.70	0.69	0.16	0.83	0.79	0.28	0.27	0.25	0.12	4,536	28
Large (5,000+)	0.71	0.68	0.12	0.91	0.90	0.26	0.34	0.31	0.18	2,070	53
A la Carte Revenues[1]											
< 10% of Total Revenue	0.76	0.73	0.13	0.96	0.87	0.38	0.34	0.31	0.14	3,673	29
≥ 10% of Total Revenue	0.69	0.70	0.12	0.86	0.86	0.19	0.30	0.29	0.13	6,308	49
Production Facility											
On-Site kitchen only	0.71	0.68	0.12	0.88	0.89	0.24	0.28	0.23	0.14	7,747	34
Base/Central only	0.76	0.73	0.17	0.87	0.86	0.18	0.30	0.26	0.15	2,054	22
Mostly on-site kitchen	0.67	0.66	0.10	0.98	0.90	0.38	0.41	0.36	0.14	1,286	22
Mostly satellite	0.78	0.78	0.17	0.87	0.94	0.32	0.34	0.26	0.23	1,847	15

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.42

Full Cost Components of Reimbursable Breakfast: SFA as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.56	$0.55	$0.17	$0.84	$0.64	$0.55	$0.27	$0.21	$0.14	8,514	77
SFA Size											
Small (1-999)	0.57	0.55	0.11	0.75	0.64	0.31	0.28	0.22	0.13	4,693	10
Medium (1,000-4,999)	0.54	0.59	0.11	1.08	0.54	0.84	0.27	0.20	0.13	2,119	17
Large (5,000+)	0.54	0.36	0.31	0.81	0.54	0.51	0.25	0.19	0.18	1,702	50
A la Carte Revenues[1]											
< 10% of Total Revenue	0.50	0.53	0.14	0.61	0.64	0.23	0.20	0.17	0.07	1,984	25
≥ 10% of Total Revenue	0.55	0.55	0.18	0.89	0.62	0.64	0.25	0.21	0.13	4,373	39
Production Facility											
On-Site kitchen only	0.50	0.53	0.09	0.62	0.62	0.18	0.21	0.21	0.09	4,980	27
Base/Central only	0.61	0.61	0.14	1.58	1.93	0.91	0.35	0.34	0.14	1,100	18
Mostly on-site kitchen	0.71	0.60	0.34	1.17	1.51	0.46	0.40	0.49	0.12	727	18
Mostly satellite	0.61	0.76	0.19	0.88	0.81	0.47	0.32	0.20	0.19	1,707	14

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.43

Full Cost Components of Reimbursable Breakfast: Meal as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			Meal as Unit	
	Mean	Median	STD	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Total	$0.49	$0.48	$0.12	$0.57	$0.53	$0.26	$0.22	$0.21	$0.10	8,514	77
SFA Size											
Small (1-999)	0.56	0.48	0.12	0.52	0.34	0.28	0.25	0.23	0.10	4,693	10
Medium (1,000-4,999)	0.46	0.42	0.10	0.61	0.50	0.38	0.17	0.18	0.09	2,119	17
Large (5,000+)	0.47	0.47	0.12	0.58	0.56	0.22	0.22	0.21	0.10	1,702	50
A la Carte Revenues[1]											
< 10% of Total Revenue	0.47	0.46	0.12	0.49	0.39	0.24	0.19	0.17	0.07	1,984	25
≥ 10% of Total Revenue	0.49	0.48	0.09	0.60	0.62	0.25	0.23	0.23	0.09	4,373	39
Production Facility											
On-Site kitchen only	0.48	0.48	0.07	0.53	0.54	0.19	0.20	0.18	0.09	4,980	27
Base/Central only	0.56	0.53	0.17	0.73	0.64	0.48	0.29	0.30	0.13	1,100	18
Mostly on-site kitchen	0.46	0.45	0.11	0.63	0.63	0.23	0.27	0.28	0.07	727	18
Mostly satellite	0.53	0.46	0.16	0.51	0.39	0.29	0.18	0.18	0.11	1,707	14

[1]Excludes SFAs that did not separately report student payments for reimbursable meals from a la carte sales.

