Nutrition Assistance Program Report Series
The Office of Research, Nutrition and Analysis

Special Nutrition Programs Report No. CN-08-MCII

School Lunch and Breakfast Cost Study – II

Final Report

United States Department of Agriculture
Food and Nutrition Service

April 2008

Non-Discrimination Policy

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, DC 20250-9410 or call (800) 759-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

United States Department of Agriculture
Food and Nutrition Service

April 2008
Special Nutrition Programs
Report No. CN-08-MCII

School Lunch and Breakfast Cost Study – II

Final Report

Authors:
Susan Bartlett
Frederic Glantz
Christopher Logan

Submitted by:
Abt Associates Inc.
55 Wheeler Street
Cambridge, MA 02138-1168

Project Director:
Susan Bartlett

Submitted to:
Office of Research, Nutrition and Analysis
USDA, Food and Nutrition Service
3101 Park Center Drive
Alexandria, VA 22302-1500

Project Officers:
Patricia McKinney
John R. Endahl

This study was conducted under Task Order Number AG-3198-D-05-0069 ($3,738,354)

Suggested Citation:
U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis, *School Lunch and Breakfast Cost Study-II, Final Report,* by Susan Bartlett, et al. Project Officer: Patricia McKinney and John R. Endahl. Alexandria, VA: 2008.

Acknowledgements

This study would not have been possible without the generous support of the School Food Authorities (SFAs) in the 120 districts across the United States that agreed to participate in this study. We visited each district twice and spent considerable time meeting with district staff to complete surveys and reviews of financial data. Staff of selected schools within the district generously hosted our data collectors for a week, while we reviewed menus and recipes and conducted observations during meal times. In addition, they volunteered their time to complete detailed interviews on staff time devoted to the different activities associated with preparing school meals. State Child Nutrition Directors paved the way for data collection efforts in the SFAs and completed telephone surveys.

The study was conducted under the direction of the Office of Research, Nutrition, and Analysis in the Food and Nutrition Service, USDA. We would like to thank our two project officers, Patricia McKinney and John Endahl for their guidance and support throughout the entire study. In addition, Susan Fouts, Lynn Rodgers, Joan Tressler and Denise Londos of the Child Nutrition Division of FNS provided valuable comments throughout the course of the study.

Many persons at Abt Associates contributed to the study. In particular, Jon Schmalz directed the data collection effort. Patty Connor and Gail Langeloh oversaw the collection and processing of menu and meals data. K.P. Srinath, as sampling statistician, developed the sampling strategy and the analytic weights. Ellie Lee provided programming support, Nancy Burstein served as technical reviewer, and Eileen Fahey produced the report.

Executive Summary

Study Background

The *School Lunch and Breakfast Cost Study-II* (SLBCS-II) was carried out by Abt Associates Inc. of Cambridge, Massachusetts, under contract to the Food and Nutrition Service (FNS), US Department of Agriculture. The study provides a detailed examination of the cost of producing reimbursable meals in the National School Lunch Program (NSLP) and the School Breakfast Program (SBP) during school year (SY) 2005-06. Information was collected from a nationally representative sample of 120 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 353 schools.

FNS has conducted several studies to examine meal production costs in the NSLP and the SBP. The last study, the School Lunch and Breakfast Cost Study (SLBCS-I), used a direct measurement methodology to develop national average meal production cost estimates for reimbursable NSLP and SBP meals. SLBCS-I was completed in 1994 and used data collected during the 1992-1993 school year. Reimbursement rates provided to States for lunches and breakfasts served in the NSLP and the SBP have been adjusted annually since SLBCS-I to reflect changes in the Food Away From Home series of the Consumer Price Index for All Urban Consumers.

Much has changed in school foodservice since SLBCS-I was conducted, and although reimbursement rates in the NSLP and SBP have been adjusted to account for inflation, there is concern that the current reimbursement rates do not adequately reflect the current cost of producing school lunches and breakfasts. Information from SLBCS-II will allow FNS to assess the adequacy of current meal reimbursement rates in these programs.

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

Reported Cost of Producing Reimbursable Meals

Reported costs include only those costs that are charged to SFA budgets. From the SFA's perspective, reported costs are the costs of running the NSLP and SBP and are the costs that they are expected to cover. In addition, NSLP and SBP subsidies for free meals are, on average, expected to cover costs. Food costs (including the value of donated commodities) accounted for about 46 percent of reported costs, while labor costs accounted for slightly less than 45 percent of reported costs. All other costs, including supplies, contract services, indirect charges by school districts, etc. represented slightly less than 10 percent of reported costs.

The average costs of producing reimbursable meals in the NSLP and SBP are examined from two perspectives. Costs are first examined using the SFA as the unit of analysis. The SFA-level analysis weights the sample so as to count each SFA nationwide equally, regardless of size. From this perspective, estimated costs represent the average cost for a "typical" SFA.

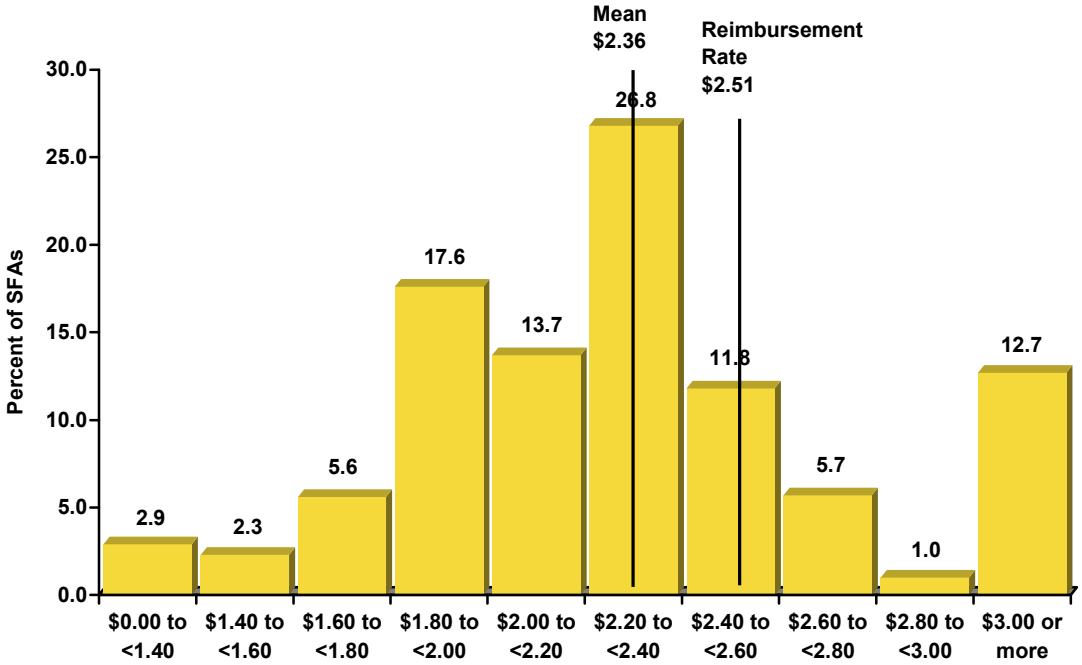
Costs are also examined using the meal as the unit of analysis. This analysis gives equal weight to each reimbursable meal, and since most reimbursable meals are produced in large SFAs, the results are dominated by the costs incurred in large SFAs. From this perspective, estimates represent the cost of an average reimbursable meal.

Reported Cost per Reimbursable Lunch

In SY 2005-06 the mean reported cost per reimbursable lunch was $2.36 when the unit of analysis is the SFA (Exhibit ES.1). The mean reported cost of producing a reimbursable lunch was $2.28 when the unit of analysis is the NSLP meal (Exhibit ES.2). The difference reflects the fact that reported costs are somewhat lower in the small number of very large SFAs that produce a large share of total NSLP lunches. The mean reported cost of producing a reimbursable lunch in SY 2005-06 was considerably less than the prevailing USDA subsidy for a free lunch of $2.51.[1] In 78 percent of SFAs, the reported cost of a reimbursable lunch was less than the USDA subsidy for a free lunch. Similarly, when the unit of analysis is the NSLP meal, 76 percent of all lunches served in SY 2005-06 were produced at a reported cost that was less than the reimbursable rate for a free lunch.

Exhibit ES.1

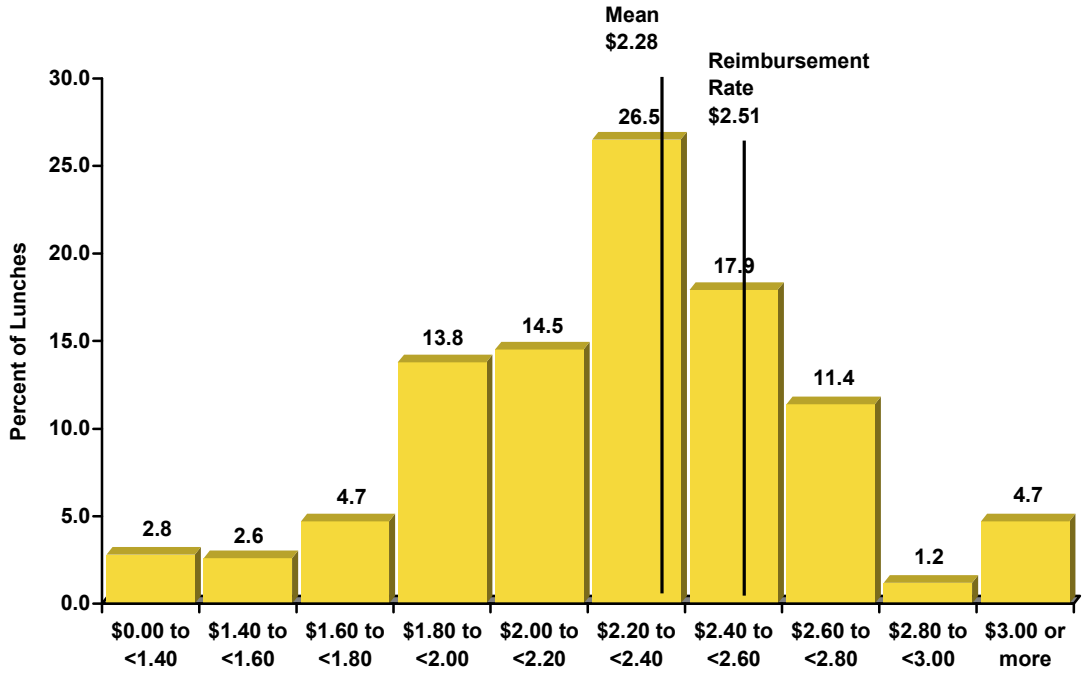
Distribution of SFAs by Reported Cost per Reimbursable Lunch



[1] This figure represents the midpoint between the lower ($2.495) and higher ($2.515) subsidy rates; schools qualify for the higher rate if a specified percentage of their lunches are provided free or at a reduced rate. The rates include $2.32 or $2.34 in cash reimbursements plus $.175 in entitlement commodities.

Exhibit ES.2

Distribution of Lunches by Reported Cost per Reimbursable Lunch



Reported Costs per Reimbursable Breakfast

In SY 2005-06, when the unit of analysis is the SFA, the mean reported cost of producing a reimbursable breakfast was $1.92 (Exhibit ES.3). When the unit of analysis is the SBP meal, the mean reported cost of producing a reimbursable breakfast was only $1.46 (Exhibit ES.4). Again, this reflects the much lower unit costs in SFAs serving large numbers of reimbursable breakfasts. These large SFAs serve a larger proportion of total breakfasts than total lunches, accounting for the larger difference between the SFA-level and meal-level mean reported costs for breakfasts compared to the difference observed for lunches.

The regular reimbursement rate for a free breakfast in SY 2005-06 was $1.27, with a "severe need" rate of $1.51.[2] In contrast to lunch costs, where the reported cost of producing a reimbursable lunch tended 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 64 percent of SFAs the

[2] SFAs receive reimbursement at the higher severe need level for free and reduced price breakfasts which are served in schools in which at least 40 percent of lunches were free or reduced price in the second preceding school year.

Exhibit ES.3

Distribution of SFAs by Reported Cost per Reimbursable Breakfast

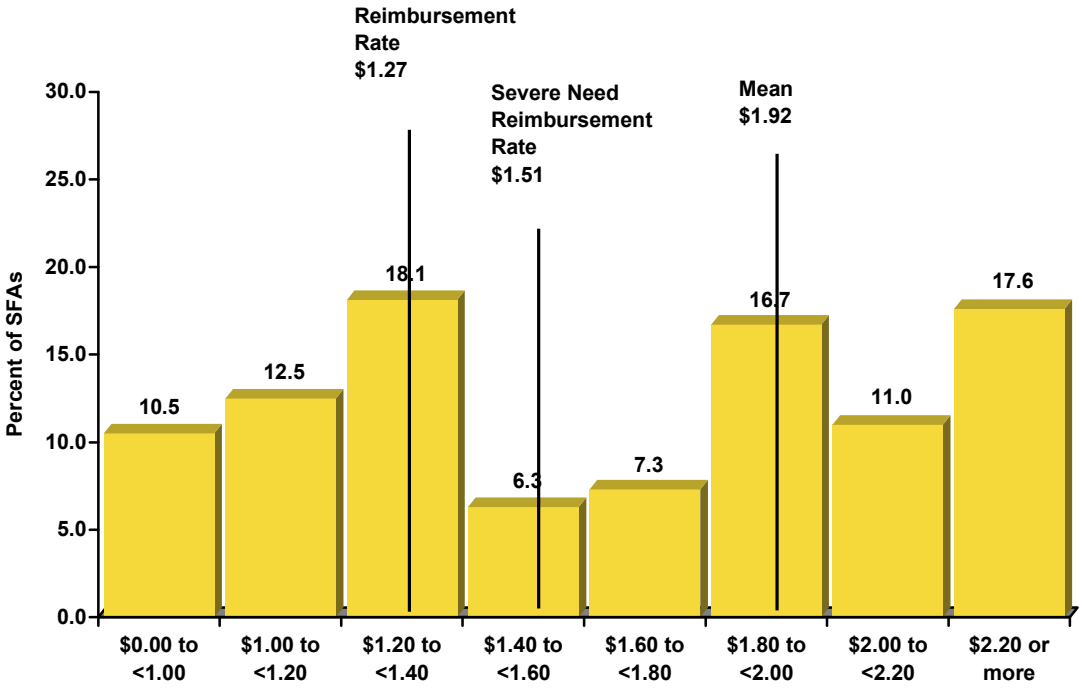
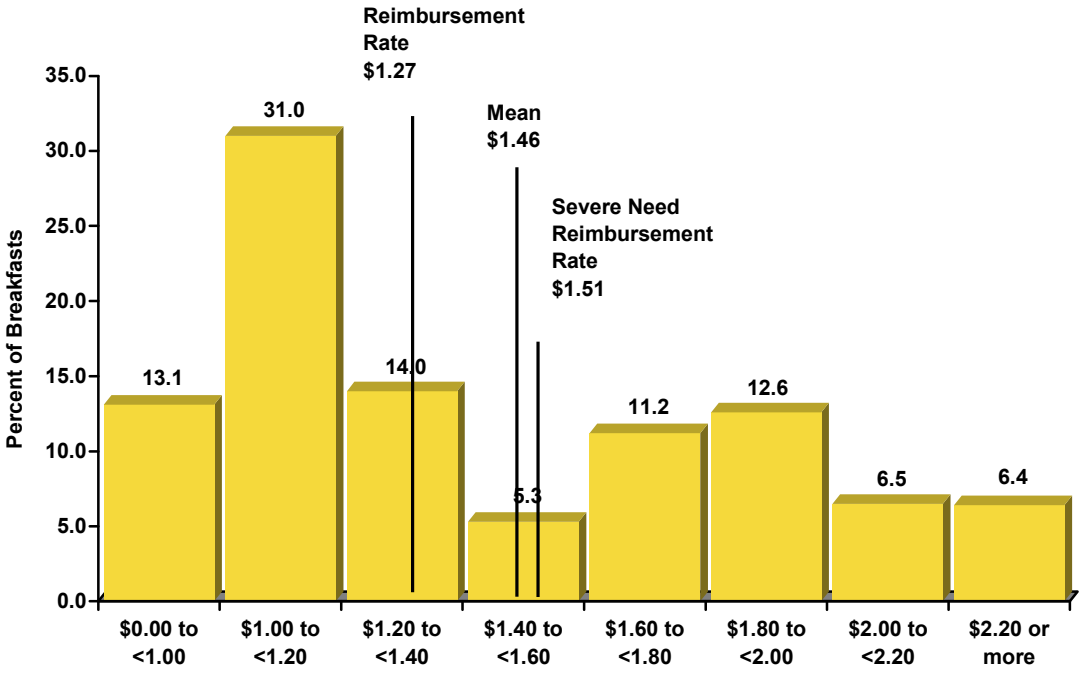


Exhibit ES.4

Distribution of Breakfasts by Reported Cost per Reimbursable Breakfast



reported cost of producing a reimbursable breakfast was greater than the applicable reimbursement rate for a free breakfast.[3] Even when the unit of analysis is the SBP meal so that larger SFAs are counted more heavily than smaller SFAs, 42 percent of all breakfasts served in SY 2005-06 were produced at a reported cost that exceeded the reimbursement rate for a free breakfast.

Meal Production Systems

The study examined meal production costs by the types of meal production system used by SFAs, as defined by the mix of the various types of kitchens used by schools in the SFA. Meal production systems included: a) on-site kitchens only; b) base/central kitchens only; c) mostly on-site kitchens; and d) mostly satellite kitchens.[4]

There were no significant differences in the reported cost of producing reimbursable lunches based on the type of meal production system used by SFAs. However, the mean reported cost of producing reimbursable breakfasts varied by the type of meal production system used, with SFAs using mostly on-site school kitchens having the lowest average cost per reimbursable breakfast ($1.38) and SFAs using only base/central kitchens having the highest average cost per reimbursable breakfast ($2.10).[5]

Reported Administrative Labor Costs

A major research objective for SLBCS-II was to examine the proportion of foodservice labor costs that were attributable to foodservice administration. This study broadly defined foodservice administration to include regular administrative activities such as planning, budgeting and management for the foodservice program and other non-production activities such as maintenance of foodservice equipment and warehousing of food and supplies. Across SFAs, administrative labor costs accounted for an average of 19 percent of total reported labor costs (Exhibit ES.5), and 8 percent of total reported costs (Exhibit ES.6).

---

[3] The severe-need reimbursement rate was used for all schools in SFAs in which at least 40 percent of the lunches were reimbursed at the free or reduced-price rates because data to determine severe need status of individual schools were not available to this study. In fact, SFAs receive the higher severe need rate for breakfasts served in ***individual schools*** in which at least 40 percent of lunches were free or reduced price. According to FNS program data, in SY 2005-06, 89 percent of all free breakfasts served in the School Breakfast Program were reimbursed at the severe need rate. The study assumption that all breakfasts in an SFA were reimbursed at the same rate has only a small effect on the estimate that in 64 percent of SFAs the reported cost of producing a reimbursable breakfast was above the applicable reimbursement rate. The reported cost of producing a reimbursable breakfast was above the regular free reimbursement rate in 70 percent of all SFAs and was above the severe need reimbursement rate in 57 percent of all SFAs.