Exhibit E.44

Full Administrative Labor Costs by Meal Production System

A

Administrative Labor Costs as a Percent of Full Labor Costs

	Total Full Cost per Reimbursable Lunch						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production Facility								
On-Site kitchen only	29.5	28.2	8.8	32.3	31.1	9.0	7,747	34
Base/Central only	28.9	29.5	8.2	36.1	37.8	9.6	2,054	22
Mostly on-site kitchen	34.0	36.7	9.0	28.8	27.8	8.6	1,286	22
Mostly satellite	26.9	25.8	8.8	33.7	28.3	13.2	1,847	15

B

Administrative Labor Costs as a Percent of Total Full Costs

	Total Full Cost per Reimbursable Lunch						SFA Sample Size	
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch				
	Mean	Median	STD	Mean	Median	STD	Weighted	Unweighted
Production Facility								
On-Site kitchen only	13.8	13.7	4.8	15.2	14.5	4.8	7,747	34
Base/Central only	11.5	10.7	4.5	16.7	14.7	5.7	2,054	22
Mostly on-site kitchen	17.3	18.4	6.1	13.6	12.2	4.8	1,286	22
Mostly satellite	12.9	13.4	4.4	14.3	14.2	4.9	1,847	15

Exhibit E.45

Total Administrative Labor Costs as a Percent of Full Labor Costs: Distribution of SFAs

Administration as a Percent of Total Labor	Percent of SFAs	Total SFAs (weighted)
10% - < 20%	18.8	2,429
20% - < 30%	43.0	5,555
30% - < 40%	24.6	3,182
40% - < 50%	12.9	1,673
50% or more	0.7	95
Total All SFAs	100.0	12,934
Mean	29.5	
Median	28.3	
STD	8.9	
(Unweighted N)		(93)

Exhibit E.46

Administrative Labor Costs as a Percent of Total Full Costs: Distribution of SFAs

Administration as a Percent of Total Full Costs	Percent of SFAs	Total SFAs (weighted)
Less than 10%	28.1%	3,628
10% - < 20%	56.4	7,301
20% - < 30%	15.2	1,972
30% or more	0.3	33
Total All SFAs	100.0	12,934
Mean	13.6	
Median	13.4	
STD	5.1	
(Unweighted N)		(93)

SFA Revenues Supplementary Tables

Exhibit E.47

USDA Donated Commodities as a Percent of Total Revenue: Distribution of SFAs

Donated Commodities/ Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 2%	6.3%	817
2% - < 4%	1.3	163
4% - < 6%	10.9	1,413
6% - < 8%	35.0	4,528
8% - < 10%	24.0	3,104
10% - < 12%	18.0	2,328
12% or more	4.5	585
Total All SFAs	100.0%	12,937
Mean	7.8	
Median	7.7	
STD	2.8	
(Unweighted N)		(94)

Exhibit E.48

USDA Meal Reimbursements as a Percent of Total Revenue: Distribution of SFAs

USDA Reimbursements/ Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 30%	15.0%	1,940
30% - < 40%	28.6	3,698
40% - < 50%	13.6	1,758
50% - < 60%	16.6	2,143
60% - < 70%	19.3	2,492
70% or more	7.0	906
Total All SFAs	100.0%	12,937
Mean	38.5	
Median	34.1	
STD	16.3	
(Unweighted N)		(94)

Exhibit E.49

Student Payments for Reimbursable Meals as a Percent of Total Revenue: Distribution of SFAs

Student Payments/ Total Revenue	Percent of SFAs	Total SFAs[1] (weighted)
Less than 20%	13.3%	1,330
20% - < 30%	18.7	1,864
30% - < 40%	43.3	4,323
40% - < 50%	9.8	975
50% - < 60%	11.3	1,126
60% or more	3.7	365
Total All SFAs	100.0%	9,984
Mean	35.0	
Median	35.5	
STD	11.7	
(Unweighted N)		(79)

Totals may not equal 100% due to rounding.