[4] Central kitchens are not located in a school; on-site, or independent, school kitchens prepare all of the food served in the school in which they are located; base school kitchen prepare food for other schools in addition to the one in which they are located; and satellite school kitchens receive some or all of the food served in the school in which they are located from a base or central kitchen.

[5] These are the average costs using the SFA as the unit of analysis. There were no significant differences in the average cost of producing a reimbursable breakfast across meal production systems when the SBP breakfast is the unit of analysis.

Exhibit ES.5

Administrative Labor Costs as a Percentage of Reported Labor Costs

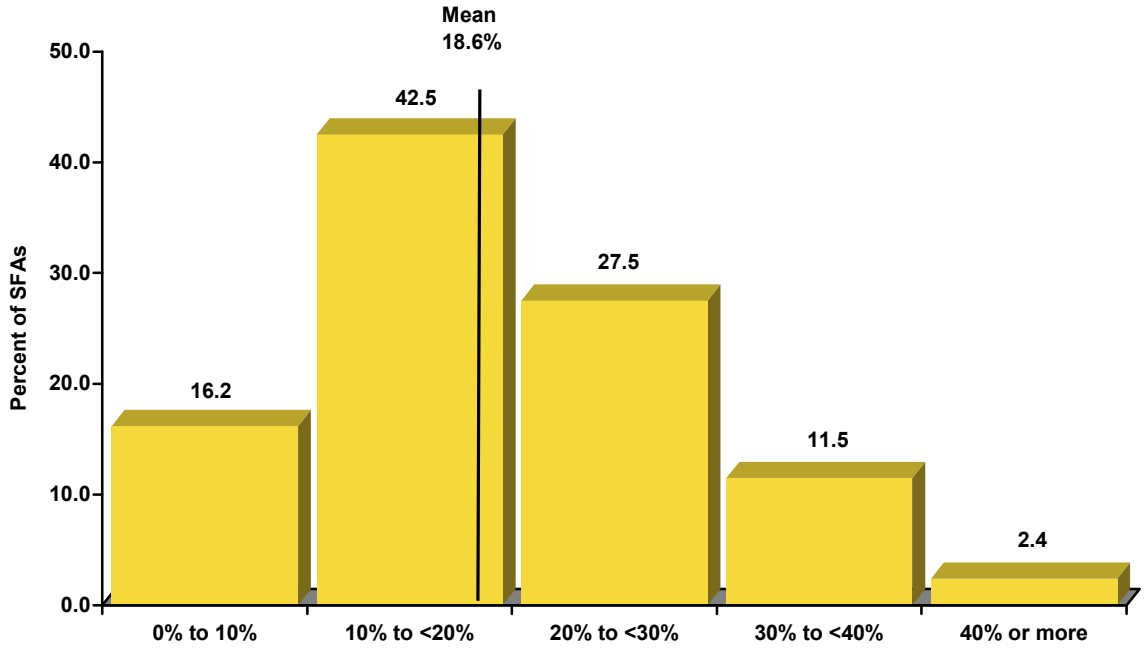
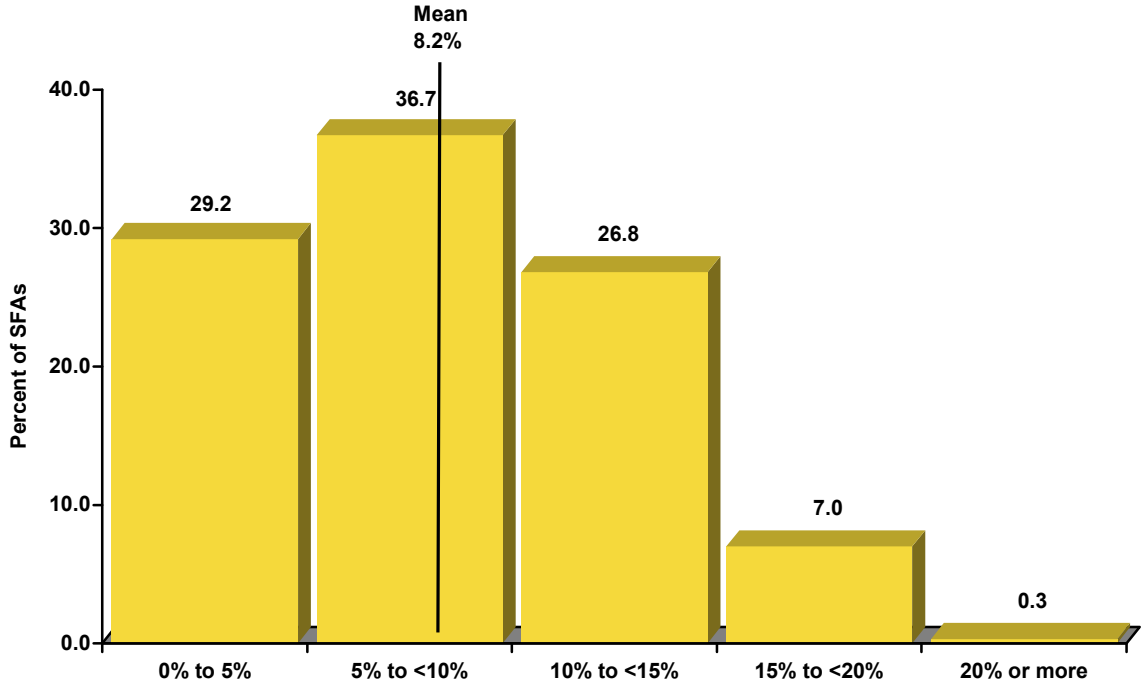


Exhibit ES.6

Administrative Labor Costs as a Percentage of Total Reported Costs



Full Cost of Producing Reimbursable Meals

While reported costs include only those costs that are charged to SFA budgets, and are the costs that they are expected to cover, the full cost of producing reimbursable meals also includes those costs incurred by the school district in support of SFA operations that are not charged to the SFA (unreported costs).

Full Cost per Reimbursable Lunch

In SY 2005-06 full costs per reimbursable lunch ranged from less than $2.00 to over $3.40, with a mean of $2.91 when the unit of analysis is the SFA (Exhibit ES.7). The mean reported cost of producing a reimbursable lunch was $2.79 when the unit of analysis is the NSLP meal (Exhibit ES.8). The difference reflects the fact that (as with reported costs) full costs are relatively low in the small number of very large SFAs that produce a large share of total NSLP lunches. The mean full cost of producing a reimbursable lunch in SY 2005-06 was considerably more than the prevailing USDA subsidy for a free lunch of $2.51. In 68 percent of SFAs, the full cost of a reimbursable lunch was more than the USDA subsidy for a free lunch. Similarly, 72 percent of reimbursable lunches were produced at a full cost that was greater than the USDA subsidy for a free lunch.

Full Costs per Reimbursable Breakfast

In SY 2005-06, when the unit of analysis is the SFA, the mean full cost of producing a reimbursable breakfast ranged from less than $1.20 to more than $2.60 with a mean of $2.50 (Exhibit ES.9). When the unit of analysis is the SBP meal, the mean full cost of producing a reimbursable breakfast was only $1.81 (Exhibit ES.10). Again, this reflects the much lower unit costs in SFAs serving large numbers of reimbursable breakfasts. In 82 percent of SFAs the full cost of producing a reimbursable breakfast was greater than the applicable reimbursement rate for a free breakfast. When the unit of analysis is the SBP meal, 67 percent of all breakfasts served in SY 2005-06 were produced at a full cost that exceeded the applicable reimbursement rate for a free breakfast.

Meal Production Systems

As with reported costs, there were no significant differences in the full cost of producing reimbursable lunches based on the type of meal production system used by SFAs. However, the mean full cost of producing reimbursable breakfasts varied by the type of meal production system used, with SFAs using mostly on-site school kitchens having the lowest average cost per reimbursable breakfast ($1.79) and SFAs using only base/central kitchens having the highest average cost per reimbursable breakfast ($2.75).[6]

Full Administrative Labor Costs

On a full-cost basis, administrative labor accounted for an average of 20 percent of total labor costs, and 10 percent of total full costs.

[6] These are the average full costs using the SFA as the unit of analysis. There were no significant differences in the average full cost of producing a reimbursable breakfast when the SBP breakfast is the unit of analysis.

Exhibit ES.7

Distribution of SFAs by Full Cost per Reimbursable Lunch

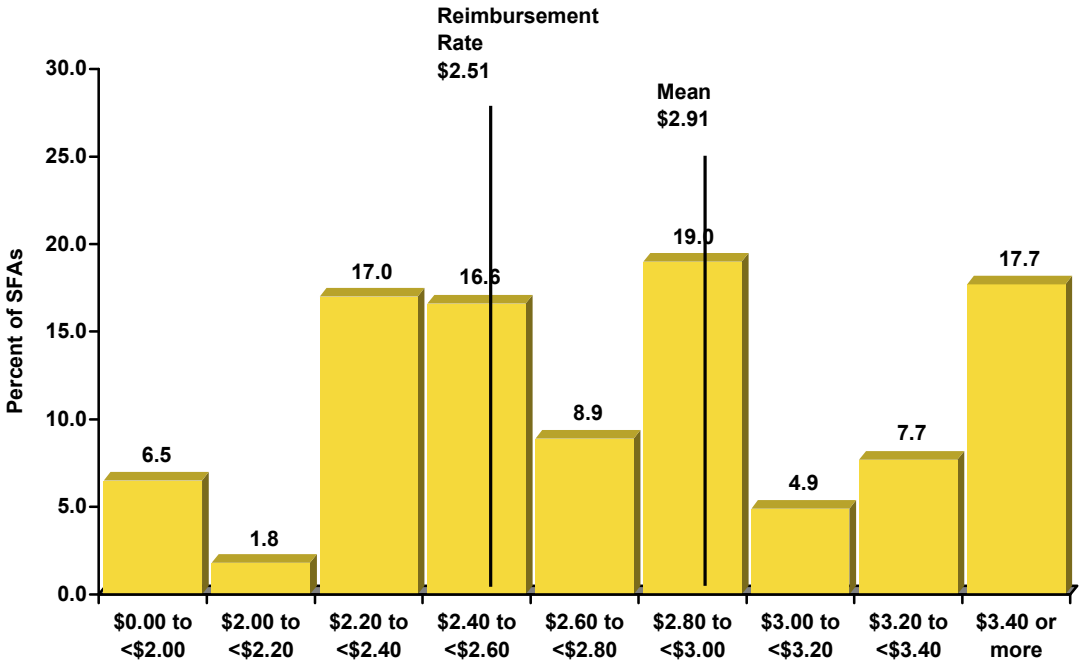


Exhibit ES.8

Distribution of Lunches by Full Cost per Reimbursable Lunch

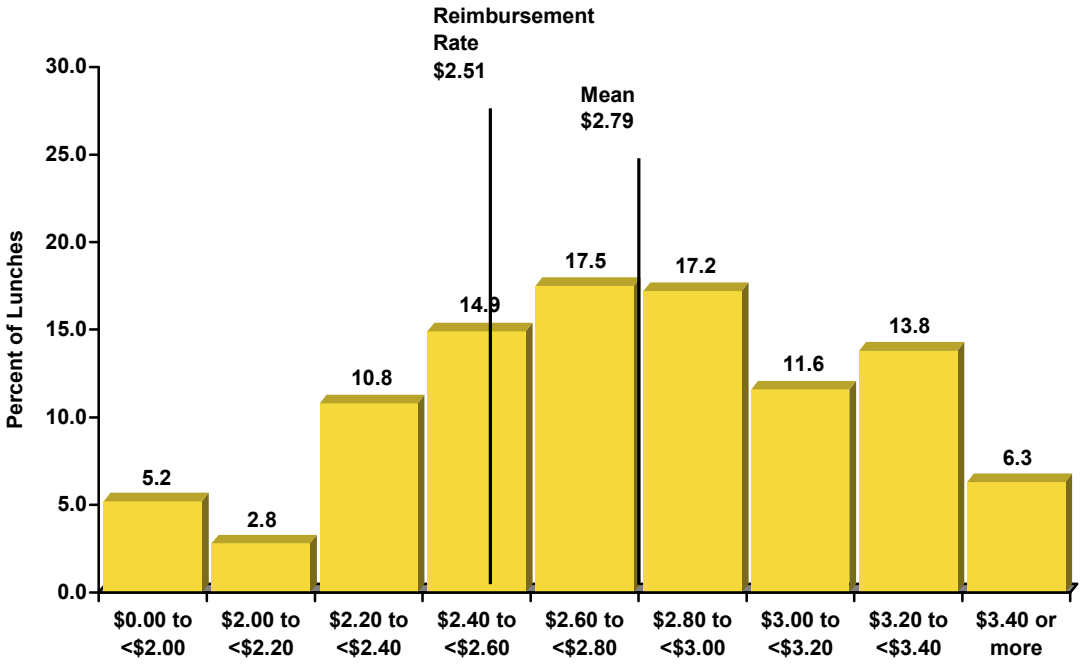


Exhibit ES.9

Distribution of SFAs by Full Cost per Reimbursable Breakfast

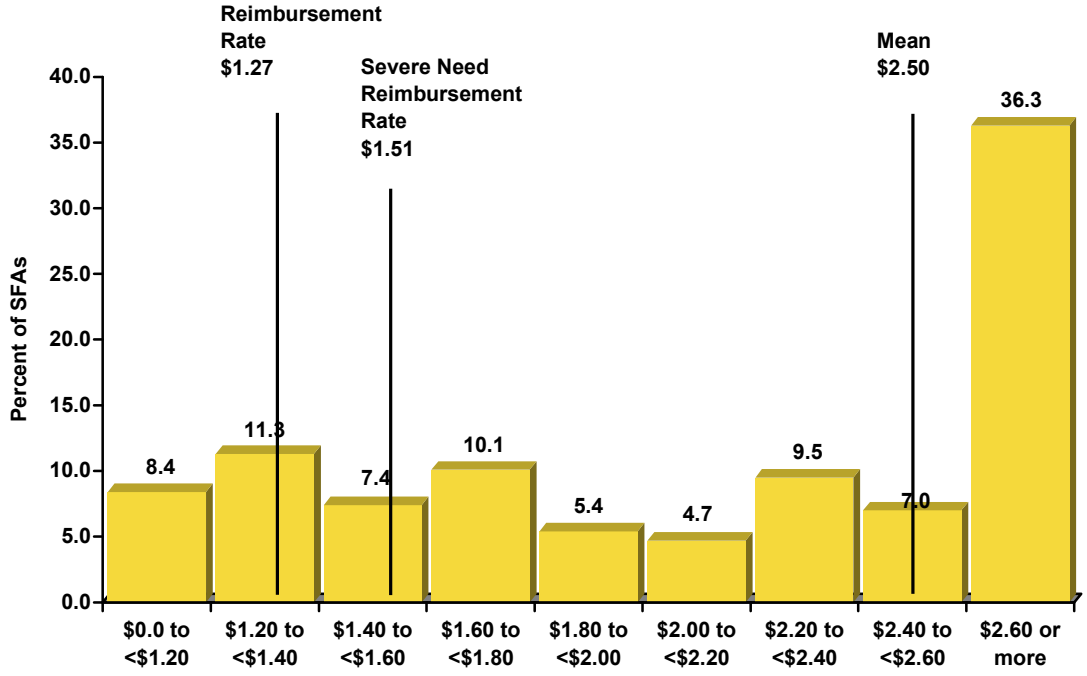
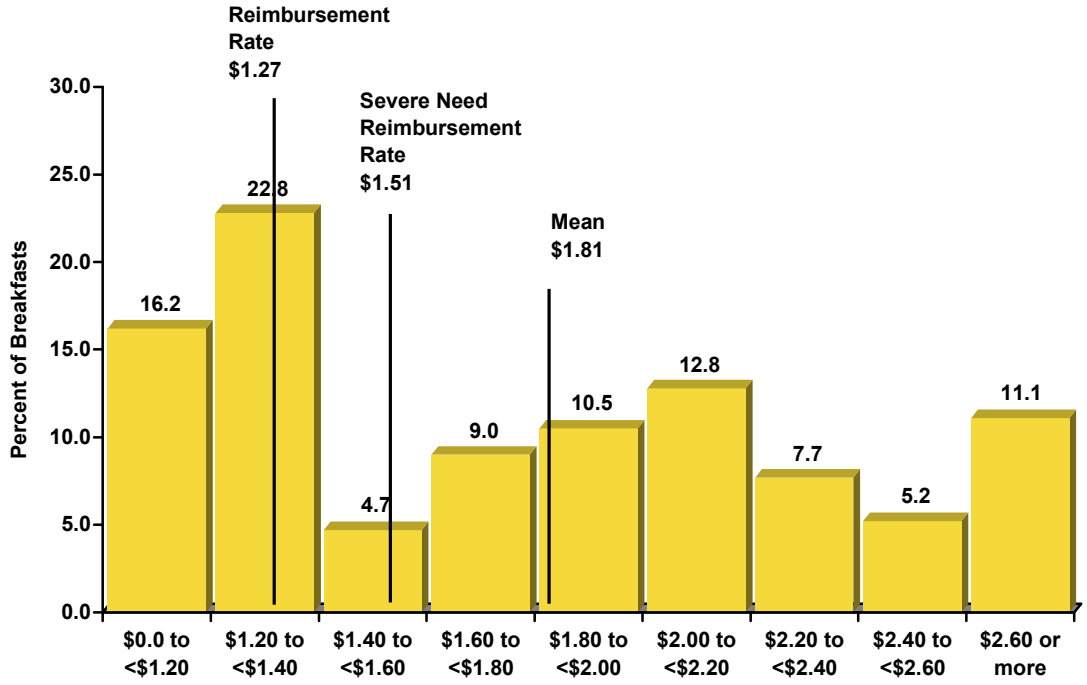


Exhibit ES.10

Distribution of Breakfasts by Full Cost per Reimbursable Breakfasts



Unreported Costs

Most school districts incur some costs in support of their foodservice operations that are not charged to the SFA budget. In some cases, school districts chose to bear these costs as a way to subsidize the SFA, while in other cases districts carried the costs because the SFA had insufficient funds to cover all expected costs. In SY 2005-06, these unreported costs accounted for an average of 19 percent of the full cost of foodservice. Three categories of unreported costs account for nearly all unreported costs (Exhibit ES.11). Unreported labor (which includes salaries and fringe benefits) represented 61 percent of total unreported costs, unreported indirect costs represented 26 percent, and unreported equipment depreciation represented 10 percent.

Indirect Costs

SFAs (and other school district grants and programs) often use a variety of resources that are provided or purchased by the school district, including:

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

There are several ways in which a school district may account for these costs. First, costs which the school district can and wants to identify as costs related to foodservice are treated as *direct foodservice costs*. Alternatively such costs may be treated as *indirect costs*. Indirect costs represent overhead-type expenses; they are expenses incurred by the school district that are not practical to identify with specific functions or activities (such as foodservice), but are necessary for the general operation of the organization and the conduct of activities it performs.

Many school districts use *indirect cost rates* to distribute such costs to benefiting activities.[7] An indirect cost rate is the ratio of an organization's (in this case the school district's) indirect costs to its direct costs, computed for the purpose of allocating indirect costs to grants and programs operated by the organization.[8]

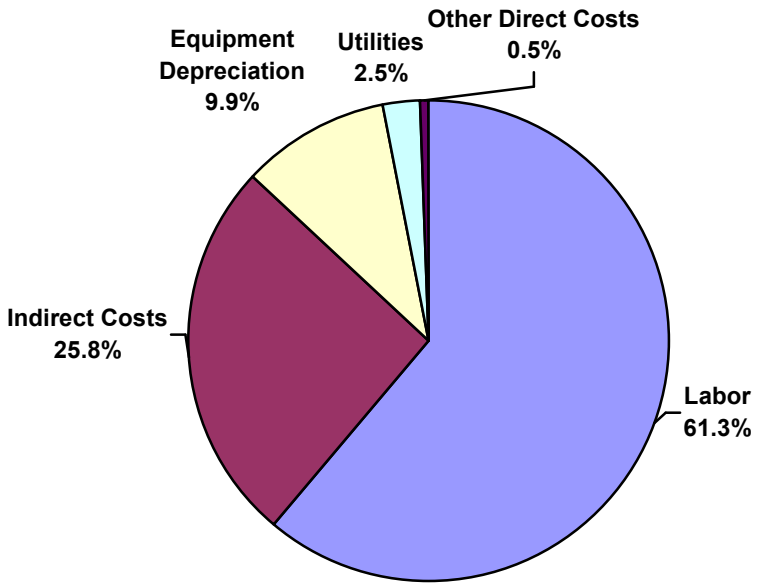
While nearly all SFAs (95 percent) had an indirect cost rate that could be applied to foodservice, most SFAs (79 percent) did not report any indirect costs on the SFA's expense statement. Only 9 percent

[7] The Office of Management and Budget Circular A-87 sets guidelines for which indirect costs are allowable to be allocated to grants and programs receiving Federal funds; individual programs may have additional restrictions. State and local governments may use methods other than indirect cost rates, such as allocation of costs in proportion to staff hours, to allocate indirect costs. In this study, no school district used an indirect cost allocation method other than indirect cost rates.

[8] U.S. Department of Education regulates the allocation of indirect costs pool by school districts to its grants and oversees the role of State Education Agencies (SEAs) in setting the methods by which school districts compute and use indirect cost rates. SEAs generally specify the types of indirect and direct costs included in the computation of school district indirect cost rates.

Exhibit ES.11

Composition of Unreported Costs



of all SFAs reported all of the indirect costs attributable to foodservice, and 7 percent reported some, but not all, of the indirect costs attributable to food service.

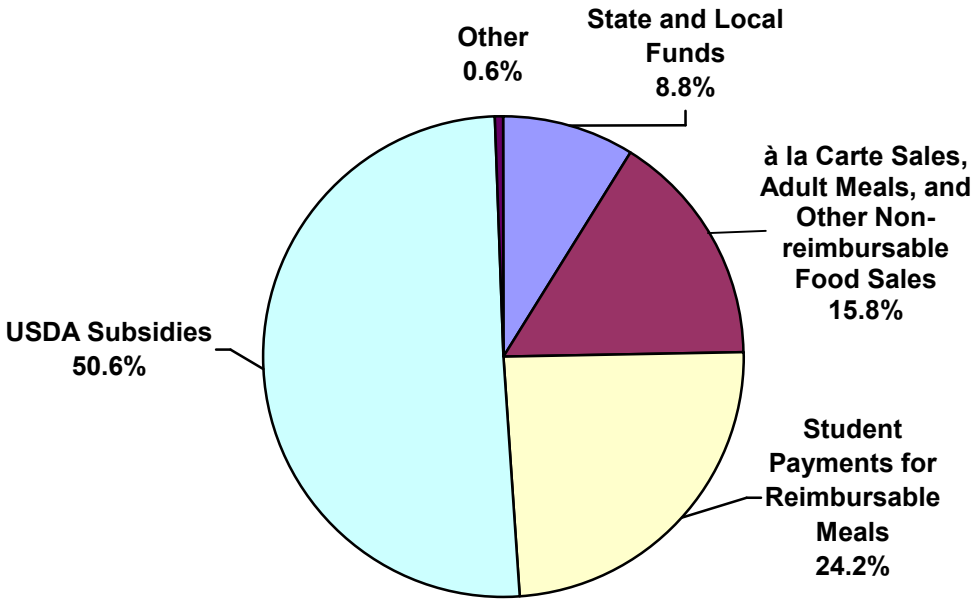
It is important to distinguish between reporting indirect costs and recovering indirect costs. When a school district charges an SFA for (all or part of) the indirect costs attributable to SFA operations these indirect costs are reported on the SFA's expense statement. However, payment or recovery of these reported indirect costs requires that funds be actually transferred from the SFA account to the school district's general fund. It is quite rare for such transfers to take place. Among the 16 percent of school districts that had at least some reported indirect costs, about one-quarter (4 percent of all districts) recovered all of the reported indirect costs from the foodservice account. The most common reason for not recovering all reported indirect costs from foodservice was that the district did not charge indirect costs for any grant or program. For the average SFA, unreported indirect costs accounted for 26 percent of all unreported costs.

Revenues

Revenues derived from reimbursable meals, including Federal, State, and local subsidies tied to reimbursable meals, other State and local funds, and student payments for reimbursable meals accounted for an average of 84 percent of SFA revenues in SY 2005-06 (Exhibit ES.12). USDA subsidies accounted for an average of 51 percent of total SFA revenues—45 percent from meal reimbursements and 5 percent from donated commodities. Student payments for reimbursable meals accounted for an average of 24 percent of total SFA revenues, and state and local revenues accounted for 9 percent of total SFA revenues. à la carte sales, adult meals, and other nonreimbursable food sales represented only 16 percent of the average SFA's total revenues.

Exhibit ES.12

Composition of SFA Revenues



Comparison of Costs and Revenues

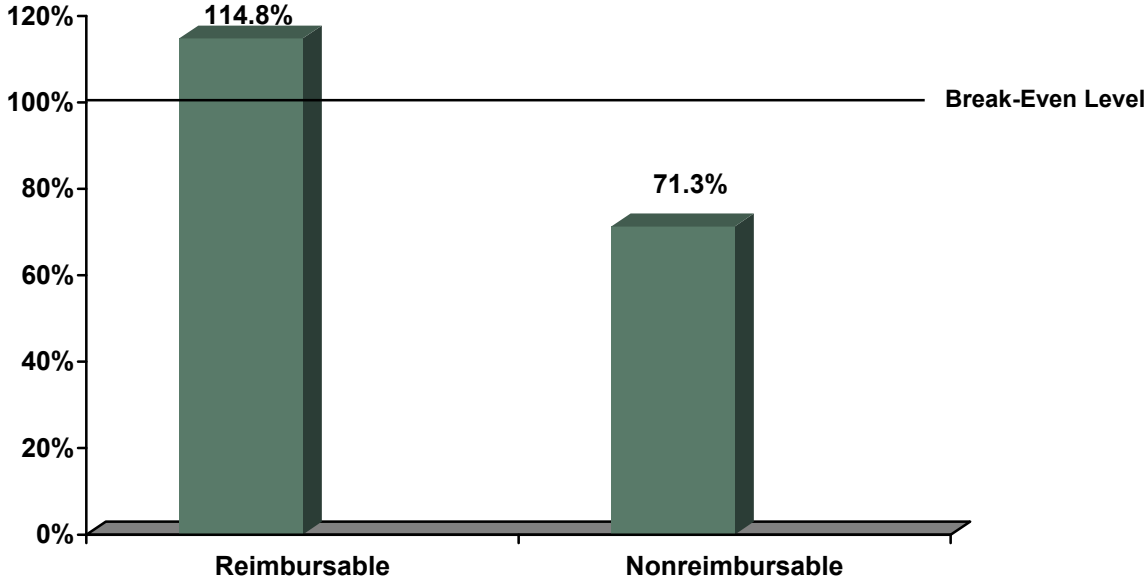
Reported Costs

SFAs are required to operate the school foodservice on a nonprofit basis. Program regulations define a nonprofit foodservice as one operated primarily for the benefit of enrolled children, all revenue from which is used solely to operate or improve the foodservice. An SFA must limit the net cash resources of its nonprofit foodservice to three months' average expenditures. Usually SFAs operate at the break-even level, i.e., costs equal revenues from all sources. Nonprofit status is determined by the financial status of the school foodservice ***as a whole*** rather than the financial status of each Federal program separately. SFAs must accrue all revenues from the school foodservice to a nonprofit foodservice account, including Federal lunch, breakfast, and snack payments; all funds from this account must be used to support the nonprofit school foodservice, which can include other parts of their foodservice operations such as à la carte and adult food sales. SFAs are not required to maintain separate cost and revenue records for the NSLP, SBP, or other programs within the nonprofit school foodservice account.

In SY 2005-06, across SFAs, revenues from reimbursable meals exceeded the reported cost of producing those meals by an average of 15 percent. By contrast, revenues from nonreimbursable meals fell short of the cost of producing those meals by an average of 29 percent (Exhibit ES.13). The average SFA used revenues from reimbursable meals to offset the cost of producing à la carte and other nonreimbursable food items. Combining reimbursable and nonreimbursable meals, reported costs were essentially equal to revenues (101 percent), indicating that SFAs typically operated at a break-even level.

Exhibit ES.13

Ratio of Revenue to Reported Cost for Reimbursable and Nonreimbursable Meals



While reimbursable lunches and breakfasts taken together generated a surplus, this is due entirely to the surplus revenues generated by reimbursable lunches. Revenues from reimbursable lunches exceeded the costs of producing those meals by an average of 16 percent, while revenues from reimbursable breakfasts fell short of the cost of producing those meals by an average of 4 percent (Exhibit ES.14). This is consistent with the relationship of Federal subsidy rates (meal reimbursements plus entitlement commodities) to reported meal costs. In SY 2005-06 the Federal subsidy for a free lunch covered or exceeded the reported cost of producing reimbursable lunches in 78 percent of SFAs. Based on the applicable reimbursement rates as determined for this study, the regular Federal subsidy for a free breakfast covered or exceeded the reported costs of producing reimbursable breakfasts in only 36 percent of SFAs. The regular Federal subsidy for a free breakfast covered or exceeded reported costs for breakfast in 30 percent of SFAs, and the severe need subsidy covered or exceeded reported costs in 43 percent of SFAs (Exhibit ES.15).

Full Costs

From an SFA's perspective, reported costs are the costs that they are expected to cover from the revenues that accrue to the nonprofit school foodservice account. However, as noted above, reported costs do not reflect all of the costs of foodservice operations. Given that, on average, SFA revenues just covered their reported costs, SFA revenues fell considerably short of covering their full costs. On average, SFA revenues covered only 82 percent of their full costs. Revenues from reimbursable meals also fell short of covering the full cost of producing these meals, with a revenue to cost ratio of 92 percent. Similarly, revenues from nonreimbursable meals fell short of the full cost of producing these meals, with a revenue to cost ratio of 61 percent.

Exhibit ES.14

Ratio of Revenue to Reported Cost for Reimbursable Lunches and Reimbursable Breakfasts

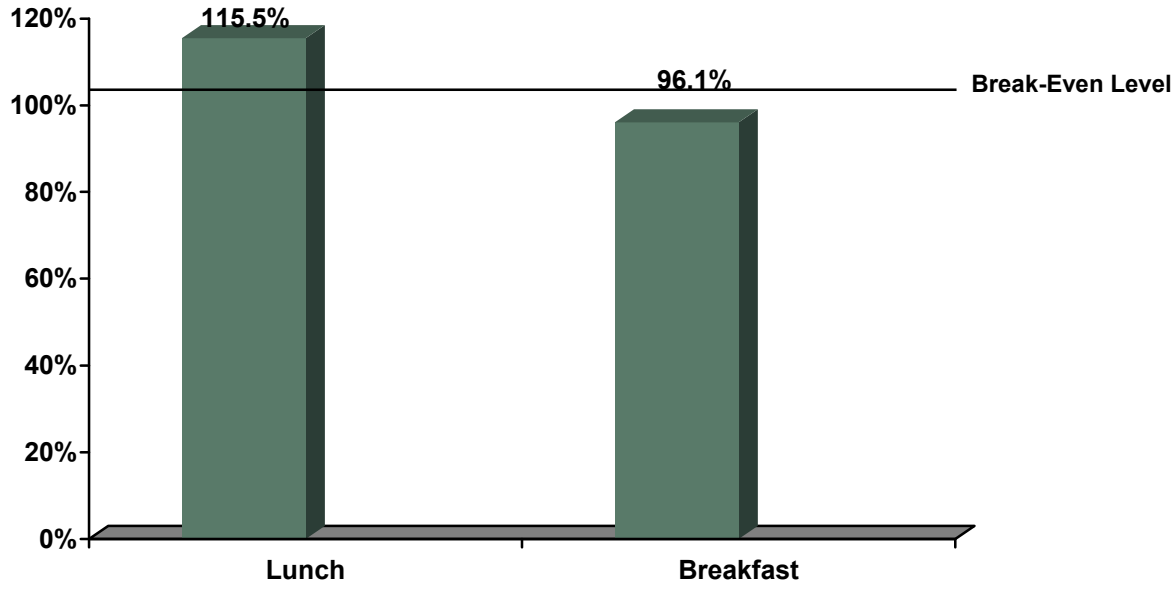
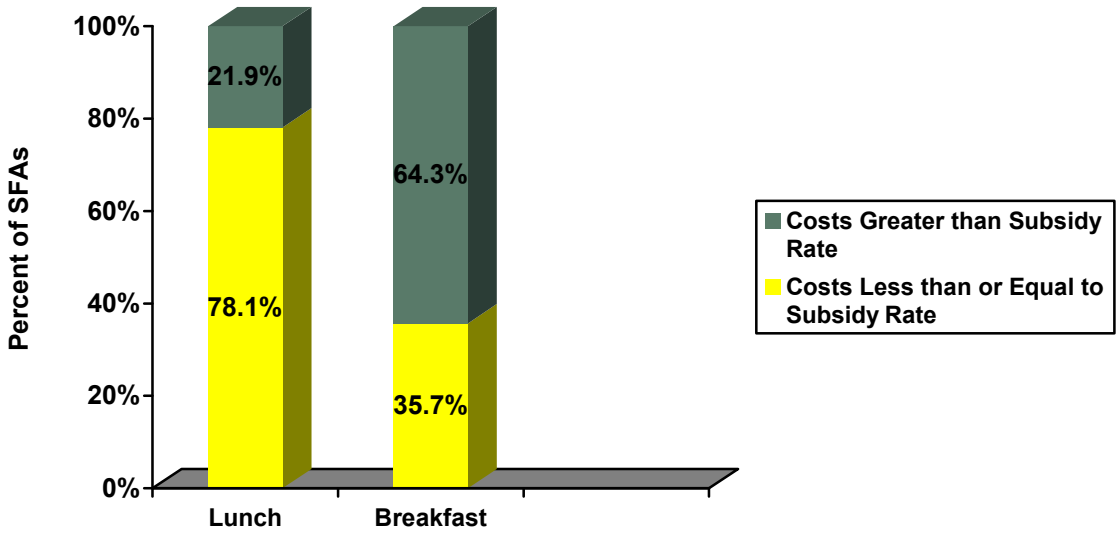


Exhibit ES.15

Percent of SFAs with Reported Costs Greater Than the Subsidy Rate and Percent Less Than or Equal to the Subsidy Rate for a Free Meal



Comparisons to SLBCS-I

One key finding is that, when the SFA is the unit of analysis, there was no statistically significant difference in the real (inflation-adjusted) reported cost of producing reimbursable meals over the 14 years that elapsed between SLBCS-I and SLBCS-II, even though the nutritional standards have changed. However, there was a statistically significant difference in inflation-adjusted unreported costs for the average SFA, when measured on the same basis as for SLBCS-I.[9] As a result, the full costs for producing reimbursable meals were below the real (inflation-adjusted) full costs in SY 1992-93. Unreported costs as a percentage of full costs decreased from 19 percent SY 1992-93 to 12 per cent in SY 2005-2006. In 2006 dollars, for the average SFA, the SY 2005-06 full cost of producing a reimbursable lunch was $2.72, compared to $2.97 for SY 1992-93 (though this observed difference is not statistically significant). For reimbursable breakfasts, for the average SFA, the full cost in 2006 dollars was $2.25 in SY 2005-06, compared to $2.32 in SY 1992-93 (not a statistically significant difference).

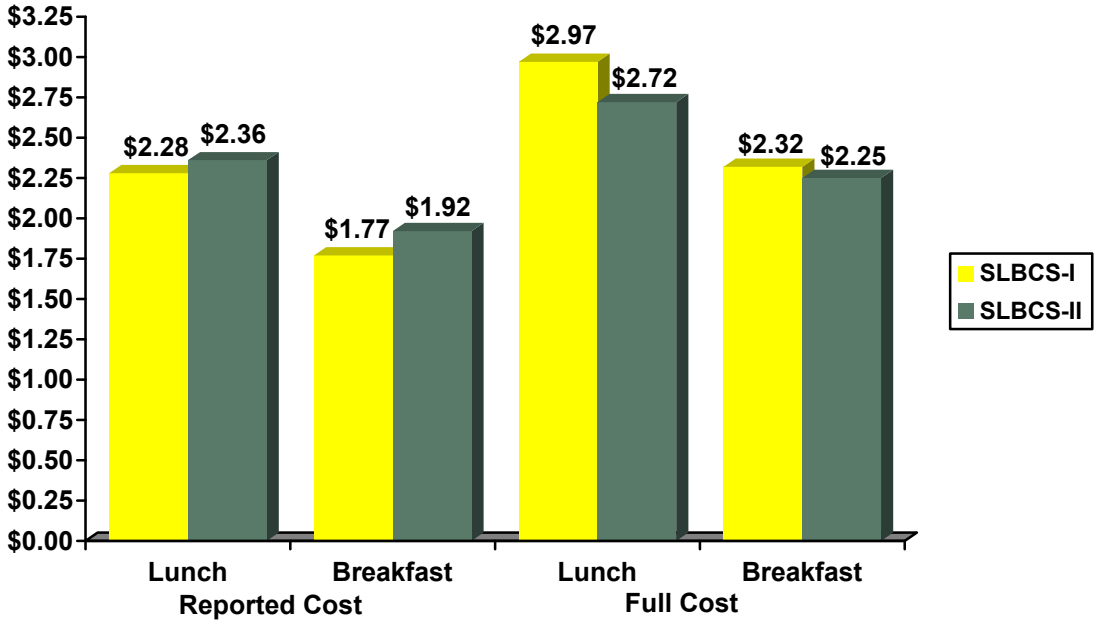
Using the meal as the unit of analysis, the inflation-adjusted full cost of producing lunches was significantly lower in SY 2005-06 than in SY 1992-93.