[1]Includes only those SFAs that separately report student payments for reimbursable meals and a la carte sales.

Exhibit E.50

State and Local Subsidies as a Percent of Total Revenue: Distribution of SFAs

State and Local Subsidies/ Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 2%	28.4%	3,670
2% - < 4%	38.7	5,011
4% - < 6%	19.4	2,515
6% or more	13.5	1,741
Total All SFAs	100.0%	12,937
Mean	3.9	
Median	3.0	
STD	4.7	
(Unweighted N)		(94)

Exhibit E.51

Revenue from A la Carte Sales as a Percent of Total Revenue: Distribution of SFAs

A la Carte/ Total Revenue	Percent of SFAs	Total SFAs[1] (weighted)
Less than 10%	36.8%	3,673
10% - < 20%	32.7	3,260
20% - < 30%	22.3	2,225
30% - < 40%	5.4	542
40% or more	2.9	283
Total All SFAs	100.0%	9,984
Mean	15.4	
Median	11.8	
STD	10.5	
(Unweighted N)		(79)

[1]Includes only those SFAs that separately report student payments for reimbursable meals and a la carte sales.

Exhibit E.52

Other Cash Revenue as a Percent of Total Revenue: Distribution of SFAs

Other Cash Revenue/ Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 1%	76.1%	9,841
1% - < 2%	6.5	839
2% - < 3%	5.6	722
3% or more	11.9	1,535
Total All SFAs	100.0%	12,937
Mean	1.8	
Median	0.2	
STD	5.0	
(Unweighted N)		(94)

Exhibit E.53

Total Revenue as a Percent of Total Reported Costs: Distribution of SFAs

Total Revenue/ Total Reported Costs	Percent of SFAs	Total SFAs (weighted)
Less than 90%	11.1%	1,440
90% - < 95%	11.2	1,446
95% - < 100%	25.3	3,270
100% - < 105%	22.0	2,842
105% - < 110%	12.8	1,659
110% or more	17.5	2,280
Total All SFAs	100.0%	12,937
Mean	99.8	
Median	100.0	
STD	13.9	
(Unweighted N)		(94)

Exhibit E.54

Total Revenues from Reimbursable Meals as a Percent of Reported Reimbursable Meal Costs: Distribution of SFAs

Reimbursable Revenue/ Reported Reimbursable Cost	Percent of SFAs	Total SFAs (weighted)
Less than 80%	4.6%	456
80% - < 90%	14.5	1,451
90% - < 100%	4.5	452
100% - < 110%	29.3	2,929
110% - < 120%	16.4	1,642
120% - < 130%	19.2	1,921
130% or more	11.3	1,133
Total All SFAs	100.0%	9,984
Mean	112.6	
Median	108.2	
STD	24.8	
(Unweighted N)		(79)

Exhibit E.55

Total Revenues from Non-Reimbursable Meals as a Percent of Reported Non-Reimbursable Meal Costs: Distribution of SFAs

Total Non-Reimbursable Revenue/Reported Non-Reimbursable Cost	Percent of SFAs	Total SFAs (weighted)
Less than 30%	16.7%	1,662
30% - < 40%	14.1	1,411
40% - < 50%	9.5	952
50% - < 60%	0.3	25
60% - < 70%	14.7	1,471
70% - < 80%	8.7	870
80% - < 90%	5.4	543
90% - < 100%	9.8	979
100% - < 110%	11.4	1,141
110% or more	9.3	930
Total All SFAs	100.0%	9,984
Mean	70.5	
Median	64.9	
STD	40.2	
(Unweighted N)		(79)