Exhibit ES.16 shows the comparison of inflation-adjusted mean reported and full costs between SLBCS-I and SLBCS-II.

[9] This comparison uses full costs as defined for SLBCS-I, not the more inclusive definition of full costs used in SLBCS-II. The difference in methodology reflects the treatment of school supervisory staff in the cafeteria during mealtime. These staff were not included in unreported costs in SLBCS-I, but were included in SLBCS-II. The figures presented in Chapter Four include school supervisory staff in unreported costs. These staff were removed from unreported costs for the comparison to SLBCS-I presented in Chapter Nine.

Exhibit ES.16

Comparison of the Mean Reported and Full Cost per Reimbursable Meal: SLBCS-I vs. SLBCS-II



Contents

Contents

Contents

List of Exhibits

List of Exhibits

List of Exhibits

List of Exhibits

Chapter One

Introduction

The School *Lunch and Breakfast Cost Study-II* (SLBCS-II), conducted for the Food and Nutrition Service (FNS), US Department of Agriculture (USDA), was designed to estimate the national average cost of producing meals in the National School Lunch Program (NSLP) and the School Breakfast Program (SBP). This information will allow FNS to assess the adequacy of current meal reimbursement rates in these programs. The study was designed to meet six specific objectives:

- Determine the national average reported and full costs to produce NSLP and SBP meals using the same methodology that was used in the *School Lunch and Breakfast Cost Study* (SLBCS-I) in 1994.
- Determine the extent to which indirect costs are charged to the nonprofit School Foodservice account of the School Food Authority (SFA),[10] the value of these costs, and how they are applied.
- Determine the value of administrative costs used to produce NSLP and SBP reimbursable meals.[11]
- Determine the composition of SFA revenues, including Federal reimbursements, cafeteria sales, and State and local cash assistance, and compare these revenue sources to meal costs.
- Determine if meal production costs vary by food production system.
- Examine SFAs' end-of-year cash balances.

FNS has conducted several studies to examine meal production costs in the NSLP and the SBP. The last study was the *School Lunch and Breakfast Cost Study (SLBCS-I)*, which used a direct measurement methodology to develop national average meal production costs estimates for reimbursable NSLP and SBP meals. SLBCS-I was completed in 1994 and used data collected during the 1992-1993 school year (SY). Reimbursement rates provided to States for lunches and breakfasts served in the NSLP and the SBP have been adjusted annually since SLBCS-I was conducted, to reflect changes in the Food Away From Home series of the Consumer Price Index for All Urban Consumers.

---

[10] 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 (SFA) 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).

[11] This study has broadly defined administrative costs to include all activities that are not part of meal production costs, that is, the activities that are not directly traceable to the production and service of a specific meal. Foodservice administrative costs include administrative tasks performed by central foodservice staff, central school district (non-foodservice) personnel, school-based foodservice staff (kitchen managers), and other school-based staff (such as principals, teachers, and school office staff). As defined for this study, administrative costs also include labor costs associated with other activities such as maintenance of foodservice equipment and warehousing of food and supplies.

Much has changed in school foodservice since SLBCS-I was conducted. Of particular importance is the School Meals Initiative for Healthy Children (SMI) for which final regulations were published in 1995 and implemented in SY 1996-97, which updated USDA's school meal program nutrition standards. It has been argued that SFAs are now spending more to serve meals that both meet the nutritional standards and appeal to children. In addition, foodservice directors and other stakeholders have become increasingly concerned that rising labor costs and other factors have made it difficult to meet program requirements within the limits of existing reimbursement rates. Demands for educational improvement and other mandates may cause school districts to seek to minimize their subsidization of foodservice operations. One response to these forces has been the search for additional sources of revenue, including à la carte sales at mealtimes, vending machines, and other food sales outside mealtimes. Because of the diversity of SFAs and schools, the impacts of trends in cost factors are likely to vary, and other environmental characteristics are likely to affect the costs of producing school meals. Federal meal subsidies (meal reimbursements and donated commodities) 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, the Federal subsidy for a free meal will cover the costs of producing a reimbursable meal.

In light of all of the changes that have taken place in school foodservice and school finance over the past 12 years, there is a critical need for updated information on the relationship of Federal meal reimbursement rates to the cost of production of reimbursable meals. There is also an important need to understand the current cost and revenue structure of SFAs. Rising labor costs, food costs, and tighter school district budgets may have changed the way in which school meals are produced. Furthermore, school districts' use of foodservice management companies (FSMCs) has increased substantially since SLBCS-I (from about 7 percent in SY 1990-91 to about 13 percent in SY 2003-04). In short, there is a need to understand how SFAs are currently conducting business.

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.

The National School Lunch Program and the School Breakfast Program

The Child Nutrition Programs are administered by FNS and operate in every State in the Nation. Under this general heading are included several programs that operate in schools: the National School Lunch Program (NSLP), the School Breakfast Program (SBP), and the Special Milk Program (SMP). The present study focuses on meal production costs in the NSLP and the SBP.

The National School Lunch Act of 1946 established the NSLP "to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other foods" (P.L. 79-396). The NSLP is the largest and oldest Child Nutrition Program. All public and private nonprofit schools are eligible to participate in both the NSLP and the SBP, as are public or licensed residential childcare institutions. Currently, the NSLP operates in more than 100,000 public schools, private nonprofit schools, and residential child care institutions. Any child in a participating school is eligible to obtain a school lunch. Students from low-income families

are eligible to purchase lunch at a reduced price or to receive a free lunch. In School Year (SY) 2005-2006, more than 5 billion school lunches were served. On an average day in October 2005, 30.5 million public school children received an NSLP lunch; almost 60 percent of these lunches were provided free or at a reduced price to children from low-income families.[12]

The School Breakfast Program began in the mid-1960s when the Child Nutrition Act of 1966 (P.L. 89-642) established a pilot project to support the provision of breakfast to children living in "poor areas and areas where children [had] to travel a great distance to school." The SBP was officially authorized as a permanent program in 1975, and the target population was expanded to include "all schools where [the program] is needed to provide adequate nutrition for all children in attendance" (P.L. 94-105). Currently, the SBP operates in approximately 84,000 schools and institutions. In SY 2005–06, more than 1.7 billion breakfasts were served. On an average day in October 2005, 9.7 million public school children received an SBP breakfast. More than eighty percent of these meals were provided free or at a reduced price.

Over time, expenditures for both the NSLP and SBP have increased significantly. Annual Federal expenditures to the States for the NSLP, including donated commodities, have increased from less than $100 million in 1946 to approximately $8.2 billion in SY 2005-06. In Fiscal Year 2006, Federal subsidies for the SBP were $2.0 billion.

The Food and Nutrition Service (FNS) of the U.S. Department of Agriculture is the principal administering agency for the NSLP and the SBP at the Federal level. FNS is generally responsible for implementing program legislation; establishing regulations, policies and guidelines; monitoring program performance; and providing program and administrative funds to States. FNS enters into agreements with State agencies (usually the State Educational Agency), which provide technical assistance to the local School Food Authorities (SFAs) which administer the programs at the school district level, monitor SFA performance, and establish fiscal recordkeeping systems. Seven FNS Regional Offices monitor and provide technical assistance to the State agencies. When State agencies cannot administer part of the programs because of State laws, FNS Regional Offices directly administer them. At the local level, SFAs are required to administer the NSLP and SBP in accordance with all applicable Federal and State regulations, ensuring that meals meet program requirements and are made available to all enrolled children.

Participating schools and institutions must agree to:

- make meals available to all children;
- provide free and reduced-price meals to low-income children, using Federally-set income criteria;
- offer meals that meet Federally-specified nutritional requirements;[13]

---

[12] All participation data reported in this section is taken from FNS' website: http://www.fns.usda.gov/pd/.

[13] In accordance with Section 9(f)(1) of the National School Lunch Act, program regulations require that participating schools offer meals that, on average over a school week, provide one-third and one-fourth of the Recommended Dietary Allowances (RDAs) for energy and specific nutrients (protein, calcium, iron, vitamin A, and vitamin C) in the NSLP and SBP, respectively. Additionally, meals must reflect the most recent Dietary Guidelines for Americans (DGA). Currently, school meal regulations are based on the 1995 DGAs and the 1989 RDAs.

- operate the foodservice on a nonprofit basis; and
- follow the recordkeeping and claims procedures required by USDA.

SFAs that participate in the NSLP and SBP receive two types of Federal assistance:

- cash reimbursements (received for both the NSLP and SBP); and
- donated commodities (tied to the NSLP).

Cash reimbursements for NSLP and SBP meals are based on the number of qualified meals served to students, established per-meal reimbursement rates, and the free/reduced price certification status of participating students. SFAs receive a base payment for each meal served, with substantially higher rates paid for meals served free or at a reduced price to income-eligible students.[14] SFAs or individual schools may qualify for higher reimbursement rates under both the NSLP and SBP if a specified percentage of their lunches are provided free or at a reduced price.[15] Additional reimbursements are $.02 in the lunch program; "severe need" reimbursements are $.24 higher for free and reduced-price breakfasts only. Reimbursement rates for SY 2005-06 in the contiguous states were:

	NSLP Lunch Lower Reimbursement	NSLP Lunch Higher Reimbursement	SBP Breakfast	SBP Severe-Need Breakfast
Free Meals	$2.32	$2.34	$1.27	$1.51
Reduced-Price Meals	$1.92	$1.94	$0.97	$1.21
Paid Meals	$0.22	$0.24	$0.23	$0.23

Entitlement to commodities is based on an established per-meal flat rate applied to the number of reimbursable lunches served. For SY 2005-06, schools were entitled to receive about $.175 worth of entitlement commodities per lunch. Subject to availability, SFAs are also eligible to receive bonus commodities in amounts that can be used without waste. The type and amount of bonus commodities available vary from year to year depending on purchasing decisions made by USDA.

SFAs are required to operate the school foodservice on a nonprofit basis. Program regulations define a nonprofit foodservice as one operated primarily for the benefit of enrolled children, all revenue from which is used solely to operate or improve the foodservice. An SFA must limit the net cash resources of its nonprofit foodservice to three months' average expenditures. Usually SFAs operate at the break-even level, i.e., costs equal revenues from all sources. Nonprofit status is determined by the financial status of the school foodservice ***as a whole*** rather than the financial status of each Federal program separately. SFAs must accrue all revenues from the school foodservice to a

[14] Students eligible for free meals are those from families with incomes at or below 130 percent of poverty. Reduced-price reimbursement is paid for meals served to students from families whose incomes fall between 130 and 185 percent of poverty.

[15] Schools districts in which 60 percent or more of the lunches served in the second preceding year were claimed as free or reduced-price meals receive an additional 2 cents reimbursement for each lunch served. Individual schools in which 40 percent of more of the lunches served in the second preceding school year were claimed as free or reduced meals are determined to be in "severe need." SFAs receive a higher reimbursement for free and reduced-price reimbursable breakfasts served in severe need schools.

nonprofit foodservice account, including Federal lunch, breakfast, and snack payments; all funds from this account must be used to support the nonprofit school foodservice, which can include other parts of their foodservice operations such as à la carte and adult food sales. SFAs are not required to maintain separate cost and revenue records for the NSLP, SBP, or other programs within the nonprofit school foodservice account.

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. For most SFAs, the cost elements included in the SFA's cost accounting system are for the most part limited to those costs that the SFA is expected to cover from revenues generated from foodservice 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 reported costs, or those charged to the SFA budget and unreported costs, or those charged to other budgets or donated to the SFA. Total full costs, as defined in this study, include:

- ***Direct Meal Production Costs.*** Direct meal production costs are those directly traceable to meal production and service. They include food cost and SFA foodservice labor costs.
- ***Administrative Costs:*** These costs, which can be incurred at both the SFA and the school district level, are not directly traceable to the production of specific meals in schools. At the SFA level, these costs include labor for foodservice administration and other SFA support activities. At the school district level, costs include time spent by business managers who are often responsible for the SFA as well as school district purchases. Administrative costs also include time spent by kitchen managers and other foodservice staff on general administrative activities. Other school-based staff, including school principals, custodians, and secretaries, are often involved in activities that facilitate the operation of school cafeterias. Finally, as defined for this study, administrative costs also include the labor costs associated with other activities such as maintenance of foodservice equipment and warehousing of food and supplies.
- ***Other Direct Foodservice Costs:*** Other direct foodservice costs are those costs that are identified as part of foodservice operations but are not identified as either direct meal production costs or administrative costs. In this study, the other direct foodservice costs for an SFA may include such items as supplies, contracted services, cost of facilities, and equipment depreciation.
- ***Indirect Costs:*** Indirect costs represent the expenses incurred by the school district that are not practical to identify with specific functions or activities (such as foodservice), but are necessary for the general operation of the organization and the conduct of activities it performs. Cost allocation plans or indirect cost rates are used to distribute those costs to benefiting activities.

Some or all of administrative costs and other direct foodservice 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. Some or all costs may be absorbed by the school district and not charged in any way to the SFA.

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 and Chapter Seven presents cost and revenue comparisons. Chapter Eight compares the cost of meals obtained using the direct cost methodology and an indirect modeling approach. Finally, Chapter Nine presents comparisons of the major results from SLBCS-I to those obtained in SLBCS-II. The appendices include a glossary, additional detail on the sample design and weighting, supplemental tables, and copies of the survey instruments.

Chapter Two

Overview of the School Lunch and Breakfast Cost Study

Overview of Research Design

The primary objective of the *School Lunch and Breakfast Cost Study-II* was to develop national estimates of the cost of producing reimbursable lunches and breakfasts using the direct measurement approach employed by SLBCS-I. The methodology relies on the direct measurement of costs attributable to the various SFA activities rather than the use of indirect allocation rules.[16] Exhibit 2.1 presents an overview of the study approach. The methodology uses four elements or steps. These included:

- Measuring the full cost of SFA operations including both reported costs and unreported costs;
- Distributing the reported and full cost of SFA operations to the direct production[17] of lunches, breakfasts, and after-school snacks,[18] and to non-meal production activities;[19]
- Distributing a share of the cost of non-meal production activities to the production of lunches, breakfasts, and after-school snacks; and
- Distributing the reported and full cost of meals to the production of reimbursable and nonreimbursable lunches and breakfasts.

These four processes required a review of SFA financial statements, meal production records, recipes, invoices, and other documentation. SFA and school district officials were interviewed to provide data

---

16 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. Instead, it allocates joint production costs proportional to direct meal production costs (food and labor).

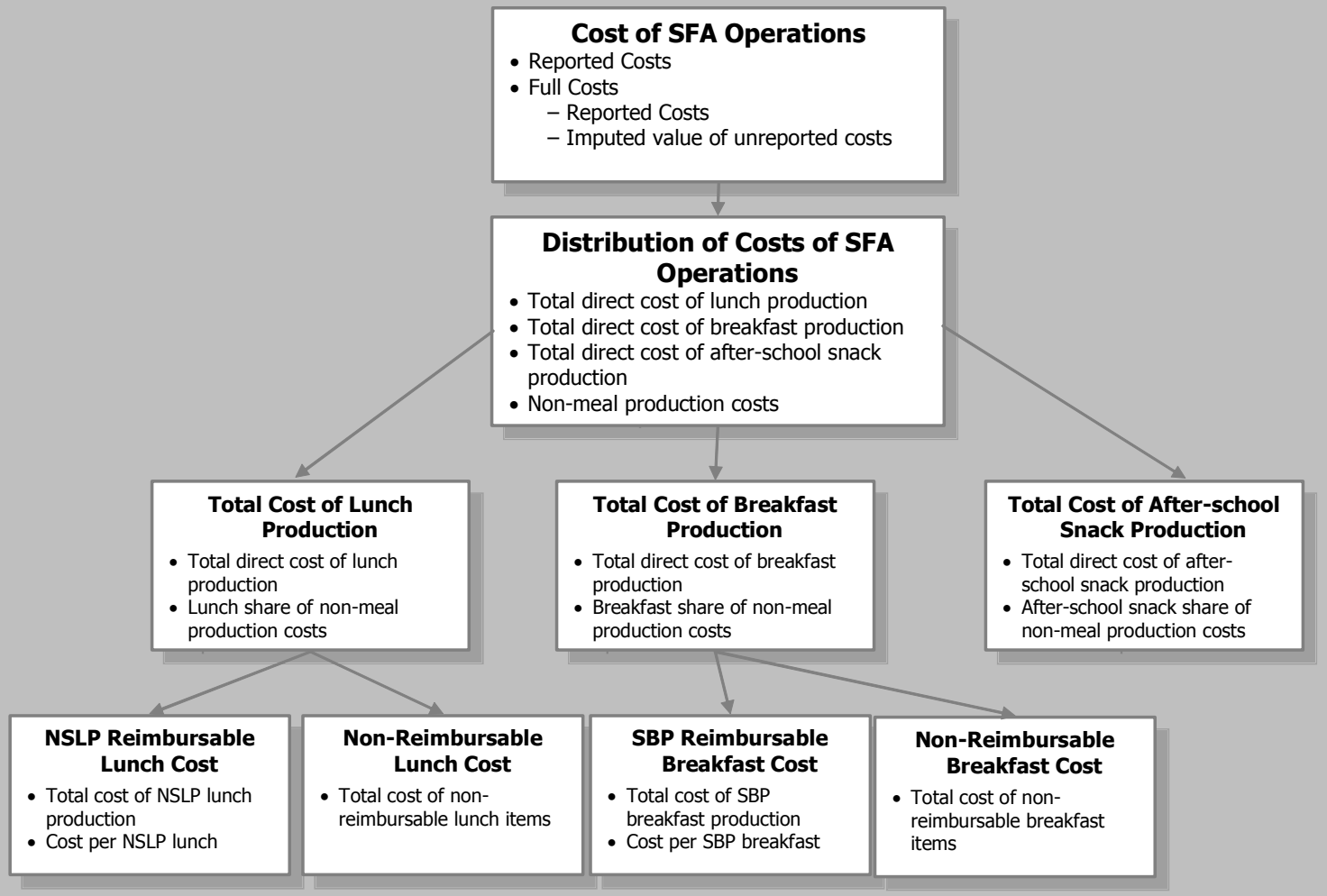
17 Direct meal production costs are those directly traceable to producing and serving reimbursable meals and nonreimbursable foods. In this study, the traceable direct meal production costs are food and labor associated with specific meals (breakfast, lunch, or snacks).

18 The NSLP after-school snack program was begun in 1998, and thus SLBCS-I treated all meals other than breakfast and lunch as entirely nonreimbursable. In order to accurately measure the costs of nonreimbursable meals, SLBCS-II separately measured the costs of after-school snacks in schools where they were served. Thus, the food, production labor, and other costs for nonreimbursable meals exclude after-school snacks. The number of SFAs and schools in the SLBCS-II sample that served NSLP snacks was too small to permit sufficiently precise estimates of the average cost per NSLP snack.

19 Non-meal production costs include all costs that are not directly traceable to the production of specific meals and snacks. These include administrative costs, other direct foodservice costs, and foodservice indirect costs.

Exhibit 2.1

Overview of Meal Cost Methodology Framework



to impute the value of school district costs that were not charged to the SFA budget and to obtain data needed to allocate labor costs among SFA activities. Finally, samples of meals taken by students were observed to obtain data on the distribution of menu items sold in reimbursable and nonreimbursable meals. The relationships 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 (reported and unreported) cost of SFA operations	• 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 among lunch production, breakfast production, after-school snack production and non-meal production activities	• Review meal production records, recipes, and invoices to directly measure the cost of food used in lunch, breakfast, and after-school snack production during a sample time period; and • Obtain information to identify the labor costs attributable to lunch, breakfast, and after-school snack production and non-meal production activities.
Distribute a share of non-meal production costs to lunch, breakfast, and after-school snack 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 nonreimbursable meals	• Observe a sample of meals taken by students to identify the quantity of each menu item sold that is attributable to reimbursable and nonreimbursable 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 school district indirect costs be assigned to SFA operations. Indirect costs represent the expenses incurred by the school district that are not readily identified with a function or activity, but are necessary for the general operation of the organization and the conduct of activities it performs. Cost allocation plans or indirect cost rates are used to distribute those costs to benefiting revenue sources.

The study approach measured the full cost of SFA operations including both those costs that were reported on annual financial statements and unreported costs which were identified and measured.

Unreported costs, as measured in this study,[20] represented a substantial proportion (19 percent) of full costs as discussed in Chapter Four.

The process of identifying unreported costs involved reviewing the SFA's annual expense statement with the SFA director and/or SFA business manager. The objective of this review was to determine the inclusiveness of each line item on the expense statement—does the reported cost include all of the cost attributable to foodservice operations? Particular attention was paid to the SFA's indirect costs (which may be reported or unreported). Where an SFA had indirect costs (either reported or unreported), the process also involved obtaining information on the school district's indirect costs from the school district business manager. For each line item, the review sought to determine if unreported costs were included in the school district's indirect cost rate (e.g., if utilities were not included in the SFA's expense statement, the review determined if utilities were included in the school district's indirect cost rate).

The review of SFA expense statements and school district indirect costs identified those cost elements for which costs had to be imputed. For cost elements that were not reported on the SFA's expense statement or included in the SFA's indirect costs (either reported or unreported) the process involved identifying sources for the information needed to impute the costs (e.g., to impute the cost of unreported labor costs, it was necessary to identify the unreported staff, the amount of time they devoted to foodservice activities, and their wage and benefit rates). Principals in a sample of schools were interviewed to identify unreported costs incurred at the school level (e.g., distributing and processing applications for school meal benefits and supervising students in the cafeteria). Exhibit 2.3 summarizes the sequence of activities used to identify and measure unreported costs.

Allocating Food Costs to Breakfast, Lunch, and After-Schools Snacks

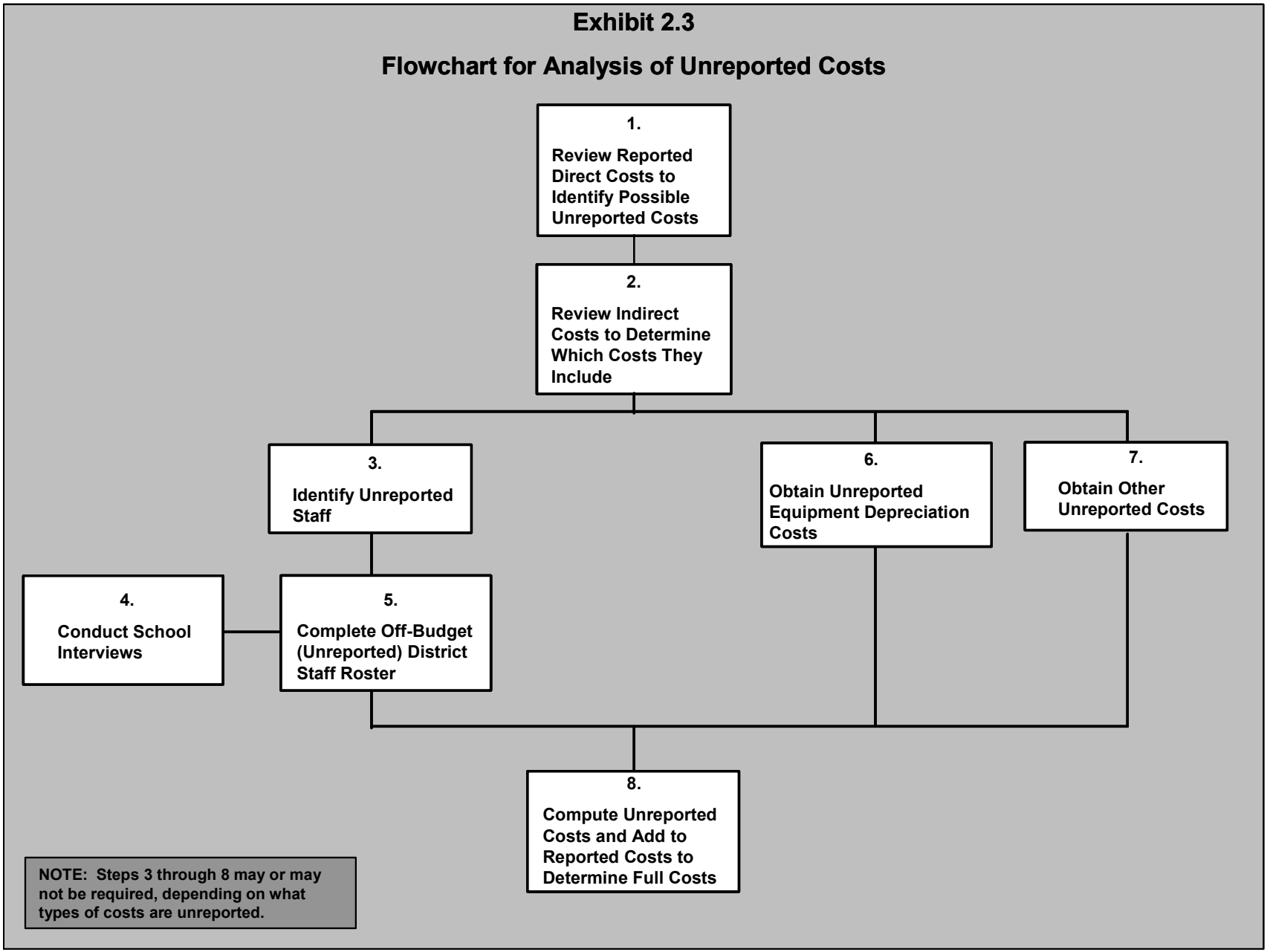
Annual food costs are distributed to breakfast, lunch, snacks, and other meals using allocation percentages based on the cost of food used during a 5-day study week. The process of identifying the cost of food used in meal production included the following activities:

- **Prices and Commodities.** Obtaining the average unit price paid for each food or ingredient (or the USDA-assigned value for donated commodities). SFAs provided master price lists for all foods acquired. These prices were matched to the ingredients used during the 5-day study week by study staff after data collection was over.
- **Menu Records.** A review of menu and production records with school foodservice managers to identify all food items prepared for breakfast, lunch, and snacks during the 5-day study period. Serving size and number of servings produced, including leftovers, were recorded by study staff.

[20] The treatment of labor required to supervise students in the cafeteria during meals is the one area in which the methodology used in SLBCS-II and SLBCS-I differed. In SLBCS-I, this labor was not included in full costs based on the argument that school meal labor was a cost of school operations rather than foodservice, since students would eat meals at school even in the absence of the USDA-subsidized programs. The costs of school meal labor were added to SLBCS-II, based on input from the foodservice community, who reported that the cost of this function was increasingly charged to the school foodservice account. Thus, in order to have a measure of full costs that is comparable across all SFAs, school meal labor must be included. Comparisons of SLBCS-I and SLBCS-II presented in Chapter Nine exclude school meal labor to make full costs more comparable in both studies. As noted in Chapter Nine, excluding school meal labor from unreported labor in SLBCS-II reduces unreported costs as a proportion of full costs from 19 percent to 12 percent.

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 school foodservice manager to determine the quantity 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.[21]
- **Inventory Records.** Study staff recorded the starting and ending inventory, and the additions to inventory, for packaged foods that were sold à la carte.
- **Sampling Weights.** Applying sampling weights to the food cost estimates for each sample school to obtain district-level estimates for breakfast, lunch, and other meals.

Exhibit 2.4 summarizes the calculation of the allocation percentages that were used to distribute annual food costs to breakfast, lunch, after-school snacks, and other meals.

Identifying and Allocating Labor Costs to SFA Activities

The allocation of SFA labor costs among foodservice activities was based on the proportion of time devoted to each activity. Professional estimates were used for distributing staff time and costs among the various foodservice activities:

- **Cafeteria/Kitchen Staff Rosters, Principal Interviews, Central Foodservice Staff Rosters, and Off-Budget (Unreported) District Staff Rosters**. *Professional estimates* were made by school foodservice managers and school principals to obtain the distribution of time kitchen and school staff spent foodservice activities in the sample schools. Other professional estimates were made by the SFA director and district officials for time spent by central foodservice staff and central school district staff. These data were combined with information obtained from salary schedules to obtain the labor costs attributable to each foodservice activity.
- **Sampling Weights**. Sampling weights were applied to labor cost estimates for each sample school to obtain district-level estimates of the labor cost of school-based staff.

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

Allocating "Other" Costs Between Breakfast, Lunch, and After-School Snack Production

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

---

[21] For salad bars, sandwich bars, and other similar serving arrangements, study staff complete a Self-serve/Made-to-Order Bar Form to collect data for creating a "recipe."

Exhibit 2.4

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

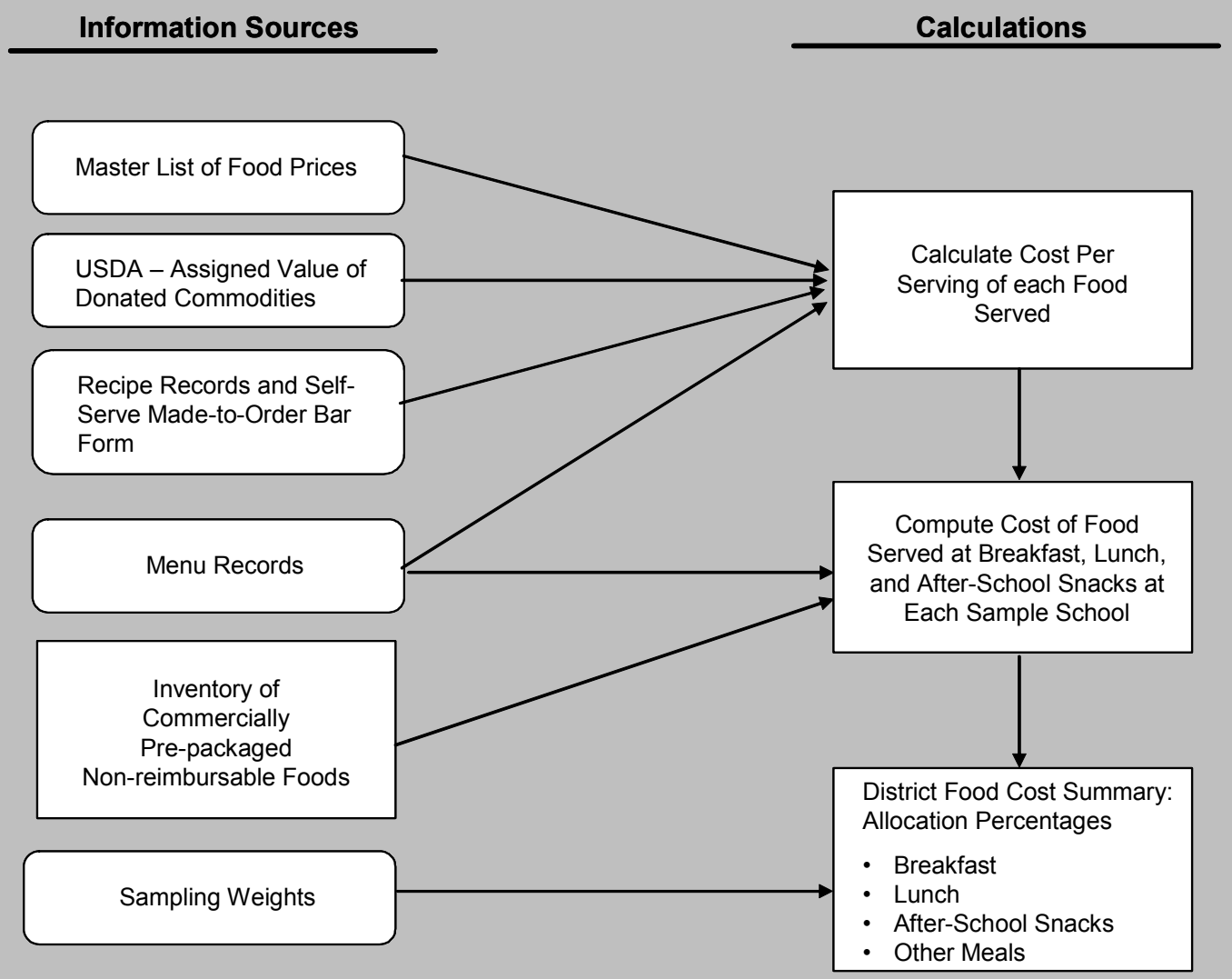
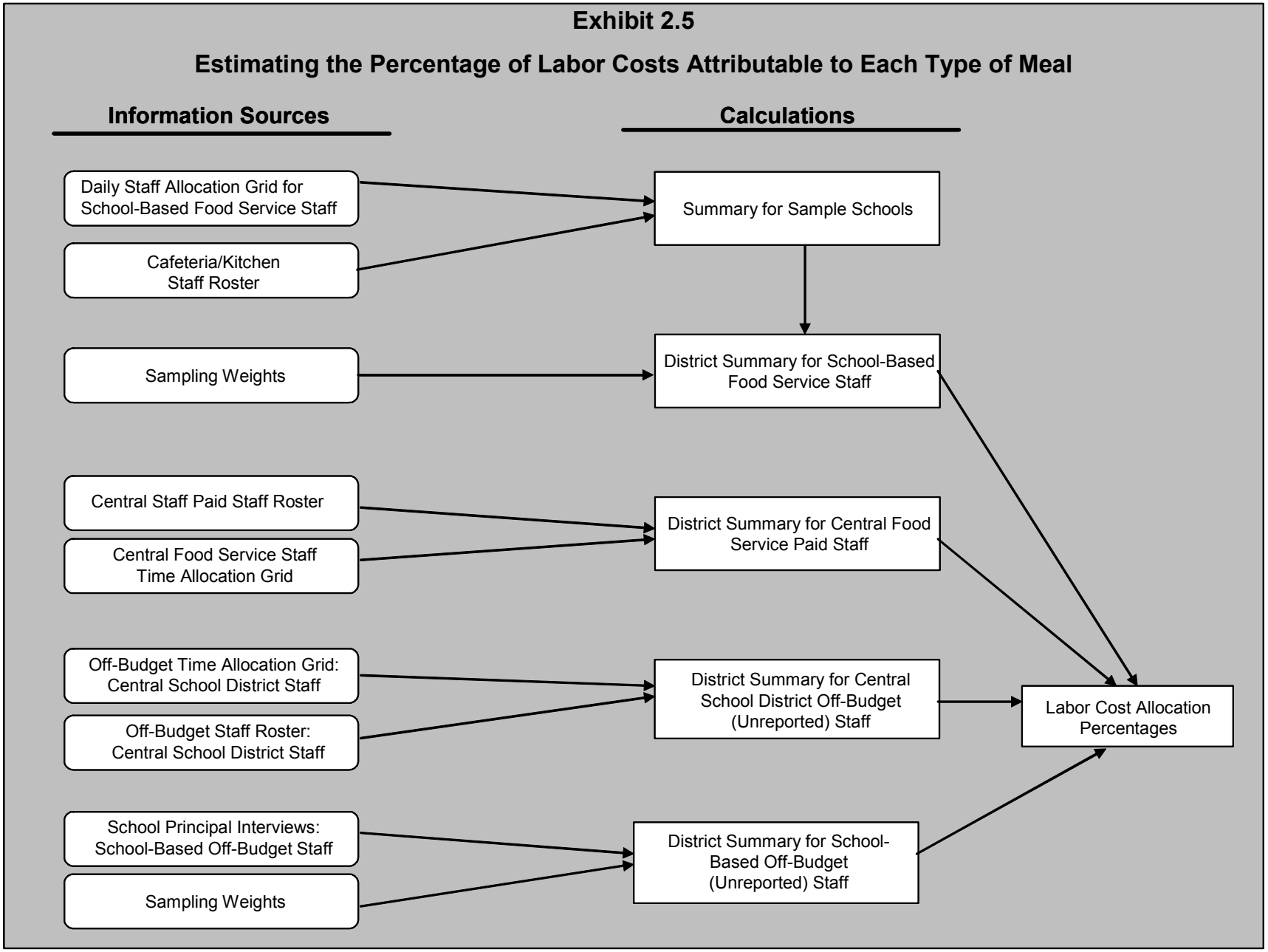


Exhibit 2.5

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



Allocating Total Lunch and Breakfast Costs to Reimbursable and Nonreimbursable Meals

The previous steps provided estimates of total annual lunch and breakfast costs. Total annual meal costs (for each type of meal) were allocated to reimbursable and nonreimbursable meals based on the proportion of food costs (for each type of meal) used to produce the food that students actually took as part of reimbursable meals.[22]

To derive these estimates, meal observers recorded the food items selected by a sample of students taking reimbursable meals in the sample schools.[23] These data were 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 were 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 were reimbursable.

Sample Design

The overall objective the SLBCS-II sample design was to estimate the mean reported cost of producing a reimbursable meal with a 95 percent confidence interval of ±$.09.[24] In order to achieve this objective, the sample design consisted of two major components. The first was the selection of a national probability sample of 122 school districts. The second was the within-district sampling of schools required by the Meal Cost Methodology (MCM) direct measurement approach. An overview of each of these components is presented below. Sampling issues, including definitions of the stratification, are discussed in more detail in Appendix A.

Sample of School Districts

The sample frame used for the study was the 2,150 SFAs that responded the USDA SFA Characteristics Survey (SFACS) conducted in SY 2003-04. A stratified random sample of 202 SFAs (122 target and 80 backups) was selected from the 2,150 SFAs contained in the SFACS sample frame. SFAs were stratified by meal production system. Sites selected with certainty in the SFACS sample formed a separate stratum. Within stratum, districts were sorted by size of total district enrollment. A systematic sample was then selected from the non-certainty strata, with each district in a stratum having the same probability of selection.

---

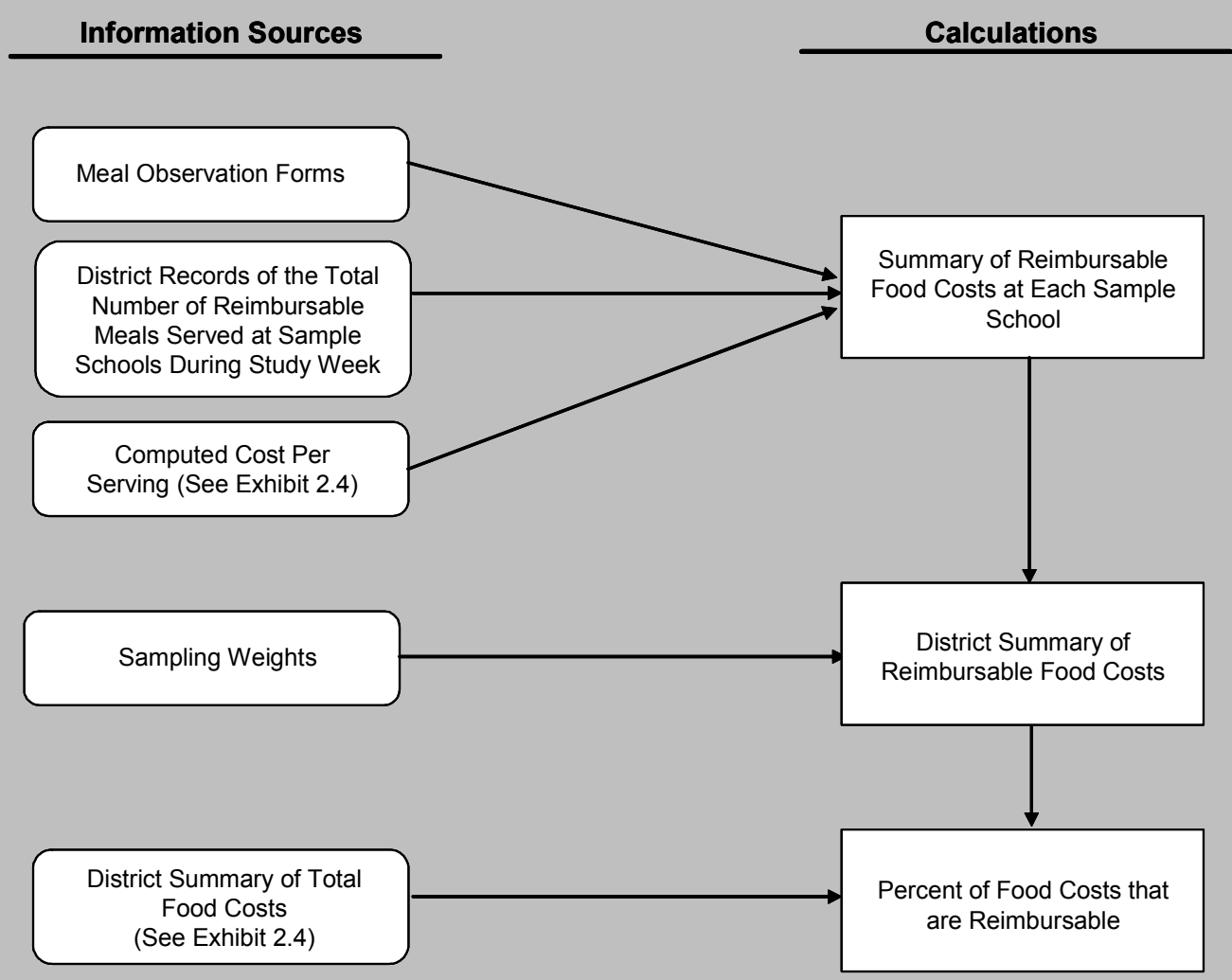
[22] The methodology does not identify those costs that are restricted only to reimbursable meals (e.g., administrative functions related to the meal benefit application and approval process). This results in a slight overstatement of the costs attributable to nonreimbursable meals. Similarly, some high 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.

[23] Observers were trained to identify trays containing reimbursable meals. During the data cleaning trays that were recorded as reimbursable meals but did not contain the necessary food items to be a reimbursable meal were deleted. Observers conducted observations in each school during a five-day school week. In schools that had multiple lunch or breakfast periods, observations were conducted for each meal period on each of the observation days. Observers were trained to divide each meal observation period equally and randomly between serving lines (if applicable). Observers recorded as many reimbursable meals as possible during each observation period.

[24] The width of the confidence interval was determined by the resources available to conduct the study.

Exhibit 2.6

Estimation of the Percentage of Food Costs that are Reimbursable



SFAs were recruited to participate in the study. The recruitment process involved letters to the State Child Nutrition Directors followed by letters and telephone calls to the selected SFA Directors and the superintendents of the sampled districts. At the end of the recruitment phase, 120 SFAs had agreed to participate, which represented a cooperation rate of 60 percent of eligible SFAs. When weighted, these 120 SFAs represent the 12,568 public SFAs that participate in the NSLP.[25] Characteristics of the SFAs that participated in the study are presented in Exhibit 2.7.[26]

Sample of Schools within Districts

Within the sample of 120 participating districts, a representative sample of schools was selected. Schools within the district were stratified by the type of school kitchen: independent school kitchen that prepared all of the food served in the school in which it was located; base school kitchen that prepared food for other schools in addition to the one in which it was located; and satellite school kitchens that received some or all of the food served in the school from a base or central kitchen. Within all but one of the strata, schools were sorted by grade level (elementary, middle and high school) to assure adequate representation of all grade levels.[27] Schools were then selected using probability-proportional-to-size sampling with the number of reimbursable lunches as the measure of size. Schools that served as base or production kitchens for another school(s) were selected if a school for which they provided meals was sampled. The number of schools selected in an SFA varied between one and five schools, depending on the size of the SFA. In total, 356 schools were included in the final sample.

Statistical Distributions and Tests

The complex sample design required specialized software for performing statistical tests. Standard errors and test statistics were calculated using SAS PROC SURVEYMEANS and SURVEYFREQ.

Measures of costs and cost components have been compared between groups of SFAs defined by poverty status, size, à la carte revenues as a percent of total revenues, and meal production method. While the exhibits display the results of all the tests, the text in general mentions only the statistically significant differences.

---

[25] To generate national estimates, data for each of the 120 SFAs was multiplied by the reciprocal of its probability of being selected into the sample which is equal to the probability of the SFA being selected into the SFACS sample times the probability of its being selected into the SLBCS-II sample (given that it was included in the SFACS sample). Additional information on the weighting methodology is presented in Appendix B.

[26] Cross-tabulations of SFA characteristics are presented in Appendix D, Exhibit D.1.

[27] The following school categorization was used:

Lowest Grade	Highest Grade	School Type
K, 1, 2, or 3	Any	Elementary
4 or 5	Less than 8	Elementary
4 or 5	8 or higher	Middle
6, 7, 8, or 9	Less than 10	Middle
6, 7, 8, or 9	10 or higher	High
10, 11, or 12	10, 11, or 12	High

Exhibit 2.7

Distribution of Sampled SFAs by Selected SFA Characteristics

Characteristic	Unweighted		Weighted	
	Number	Percent	Number	Percent
Total	120	100.0%	12,568	100.0%
SFA Size				
Small (1-999)	16	13.3	5,238	41.7
Medium (1,000-4,999)	37	30.8	4,995	39.7
Large (5,000+)	67	55.8	2,336	18.6
Production System				
On-Site kitchen only	65	54.2	8,865	70.5
Base/Central only	21	17.5	2,308	18.4
Mostly on-site kitchen	16	13.3	347	2.8
Mostly satellite	18	15.0	1,047	8.3
Poverty Status				
Less than 60% of lunches are free/reduced price	84	70.0	9,388	74.7
60% or more of lunches are free/reduced price	36	30.0	3,180	25.3
à la Carte Revenues[a]				
<10 % of Total Revenue	28	30.1	3,807	40.5
>10% of Total Revenue	65	69.9	5,594	59.5
Foodservice Management Company				
Yes	12	10.0	1,087	8.7
No	108	90.0	11,481	91.4

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

The central tendencies of the cost measures are presented both as weighted sample means and weighted sample medians. Only the means are discussed in the text. The distributions of many of the measures are highly skewed, i.e. a few SFAs have very large total costs or cost components. Consequently, the median values correspond to the "typical" SFA, while the mean values correspond to the national average.

Summary of Data Collection Activities

The data collection activities for the *School Lunch and Breakfast Cost Study-II* occurred between February 2006 and February 2007. Study staff visited each of the 120 SFAs participating in the study two times.

The data collection for the study was conducted in two phases, each of which is discussed below.

Phase 1: February 2006 – June 2006

During Phase 1, study staff visited each of the 120 SFAs in the study sample and collected data from a sample of one to five schools in each SFA. During this site visit study staff obtained the information needed to calculate the cost of meal production and to allocate the SFAs' reported costs between lunch, breakfast, and after-school snack production and between reimbursable and nonreimbursable meals.

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

- Identified the cost of food used in breakfast and lunch production. Study staff:
  - Reviewed menu and meal production records with school foodservice managers in a representative sample of schools to identify the food items prepared for breakfast, lunch, and after-school snacks (if applicable) during the week of the visit. Serving size and number of servings produced were recorded by study staff on a Menu Record;
  - Reviewed recipes used in the production of each food item produced with the school foodservice manager 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;
  - Obtained selected invoices from the SFA business manager to obtain the average unit price paid for each ingredient (or the USDA assigned value for donated commodities);
  - Completed an Inventory of Commercially Pre-packaged Nonreimbursable Foods to measure usage of these foods for à la carte sales in all locations in the school (cafeteria, vending machines, etc); and
  - Obtained counts of the number of NSLP lunches, SBP breakfasts, and NSLP after-school snacks served at the sample of schools during the week of the visit. Study staff recorded these counts on a Daily Meal Counts Form.
- Observed an anonymous sample of students at breakfast and lunch. Study staff recorded the food items selected by each student in the sample. This allowed identification of reimbursable and nonreimbursable meals and estimated the number of servings of each food item that were taken as part of reimbursable meals.
- Identified the labor costs of breakfast production, lunch production, snack production, and non-meal production activities. Study staff:
  - Obtained a list of all central SFA and school district staff whose salaries were charged to the SFA budget. Salary and work schedule information was recorded by study staff on a Central Foodservice Paid Staff Roster. The list was reviewed with the SFA director to identify staff who worked on both meal production and non-meal production activities;
  - Obtained a list of all foodservice staff in sample schools who worked on meal production activities (i.e., produce/serve breakfasts and/or lunches). Salary and work schedule information was recorded on the Cafeteria/Kitchen Staff Roster; and
  - Obtained professional estimates of the time distribution by function for all school-based foodservice staff and all central SFA and school district staff. These estimates were obtained through a brief discussion with the school foodservice manager, SFA Director and/or other appropriate SFA and school district staff.

Phase 2: November 2006 – February 2007

Phase 2 of the data collection focused on the unreported costs, attributable to school foodservice operations but not charged to the school foodservice account. During Phase 2, study staff visited each of the SFAs participating in the study to collect needed financial data pertaining to SY 2005-06. Study staff interviewed the SFA director and other school district staff to identify the resources used by, but not charged to, the school foodservice account. Information was obtained to estimate the value of these unreported costs, which was combined with the reported costs to estimate the *full cost* of producing reimbursable lunches and breakfasts.

During the Phase 2 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 were not reported on their expense statement.
- Reviewed the school district's indirect cost allocation with the school district business manager. During this review, study staff discussed each of the support functions that were included in the district's indirect cost pool. This review also examined school district practices for charging these costs to foodservice and other school district operations.
- Through discussion with the SFA director, study staff identified school district personnel that spent time working on foodservice activities that were not charged to the nonprofit school foodservice account. Study staff completed an Off-Budget (Unreported) Staff Roster (same format as the Central Foodservice Paid Staff Roster). Professional estimates of time spent on SFA activities were recorded by study staff on an Off-Budget Time Allocation Form. Study staff also interviewed principals in sample schools and obtained estimates of off-budget staff costs in support of foodservice operations.

Overview of Instruments

Data collection activities involved the use of 13 different forms and survey instruments. Exhibit 2.8 shows the instruments used along with the method used to collect the data and the respondents. Appendix F (separate volume) provides brief descriptions of each instrument as well as copies of the instruments.

Exhibit 2.8

Data Collection Instruments

Instrument	Method of Data Collection	Respondents
Phase 1		
1. State Child Nutrition Director Questionnaire	Telephone interview	State CN Director
2. Daily Menu Record	Record review and discussion	School Foodservice Manager
3. Recipe Form	Record review and discussion	Foodservice Manager and SFA Director
4. Menu Record for Self-serve and Made-to-Order Bars	Record review and observation	School Foodservice Manager
5. Inventory of Commercially Pre-packaged Nonreimbursable Foods	Record review and observation	School Foodservice Manager
6. Meal Observation Form	Observation	None
7. Daily Meal Counts Form	Record review and discussion	School Foodservice Manager
8. School Food Service/Kitchen Manager Interview • Cafeteria/Kitchen Staff Roster • Daily Staff Allocation Grid	Pre-mailed form, in-person interview	School Foodservice Manager
9. SFA Director Staffing and Operations Interview • Central Food Service Paid Staff Roster • Central Food Service Staff Allocation Grid • Support Function Summary Grid • Supplemental Questions • Obtain Food Price Lists and USDA Commodity Records	Pre-mailed forms, in-person interview, record abstraction	SFA Director and/or Business Manager
10. State Education Agency (SEA) Finance Officer Questionnaire	Telephone interview	SEA Finance Officer
Phase 2		
11. SFA Cost Interview Preparation Forms • SFA Expense Statement • SFA Revenue Statement • Supplemental Information Form	Mail out, mail back; existing reports could be submitted in lieu of expense and revenue statements.	SFA Director and/or Business Manager
12. SFA Cost Interview Guide • Food Service Expense Statement Review • Off-Budget (Unreported) District Staff Roster • Off-Budget (Unreported) District Staff Allocation Grid • School District Indirect Cost Review Supplement • Utilities and Equipment Supplement • Food Service Revenue Statement and Cash Balance Review	Record review and in-person discussion	SFA Director and/or Business Manager; additional individuals could be identified by SFA Director and/or Business Manager
13. School Principal Cost Interview	Pre-mailed form, telephone interview	School Principal

Chapter Three

Estimates of Reported Costs

This chapter presents an analysis of SFAs' **reported** costs for SY 2005-06. The research questions addressed in this chapter include:

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

The analysis presented in this chapter focuses on the costs of producing reimbursable meals and includes only those costs that were charged to school foodservice accounts.[28] 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 are 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 foodservice costs include:

- For the average SFA, the national mean reported cost of producing a reimbursable lunch in SY 2005-06 was $2.36.
- For the average SFA, the national mean reported cost of producing a reimbursable breakfast in SY 2005-06 was $1.92.
- For most SFAs, the Federal subsidy for free lunches equals or exceeds the reported cost of producing reimbursable lunches. In nearly four out of five SFAs (78 percent), the reported cost of producing a reimbursable lunch was less than the total Federal subsidy for a free lunch. Similarly, 76 percent of all reimbursable lunches were produced at a reported cost that was less than the total Federal subsidy for a free lunch.
- For most SFAs, the Federal subsidy for free breakfasts is less than the reported cost of producing reimbursable breakfasts. The reimbursement rate for a free breakfast was sufficient to cover reported costs in only 36 percent of SFAs. However, 58 percent of

[28] 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.

reimbursable breakfasts were produced at a reported cost than was less than the total Federal subsidy for a free breakfast.[29]

- On average, reported food costs accounted for 46 percent of SFAs' total reported costs; reported labor costs accounted for 45 percent of reported costs; and other reported costs accounted for the remaining reported costs.
- Reported administrative labor costs accounted for an average of 8 percent of the average SFA's total reported cost and 19 percent of total reported labor cost.[30]

Again, it is important to caution the reader that reported costs do not account for all 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 by the poverty status of the district, by SFA size, and by the proportion of SFA revenues from à la carte sales.[31]

Cost Per Reimbursable Lunch

The distribution of SFAs by the reported cost of producing a reimbursable lunch in SY 2005-06 is shown in Appendix D (Exhibit D.2). The interquartile range for reported costs per reimbursable lunch in the sample was between approximately $2.00 and $2.50. Exhibit 3.1 summarizes the national mean reported cost of producing reimbursable lunches using both SFAs and NSLP reimbursable lunches as the unit of analysis. Using the SFA as the unit of analysis, the mean reported cost is $2.36 to produce a reimbursable lunch. None of the differences among the subgroups of SFAs (by poverty status, SFA size, or à la carte revenues) examined in Exhibit 3.1 are statistically significant.[32]

When the unit of analysis is the NSLP meal, the mean reported cost of producing a reimbursable lunch in SY 2005-06 was $2.28.[33] This reflects the large number of reimbursable lunches served a relatively few large SFAs where reported costs are low. Approximately 19 percent of SFAs have

---

[29] The severe-need reimbursement rate was used for SFAs in which at least 40 percent of lunches in the second preceding school year were claimed at the free or reduced price reimbursement rate.

[30] 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 costs were included in "administration" for purposes of this study.

[31] Exhibits present the mean, median, and standard error of the mean. Cost estimates by type of meal production system are presented in Appendix D and referenced in the text.

[32] Reported cost per reimbursable lunch and breakfast by meal production system is presented in Appendix D, Exhibit D.4. No observed differences are statistically significant.

[33] 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 most by the costs incurred in large SFAs.

Exhibit 3.1

Total Reported Cost per Reimbursable Lunch by SFA Poverty Status, Size Class, and Percentage of Revenue from à la Carte

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$2.36	$2.22	$0.09	$2.28	$2.28	$0.04	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	$2.36	$2.22	$0.08	$2.28	$2.28	$0.06	9,388	84
60% or more of lunches are free/reduced price	$2.39	$2.28	$0.22	$2.28	$2.28	$0.04	3,180	36
SFA Size								
Small (1-999)	$2.47	$2.22	$0.05	$2.39	$2.21	$0.06	5,238	16
Medium (1,000-4,999)	$2.27	$2.20	$0.10	$2.17	$2.11	$0.08	4,995	37
Large (5,000+)	$2.32	$2.33	$0.07	$2.31	$2.34	$0.05	2,336	67
à la Carte Revenues[a]								
<10 % of Total Revenue	$2.35	$2.22	$0.03	$2.37	$2.44	$0.03	3,807	28
>10% of Total Revenue	$2.52	$2.27	$0.17	$2.25	$2.18	$0.08	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

enrollments over 5,000. Nearly seventy-two percent of the reimbursable lunches served in SY 2005-06 were served in these large SFAs.

Poverty status and the percent SFA revenues derived from à la carte sales do not affect the reported cost of producing a reimbursable lunch.

As noted in Chapter One, the Federal subsidy for free lunches in SY 2005-06 was about $2.51 ($2.32 in cash reimbursements plus $0.175 in entitlement commodities). This was considerably more than the mean reported cost of producing a lunch ($2.36). The mean reported cost of producing a reimbursable lunch was less than the total subsidy for a free lunch in nearly four out of five SFAs (78 percent). Similarly, 76 percent of all reimbursable lunches served in SY 2005-06 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 in the sample is presented in Appendix D (Exhibit D.3). In SY 2005-06, the interquartile range for reported costs per reimbursable breakfast was between $1.24 and $2.05, with a mean cost of $1.92 (Exhibit 3.2). There was considerably more variation among SFAs in reported breakfast costs than in reported lunch costs. The coefficient of variation (the mean divided by the standard deviation) for breakfast was 1.03 compared to 0.42 for lunch.[34] The relatively greater variability in the cost per reimbursable breakfast, at least in part, reflects the variability in unit reported labor costs for breakfast. That is, total breakfast labor costs in a school may be viewed as relatively fixed (up to some point) because of the small size of the breakfast program. Thus, as the number of breakfasts served increases, the reported labor costs per breakfast decreases. The mean reported cost of producing a reimbursable breakfast in small SFAs is significantly more than in other SFAs that have larger breakfast programs (Exhibit 3.2).

When the unit of analysis is the SBP meal, the mean reported cost per reimbursable breakfast was $1.46. Within each SFA size class, the mean reported cost per reimbursable breakfast was lower when the unit of analysis is the SBP meal. This reflects the fact that schools serving large numbers of reimbursable breakfasts tend to have lower unit reported costs. As when the unit of analysis was the SFA, when the unit of analysis is the SBP meal the mean reported cost of producing a reimbursable breakfast in small SFAs is significantly more than in other SFAs that have larger breakfast programs (Exhibit 3.2).[35]

The regular reimbursement rate for free breakfasts in SY 2005-06 was $1.27, with a "severe need" rate of $1.51. In contrast to lunch costs, where the reported cost of producing reimbursable lunches tended to be less than the Federal subsidy for free lunches, in most SFAs, the reported cost of producing reimbursable breakfasts exceeded the free reimbursement rates. In 64 percent of SFAs, reported costs exceeded the reimbursement rate for free breakfasts.[36] Even when the unit of analysis is the SBP meal so that larger SFAs are counted more heavily than smaller SFAs, 42 percent of all breakfasts served in SY 2005-06 were produced at a reported cost that exceeded the reimbursement rate for a free breakfast. 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 is even higher (see Chapter Four).

---

[34] Calculated as the standard error of the mean relative to the mean, scaled by the square root of the unweighted sample size.

[35] The significant difference in the mean reported cost of a reimbursable breakfast between high and low-poverty SFAs may simply reflect the fact that high-poverty SFAs tend to be larger than low-poverty SFAs.

[36] The severe-need reimbursement rate was used for SFAs in which at least 40 percent of the lunches were reimbursed at the free or reduced-price rates. Because this study determined severe need status at the SFA level rather than on a school-by-school basis as specified in the regulations, it therefore assumed that all breakfasts in severe need SFAs were reimbursed at the higher severe need rate. In fact, only those breakfasts served in severe need schools are reimbursed at this higher rate. However, the estimate that in 64 percent of SFAs the reported cost of producing a reimbursable breakfast was above the applicable reimbursement rate seems reasonable since the reported cost of producing a reimbursable breakfast was above the regular free reimbursement rate in 70 percent of ***all*** SFAs and was above the severe need reimbursement rate in 57 percent of ***all*** SFAs (Appendix D, Exhibit D.2.).

Exhibit 3.2

Total Reported Cost per Reimbursable Breakfast by SFA Poverty Status, Size Class, and Percentage of Revenue from à la Carte

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Breakfast			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$1.92	$1.65	$0.18	$1.46	$1.27	$0.06	11,783	116
Poverty Status								
Less than 60% of lunches are free/reduced price	$2.04	$1.73	$0.23	$1.57*	$1.49	$0.08	8,603	80
60% or more of lunches are free/reduced price	$1.60	$1.57	$0.18	$1.33	$1.16	$0.06	3,180	36
SFA Size								
Small (1-999)	$2.38††	$1.81	$0.39	$2.17†††	$1.82	$0.16	4,743	14
Medium (1,000-4,999)	$1.48	$1.24	$0.08	$1.31	$1.20	$0.09	4,704	35
Large (5,000+)	$1.88	$1.76	$0.14	$1.48	$1.36	$0.06	2,336	67
à la Carte Revenues								
<10 % of Total Revenue	$2.35	$1.81	$0.48	$1.36*	$1.20	$0.06	3,480	27
>10% of Total Revenue	$1.86	$1.67	$0.15	$1.61	$1.48	$0.08	5,303	63

Notes:

[a] Excludes 4 SFAs without breakfast programs; an additional 26 SFAs for which student payments for reimbursable meals could not be separated from à la carte payments are also excluded from the breakdown by à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Composition of Reported Costs

As one would expect, food and labor costs accounted for the vast majority (90 percent) of the average SFA's reported costs (Exhibit 3.3). Food costs (including the assigned value of donated commodities) accounted for 46 percent of reported costs, while labor costs accounted for 45 percent of reported costs. All other costs, including supplies, contract services, capital expenditures, indirect charges by the school district, etc., represented only 10 percent of the average SFA's reported costs.[37]

[37] The composition of reported costs by meal production system is presented in Appendix D, Exhibit D.5.

Exhibit 3.3

Composition of Foodservice Reported Costs by SFA Poverty Status, Size Class, and Percentage of Revenue from à la Carte

	Percent of SFA Reported Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	45.6%	44.7%	1.2%	44.5%	44.9%	1.0%	9.9%	8.1%	0.9%	12,568	120
Poverty Status											
Less than 60% of lunches are free/reduced price	46.4	46.1	1.3	44.9	45.3	1.3	8.7**	6.6	1.0	9,388	84
60% or more of lunches are free/reduced price	43.4	41.4	2.1	43.3	44.1	0.9	13.3	12.6	1.3	3,180	36
SFA Size											
Small (1-999)	46.0	45.0	2.0	46.3	46.8	1.8	7.7	5.6	1.8	5,238	16
Medium (1,000-4,999)	46.6	46.1	1.5	41.9	42.8	1.1	11.5	9.3	1.1	4,995	37
Large (5,000+)	42.8	43.2	0.8	45.8	45.2	0.9	11.4	10.4	0.8	2,336	67
à la Carte Revenues[a]											
<10 % of Total Revenue	47.6	43.2	1.2	44.6	46.7	1.5	7.8**	5.7	2.0	3,807	28
≥10% of Total Revenue	43.6	42.1	1.8	43.7	44.0	1.2	12.7	10.5	1.0	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.
**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.
*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

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 2005-06 commodities (including bonus commodities) accounted for 12 percent of the total cost of food used by the average SFA; in 63 percent of all SFAs donated commodities accounted for ***at least*** 10 percent of total food costs (Appendix D, Exhibit D.6). It should be noted that SFAs may use donated commodities for nonreimbursable as well as reimbursable meals.

Proportion of Reported Costs Attributable to Reimbursable Meals

As discussed above, school meal production can involve the preparation and service of à la carte items, adult meals, and other food items (e.g., catering) in addition to the production of reimbursable meals. As there is no separate accounting of the resources used in the production of nonreimbursable meals, the allocation of each SFA's total reported breakfast and lunch costs to reimbursable and nonreimbursable meals was made on the basis of the percentage of breakfast and lunch food costs that are attributable to the production of reimbursable meals. The distribution of SFAs by the percentage of reported costs attributable to the production of reimbursable meals is presented in Appendix D, Exhibit D.7. On average, 86 percent of breakfast costs are attributable to reimbursable breakfasts, while 76 percent of lunch costs are attributable to reimbursable lunches.

There is also very little variation among SFAs in the proportion of total breakfast costs that are attributable to reimbursable meals. In 44 percent of SFAs, reimbursable breakfasts accounted for at least 90 percent of breakfast costs; in nearly all SFAs (89 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.

While, on average, the sale of nonreimbursable meals (particularly à la carte food items) is considerably greater at lunch than at breakfast, there is also more variation among SFAs in the relative magnitude of à la carte and adult meals (Appendix D, Exhibit D.7).

Cost Components of Reimbursable Meals

Reimbursable Lunch Costs

Exhibit 3.4 presents the cost components of reimbursable lunches.[38] For the average SFA, reported food costs per reimbursable lunch were $1.09 in SY 2005-06, with mean reported labor costs of $1.05, and other costs averaging $0.23. There was relatively little variation among SFAs in food costs per reimbursable lunch—in almost half of all SFAs (48 percent) food costs per reimbursable lunch were between $0.90 and $1.20 (Appendix D, Exhibit D.10). Similarly, there was relatively little variation among SFAs in reported labor costs per reimbursable lunch, with 49 percent of SFAs reporting labor costs per reimbursable lunch between $0.80 and $1.10.

[38] Detailed components by SFA characteristics are shown in Exhibits D.8 and D.9.

Exhibit 3.4

Components of Reported Cost of Reimbursable Lunches

Unit of Analysis	Cost Component									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
SFA	$1.09	$1.00	$0.04	$1.05	$0.96	$0.05	$0.23	$0.18	$0.03	12,568	120
Meal	$0.98	$0.96	$0.02	$1.04	$1.02	$0.03	$0.25	$0.24	$0.02	12,568	120

Mean food costs per reimbursable lunch are lower using the meal as the unit of analysis ($0.98 vs. $1.09), perhaps reflecting the greater buying power of the large SFAs that serve large numbers of meals. Labor costs per reimbursable lunch are essentially the same using SFA or the meal as the unit of analysis ($1.05 vs. $1.04).

Reimbursable Breakfast Costs

Exhibit 3.5 presents summary of the cost components of reimbursable breakfasts.[39] For the average SFA, reported food costs per reimbursable breakfast were $0.73 in SY 2005-06, with mean reported labor costs of $1.02, and other costs averaging $0.17. 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 D, Exhibit D.13). 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. As a result, reported labor costs per breakfast decrease as the number of breakfasts served increases.

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 SBP meal breakfast rather than SFA is used as the unit of analysis ($0.64 vs. $1.02), reflecting the lower breakfast labor costs per meal in SFAs serving large numbers of reimbursable breakfasts.

Administrative Labor Costs

Foodservice administrative labor costs include the cost of performing administrative activities in support of foodservice operations, e.g., administrative tasks performed by central foodservice staff, school-based foodservice staff (e.g., kitchen managers), central school district personnel, and school administrators (e.g., principals). Reported administrative costs include only those costs that are charged to the foodservice budget. In addition to foodservice personnel administrative labor costs, this category also includes school district (i.e., non-foodservice) personnel that provide support to foodservice when the school district charges foodservice as a direct cost for these services.[40]

This study has broadly defined foodservice administration to include regular administrative activities such as planning, budgeting, and management for the foodservice program, and other non-production activities such as maintenance of foodservice equipment. Exhibit 3.6 examines administrative labor costs in relation to total SFA reported labor costs. For the average SFA, administrative labor accounted for 19 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, 16 percent of SFAs devoted less than 10 percent of reported labor to administrative activities, while at the other extreme 14 percent of SFAs devoted at least 30 percent of reported labor to administration (Appendix D, Exhibit D.14). Some of this variation no doubt reflects differences

[39] Detailed components by SFA characteristics are presented in Exhibits D.11 and D.12.

[40] As discussed in Chapter Five, only about 16 percent of school districts charge foodservice directly for support services provided by school district personnel. These costs may be charged to SFA budgets as part of indirect costs, in which case they would not be included in administrative costs.

Exhibit 3.5

Components of Reported Cost of Reimbursable Breakfasts

Unit of Analysis	Cost Component									SFA Sample Size[a]	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
SFA	$0.73	$0.67	$0.03	$1.02	$0.81	$0.16	$0.17	$0.14	$0.02	11,783	116
Meal	$0.65	$0.61	$0.02	$0.64	$0.59	$0.04	$0.17	$0.14	$0.01	11,783	116

Note:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit 3.6

Reported Administrative Labor Costs as a Percentage of Total Reported Labor Costs by SFA Poverty Status, Size Class, and Percentage of Revenue from à la Carte

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	18.6%	18.1%	1.1%	22.6%	22.2%	1.0%	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	17.4*	16.4	1.5	21.3*	22.0	1.1	9,388	84
60% or more of lunches are free/reduced price	22.2	22.0	1.4	24.9	26.7	1.4	3,180	36
SFA Size								
Small (1-999)	13.9†††	12.6	1.2	14.0†††	12.6	1.7	5,238	16
Medium (1,000-4,999)	20.9	20.1	1.4	20.3	20.1	1.0	4,995	37
Large (5,000+)	24.2	22.2	1.6	23.9	22.5	1.2	2,336	67
à la Carte Revenues[a]								
<10 % of Total Revenue	17.4	16.4	1.2	25.2	28.2	1.5	3,807	28
≥10% of Total Revenue	20.1	20.1	1.6	22.0	21.4	0.9	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

among SFAs in what is, and what is not, charged to the foodservice budget. For example, in some school districts, the foodservice director's salary is charged to the school district budget rather than the foodservice 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 8 percent of total reported costs in SY 2005-06. In nine out of ten SFAs (93 percent), administrative labor accounted for less than 15

Exhibit 3.7

Reported Administrative Labor Costs as a Percentage of Total Reported Costs by SFA Poverty Status, Size Class, and Percentage of Revenue from à la Carte

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	8.2%	8.1%	0.5%	10.3%	10.4%	0.5%	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	7.7	7.8	0.7	9.5**	9.7	0.5	9,388	84
60% or more of lunches are free/reduced price	9.7	10.4	0.5	11.6	11.0	0.8	3,180	36
SFA Size								
Small (1-999)	6.5†††	5.9	0.6	6.6†††	5.9	0.8	5,238	16
Medium (1,000-4,999)	8.7	8.2	0.6	8.7	8.2	0.4	4,995	37
Large (5,000+)	11.0	10.7	0.7	11.1	10.8	0.6	2,336	67
à la Carte Revenues[a]								
<10% of Total Revenue	7.9	7.8	0.5	11.5	11.2	0.9	3,807	28
≥10% of Total Revenue	8.9	8.3	0.8	10.1	9.8	0.5	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

percent of total reported costs (Appendix D, Exhibit D.15). As one would expect, administrative labor costs were relatively higher in large school districts (enrollment ≥ 5,000) than in small districts (enrollment ≤ 1,000).[41]

[41] Reported administrative costs by meal production system are presented in Appendix D, Exhibit D.16.

Chapter Four

Estimates of Unreported and Full Costs

As discussed in Chapter One, SFAs' reported costs as defined in this report include only those costs that are charged to the nonprofit school foodservice account, which SFAs are expected to cover from revenues generated from foodservice sales and government reimbursements. However, reported costs often do not reflect the cost of all costs attributable to foodservice operations. Nearly all school districts incur some costs in support of foodservice operations that are not charged to the nonprofit foodservice account. *Unreported costs* are defined as costs attributable to foodservice operations that are not charged to the nonprofit foodservice account. The full costs of SFA's foodservice operations are the sum of total reported costs and total unreported costs.

This chapter presents an analysis of SFAs' ***full costs*** for SY 2005-06. 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 mean ***full cost*** of producing a reimbursable lunch?
- What is the national mean ***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 is the percentage of full costs are attributable to foodservice 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 foodservice operations include:

- Unreported costs, as measured in this study[42], accounted for an average of 19 percent of the full cost of foodservice operations in SY 2005-06.
- Three line items—labor (61 percent), unreported indirect costs (26 percent), and equipment depreciation (10 percent)—accounted for nearly all (97 percent) of unreported costs in SY 2005-06.
- The national mean full cost of producing a reimbursable lunch in SY 2005-06 was $2.91 when the unit of analysis is the SFA. This compares with a mean reported cost of $2.36.
- The national mean full cost of producing a reimbursable breakfast in SY 2005-06 was $2.50 when the SFA is the unit of analysis. This compares with a mean reported cost of $1.92.

[42] See footnote 20 in Chapter Two.

- In two out of three SFAs (68 percent) the full cost of producing a reimbursable lunch was greater than the total Federal subsidy for a free lunch. Approximately 72 percent of all reimbursable lunches were produced at a full cost that was greater than the total Federal subsidy for a free lunch.
- In 82 percent of SFAs, the full cost of producing a reimbursable breakfast was greater than total federal subsidy for a reimbursable breakfast. Approximately 67 percent of all reimbursable breakfasts were produced at a full cost that was greater than the applicable full Federal subsidy for a free breakfast.[43]
- On a full cost basis, food costs accounted for an average of 37 percent of foodservice costs; labor costs accounted for 48 percent of foodservice costs; and other costs accounted for the remaining 15 percent of foodservice costs.
- Administrative labor costs accounted for 10 percent of the average SFA's full cost.

Unreported Costs

Magnitude of Unreported Costs

Exhibit 4.1 examines the magnitude of unreported costs in relation to the full cost of foodservice operations. On average, unreported costs accounted for 19 percent of full costs in SY 2005-06, and do not appear to vary by SFA size or meal production system.[44] In about nine out of ten SFAs (89 percent), unreported costs accounted for less than 30 percent of full costs (Appendix D, Exhibit D.18).[45] It should be noted that not all unreported costs are attributable to reimbursable meals.

Composition of Unreported Costs

Exhibit 4.2 presents the components of unreported costs as a percentage of total unreported costs. Three categories of unreported costs account for nearly all unreported costs (97 percent). Unreported labor (which includes salaries and fringe benefits) represented 61 percent of total unreported costs, unreported indirect costs represented 26 percent, and unreported equipment depreciation represented 10 percent. Unreported utility costs represented an additional 3 percent. The discussion below examines each of these categories of unreported costs.

Unreported Labor Costs

As noted above, school district personnel often provide support for foodservice 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 foodservice activities; in some cases, SFAs are charged for indirect costs based

[43] The severe-need reimbursement rate was used for SFAs in which at least 40 percent of lunches were reimbursed at the free or reduced-price rates.

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

[45] Components of unreported costs as a percentage of total full cost by poverty status, SFA size, and type of meal production system in Appendix D, Exhibits D.19-D.22.

Exhibit 4.1

Total Unreported Costs as a Percentage of Total Full Costs by SFA Size

	Mean	Median	Std Err of Mean	SFA Sample Size	
				Weighted	Unweighted
Total	19.1%	19.2%	1.1%	12,568	120
SFA Size					
Small (1-999)	18.9	20.5	1.6	5,238	16
Medium (1,000-4,999)	19.6	19.3	1.0	4,995	37
Large (5,000+)	18.3	17.5	1.1	2,336	67

Notes:

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit 4.2

Components of Unreported Costs as a Percentage of Total Unreported Costs

Item	Mean	Median	Std Err of Mean
Labor	61.3%	64.9%	3.0
Food	0.0	0.0	0.0
Supplies	0.0	0.0	0.0
Utilities	2.5	0.0	0.8
Equipment Depreciation	9.9	7.0	1.3
Other Direct Costs	0.5	0.0	0.3
Indirect Costs	25.8	22.1	2.7
Grand Total	100%	100%	

Note:

Unweighted N = 119; weighted N = 12,220

Excludes one SFA with no unreported costs.

on the school district's indirect cost rate; and in other cases, direct and/or indirect SFA costs are absorbed by the school district (i.e., not charged to the SFA budget (unreported costs)).[46] Unreported labor can include both school district central staff and school-based personnel (e.g., principals, secretaries, etc.) that spend some portion of their time working on foodservice activities. SFA directors identified school district central staff that provided support for foodservice but were neither directly charged to the foodservice account nor included in an indirect cost charge to the account. The SFA directors estimated the amount of time that each person spent on foodservice activities. Similarly, school principals identified and estimated the amount of time that school personnel spent

[46] School districts may or may not charge indirect costs to the SFA budget. In cases where a school district does not charge foodservice 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.

on foodservice 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 61 percent of total unreported costs in SY 2005-06. In only 5 percent of SFAs did unreported labor account for less than 20 percent of total unreported costs (Appendix D, Exhibit D.23). At the other extreme, unreported labor accounted for at least 70 percent of total unreported costs in 43 percent of all SFAs. In this sample, unreported labor was a larger component of total unreported costs for large and medium size SFAs than for small SFAs, though the observed differences are not statistically significant.[47] This resulted not from the use of relatively more unreported labor, but rather because in larger SFAs in this sample, other cost elements (such as indirect costs and equipment depreciation) were more likely to be reported than in small SFAs.

Exhibit 4.4 examines unreported labor costs as a percentage of total labor costs. On average, unreported labor accounted for one quarter (25 percent) of total labor costs. In only 41 percent of SFAs did unreported labor represent less than 20 percent of total labor costs (Appendix D, Exhibit D.25). However, for 14 percent of SFAs, unreported labor accounted for at least 40 percent of total labor costs.[48]

Exhibit 4.3

Unreported Labor Costs as a Percentage of Total Unreported Costs by SFA Size Class

	Mean	Median	Std Err of Mean	SFA Sample Size[a] Weighted	SFA Sample Size[a] Unweighted
Total	61.3%	64.9%	3.0%	12,220	119
SFA Size					
Small (1-999)	55.7	57.1	5.2	4,890	15
Medium (1,000-4,999)	65.5	66.9	3.5	4,995	37
Large (5,000+)	64.1	64.5	3.2	2,336	67

Notes:

[a] Excludes one SFA with no unreported costs.

††† Differences among the three size categories statistically significant at the 1 percent level.

†† Differences among the three size categories statistically significant at the 5 percent level.

† Differences among the three size categories statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

47 Additional detail by type of meal production system is presented in Appendix D, Exhibit D.24.

48 Additional detail by type of meal production system is presented in Appendix D, Exhibit D.26.

Exhibit 4.4

Unreported Labor Costs as a Percentage of Full Labor Costs by SFA Size Class

	Mean	Median	Std Err of Mean	SFA Sample Size	
				Weighted	Unweighted
Total	24.8%	26.9%	1.8%	12,568	120
SFA Size					
Small (1-999)	22.5	20.8	2.6	5,238	16
Medium (1,000-4,999)	28.2	27.3	2.1	4,995	37
Large (5,000+)	22.9	22.1	1.3	2,336	67

Notes:

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

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-based labor). On average, school-based labor accounted for 86 percent of total unreported labor. This included two major components:

- ***School-based meal labor***, including supervision of students during meals, collecting money for meals, and cleaning up foodservice areas at meal times; and
- ***School-based administrative labor***, such as processing and verifying applications for school meal benefits, and management of cafeteria personnel.

School-based meal labor might be viewed as a cost of school operations, rather than foodservice, on the grounds that students would eat at school even if there were no USDA-subsidized meals. This cost is included, however, because the responsibility for these activities varies. In particular, some school districts hire aides to supervise students during meals and charge this cost to the school foodservice account. Collection of money for meals may be done by foodservice personnel, school personnel, or a combination of the two. Therefore, the cost of school-based meal labor must be included to have a measure of full costs that is comparable across all SFAs.

School-based meal labor constituted 68 percent of unreported labor costs, while school-based administrative labor made up 18 percent. These proportions varied with SFA size, with large SFAs having the greatest proportion for school meal labor (87 percent) and small SFAs having the greatest proportion for school-based administrative labor (24 percent). Combining these two figures, large SFAs incurred 96 percent of unreported labor costs at the school level, notably more than medium-size SFAs at 85 percent and small SFAs at 83 percent.

Exhibit 4.5

Unreported School-Based Labor Costs as a Percentage of Total Unreported Labor Costs by SFA Size Class

	School-Based Meal Labor/ Unreported Labor			School-Based Administrative Labor/Unreported Labor			School-Based Labor as a Percent of Total Unreported Labor			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	68.1%	73.8%	2.9%	18.4%	14.9%	2.0%	86.4%	100.0%	3.1%	11,831	117
SFA Size											
Small (1-999)	59.3†††	59.6	5.9	24.0†††	26.2	2.4	83.3††	100.0	6.3	4,527	15
Medium (1,000-4,999)	67.3	73.8	4.1	17.3	8.6	1.1	84.6	100.0	4.1	4,995	37
Large (5,000+)	86.7	92.5	2.3	9.7	5.5	3.0	96.4	100.0	1.2	2,309	67

Notes:

[a] Excludes 3 SFAs with no unreported labor costs.

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Smaller 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 by SFA personnel in small SFAs, while in larger SFAs, those same activities are more likely to be carried out by non-SFA personnel.[49]

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 foodservice (or other grant programs). Some school districts recognize (i.e., calculate) the indirect costs that are attributable to foodservice, but do not report these costs in the foodservice account, or report only a portion of the calculated indirect costs.

Exhibit 4.6 presents the distribution of SFAs by whether they reported all indirect costs, some indirect costs, or no indirect costs (that were attributable to school foodservice) to the school foodservice account. In more than four out of five SFAs (84 percent) where the school district had indirect costs that could be applied to foodservice, the SFA did not report any indirect costs on the foodservice account.[50]

Unreported indirect costs represent school district costs attributable to foodservice and accounted for five percent of the full cost of foodservice (Appendix D, Exhibit D.21). Unreported indirect costs accounted for 26 percent of total unreported costs for the average SFA as shown in Exhibit 4.7. For 25 percent of all SFAs, unreported indirect costs accounted for less than 10 percent of total unreported costs (Appendix D, Exhibit D.29). At the other extreme, in 16 percent of SFAs

Exhibit 4.6

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

Size Class	Report None	Report Some	Report All	All SFAs
Small SFAs	93.4%	0.0%	6.6%	100.0%
Medium SFAs	79.1	11.0	9.9	100.0
Large SFAs	73.8	14.8	11.4	100.0
All SFAs[a]	84.1	7.1	8.8	100.0

Notes:

[a] Unweighted N = 120; weighted N = 12,568

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

[49] Appendix D, Exhibit D.27 presents the distribution of unreported school-based labor across SFAs. Appendix D, Exhibit D.28 presents unreported school-based labor costs as a percentage of total unreported labor costs separately for different meal production systems.

[50] As discussed in Chapter Five, even in cases where the SFA reported indirect costs, the school district might not recover these costs (i.e., funds were not transferred from the foodservice account to the school district general fund).

Exhibit 4.7

Unreported Indirect Costs as a Percentage of Total Unreported Costs by SFA Size Class

	Mean	Median	Std Err of Mean	SFA Sample Size[a]	
				Weighted	Unweighted
Total	25.8%	22.1%	2.7%	12,220	119
SFA Size					
Small (1-999)	32.2	29.1	5.4	4,890	15
Medium (1,000-4,999)	21.5	16.6	3.0	4,995	37
Large (5,000+)	21.4	21.9	2.6	2,336	67

Notes:

[a] Excludes one SFA with no unreported costs.

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

unreported indirect costs accounted for at least half of total unreported costs. In this sample, unreported indirect costs accounted for an average of about 32 percent of total unreported costs in small SFAs, compared to only 21 percent in and medium and large size SFAs, though the observed differences are not statistically significant.[51] This reflects the fact that relatively few (7 percent) small SFAs had reported indirect costs compared to over 20 percent of medium and large size SFAs which had these costs. Indirect costs are described in more detail in Chapter Five.

Unreported Equipment Depreciation

Equipment depreciation is rarely reported by SFAs. In SY 2005-06, only 27 percent of SFAs had reported depreciation costs.[52] Consequently, as part of the cost interviews, respondents were asked either for an estimate of equipment depreciation in each sample school (or all schools) or for an estimate of the total equipment value.[53]

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

[52] Depreciation was more likely to be reported by large SFAs (35 percent) than small (24 percent) or medium size SFAs (26 percent).

[53] In about one-half of the SFAs, equipment depreciation (on old and new equipment) had to be imputed. There is some evidence that reported depreciation costs slightly understate the full cost. The median unreported depreciation estimate was 3.3 percent of the reported cost of food and labor (based on 27 SFAs, most of which provided estimates of equipment value which were then depreciated over 12 years). The median reported depreciation estimate was 1.9 percent of the reported cost of food and labor (based on 36 SFAs). The overall median of 2.1 percent was used to impute unreported depreciation for the 57 SFAs that did not provide any data on depreciation or equipment value. Thus, the use of equipment inventory data might have increased the estimated full cost of depreciation and the share of full costs for depreciation by a modest amount, substantially less than 1 percent of total full costs

Exhibit 4.8 examines unreported depreciation as a percentage of total unreported costs. Unreported depreciation represented, on average, 10 percent of total unreported costs, and in only 13 percent of SFAs did unreported depreciation account for as much as 20 percent of total unreported costs (Appendix D, Exhibit D.31).[54]

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.[55] On average, unreported utility costs represented three percent of total unreported costs. In nearly all SFAs (97 percent), unreported utility costs accounted for less than 20 percent of total unreported costs (Appendix D, Exhibit D.34).

Full Cost of Producing Reimbursable Meals

Full Cost per Reimbursable Lunch

The interquartile range of full costs per reimbursable lunch in SY 2005-06 in the sample was between $2.38 and $3.21. In nearly one third (30 percent) of all SFAs, the ***full*** cost per reimbursable lunch was at least $3.00 (Appendix D, Exhibit D.35). By contrast, in only 13 percent of SFAs was the ***reported*** cost per reimbursable lunch this high.

Exhibit 4.8

Unreported Depreciation as a Percentage of Total Unreported Costs by SFA Size Class

	Mean	Median	Std Err of Mean	SFA Sample Size[a] Weighted	SFA Sample Size[a] Unweighted
Total	9.9%	7.0%	1.3%	12,220	119
SFA Size					
Small (1-999)	8.8%	7.0%	1.0%	4,890	15
Medium (1,000-4,999)	10.8%	7.1%	1.9%	4,995	37
Large (5,000+)	10.2%	5.7%	2.3%	2,336	67

Notes:

[a] Excludes one SFA with no unreported costs.

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

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

[55] Additional detail by type of meal production system is presented in Appendix D, Exhibit D.33.

Exhibit 4.9

Unreported Utility Costs as a Percentage of Total Unreported Costs by SFA Size Class

				SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	2.5%	0.0%	0.8%	12,220	119
SFA Size					
Small (1-999)	2.5%	0.0%	0.9%	4,890	15
Medium (1,000-4,999)	1.7%	0.0%	1.3%	4,995	37
Large (5,000+)	4.3%	0.0%	1.6%	2,336	67

Notes:

[a] Excludes one SFA with no unreported costs.

††† Differences among the three size categories statistically significant at the 1 percent level.
†† Differences among the three size categories statistically significant at the 5 percent level.
† Differences among the three size categories statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit 4.10 summarizes the full cost of producing reimbursable lunches using both the SFA and the reimbursable lunch as the unit of analysis. When the unit of analysis is the SFA, the mean full cost of a reimbursable lunch was $2.91. For the average SFA the full cost of producing a reimbursable lunch was 25 percent higher than the reported cost (mean full cost of $2.91 vs. mean reported cost of $2.36).[56]

The total Federal subsidy for free lunches in SY 2005-06 ($2.51) was less than the mean full cost of producing a lunch ($2.91). The full cost of producing a reimbursable lunch was less than the total subsidy for a free lunch in 68 percent of SFAs. Similarly, 72 percent of all reimbursable lunches served in SY 2005-06 were produced at a full cost that was lower than the total subsidy for a free lunch.

Full Cost per Reimbursable Breakfast

In SY 2005-06 full costs per reimbursable breakfast in the sample was between $1.51 and $2.85, with the interquartile range for a mean cost of $2.50 using the SFA as the unit of analysis (Exhibit 4.11).[57] Unreported costs had a greater effect on breakfast full costs than lunch full costs. For the average SFA, the full cost of a breakfast was 30 percent higher than the reported cost of a breakfast (mean full cost of $2.50 vs. mean reported cost of $1.92).

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 mean full cost per reimbursable breakfast

[56] Full cost per reimbursable lunch and breakfast by meal production system is presented in Appendix D, Exhibit D.37.

[57] See Exhibit D.36 (Appendix D) for the distribution of SFAs by full cost per reimbursable breakfast.

Exhibit 4.10

Total Full Cost per Reimbursable Lunch by Poverty Status, SFA Size, and Percentage of Revenue from à la Carte Sales

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$2.91	$2.75	0.102	$2.79	$2.70	0.048	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	$2.94	$2.80	0.108	$2.83	$2.82	0.062	9,388	84
60% or more of lunches are free/reduced price à la carte	$2.81	$2.64	0.184	$2.74	$2.68	0.043	3,180	36
SFA Size								
Small (1-999)	$3.04	$2.90	0.104	$2.87	$2.74	0.085	5,238	16
Medium (1,000-4,999)	$2.79	$2.57	0.095	$2.65	$2.56	0.069	4,995	37
Large (5,000+)	$2.86	$2.88	0.078	$2.83	$2.83	0.057	2,336	67
à la Carte Revenues[a]								
<10 % of Total Revenue	$3.03	$2.90	0.061	$2.91	$2.90	0.042	3,807	28
>10% of Total Revenue	$3.00	$2.80	0.155	$2.76	$2.67	0.076	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 4.11

Total Full Cost per Reimbursable Breakfast by Poverty Status, SFA Size, and Percentage of Revenue from à la Carte Sales

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Breakfast			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$2.50	$2.24	0.218	$1.81	$1.70	0.068	11,783	116
Poverty Status								
Less than 60% of lunches are free/ reduced price	$2.66	$2.25	0.289	$1.92	$1.90	0.097	8,603	80
60% or more of lunches are free/reduced price	$2.07	$2.21	0.172	$1.68	$1.44	0.079	3,180	36
SFA Size								
Small (1-999)	$3.15	$2.68†	0.498	$2.78†††	$2.68	0.213	4,743	14
Medium (1,000-4,999)	$1.97	$1.70	0.114	$1.64	$1.41	0.110	4,704	35
Large (5,000+)	$2.23	$2.15	0.143	$1.82	$1.84	0.074	2,336	67
à la Carte Revenues								
<10% of Total Revenue	$3.19	$2.68	0.573	$1.71	$1.72	0.085	3,480	27
>10% of Total Revenue	$2.33	$2.17	0.158	$1.98	$1.90	0.099	5,303	63

Notes:

[a] Excludes 4 SFAs without breakfast programs; an additional 26 for which student payments for reimbursable meals could not be separated from à la carte payments are also excluded from the breakdown by à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

was $1.81. This reflects the effect of schools serving large numbers of reimbursable breakfasts which tended to have lower unit costs. Small SFAs had significantly higher mean full cost per reimbursable breakfast ($2.78) than medium ($1.64) or large ($1.82) sized SFAs.

The regular reimbursement rate for free breakfasts in SY 2005-06 was $1.27, with a "severe need" rate of $1.51. The rates were almost always insufficient to cover the fu11 cost of producing a reimbursable breakfast. The reimbursement rate for a free breakfast was sufficient to cover reported costs in only 18 percent of SFAs.[58] Even when the unit of analysis is the SBP meal, only 33 percent of all breakfasts served in SY 2005-06 were produced at a full cost less than the reimbursement rate for a free breakfast. 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 (85 percent) of the full cost of foodservice operations for the average SFA (Exhibit 4.12).[59] However, food costs (including the assigned value of donated commodities) accounted for 37 percent of full costs, compared to 46 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 48 percent of full costs (45 percent of reported costs). All other costs, including supplies, contract services, depreciation, indirect charges by the school district etc., represented 15 percent of the average SFA's full costs (10 percent of reported costs).

Components of the Full Cost of Reimbursable Lunches

Exhibit 4.13 presents a summary of the components of the full cost of reimbursable lunches.[60] For the average SFA, food costs per reimbursable lunch were $1.09 in SY 2005-06, with mean labor costs of $1.39, and other costs averaging $0.43.

---

[58] The severe-need reimbursement rate was used for SFAs in which at least 40 percent of lunches were claimed at the free or reduced-price rates. As noted in Chapter 3, because this study determined severe need status at the SFA level rather than on a school-by-school basis as specified in the regulations, it assumed that all breakfasts in severe need SFAs were reimbursed at the higher severe need rate. In fact, only those breakfasts served in severe need schools are reimbursed at this higher rate. However, the estimate that in 18 percent of SFAs the full cost of producing a reimbursable breakfast was below the applicable reimbursement rate seems reasonable since the full cost of producing a reimbursable breakfast was below the regular free reimbursement rate in 11 percent of ***all*** SFAs and was below the severe need reimbursement rate in 27 percent of ***all*** SFAs (Appendix D, Exhibit D.2.).

[59] Additional detail by type of meal production system is presented in Appendix D, Exhibit D.38.

[60] Appendix D, Exhibit D.39 shows the distribution of SFAs by full food costs and full labor costs per reimbursable lunch; Exhibits D.40 and D.41 present the by full food costs and full labor costs per reimbursable lunch by type of SFA.

Exhibit 4.12

Composition of Foodservice Full Costs by Poverty Status, SFA Size, and Percentage of Revenue from à la Carte Sales

	Percent of SFA Full Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	36.8%	35.7%	1.1%	48.3%	47.1%	1.0%	14.9%	14.3%	0.9%	12,568	120
Poverty Status											
Less than 60% of lunches are free/reduced price	37.2	35.7	1.2	48.6	47.1	1.2	14.2	13.4	1.1	9,388	84
60% or more of lunches are free/reduced price	35.6	36.0	1.9	47.6	44.3	1.5	16.7	16.3	0.8	3,180	36
SFA Size											
Small (1-999)	37.1	37.9	2.1	49.0	44.7	2.1	13.9	14.2	1.4	5,238	16
Medium (1,000-4,999)	37.3	35.2	1.2	47.5	47.1	1.0	15.3	15.6	1.3	4,995	37
Large (5,000+)	35.0	35.0	0.9	48.7	47.5	0.8	16.3	15.3	0.9	2,336	67
à la Carte Revenues[a]											
<10% of Total Revenue	36.8	35.7	0.6	49.7	50.3	2.0	13.4	13.2	1.9	3,807	28
≥10% of Total Revenue	35.9	33.9	1.5	47.4	47.1	1.2	16.8	16.1	1.2	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 4.13

Components of the Full Cost of Reimbursable Lunches

Unit of Analysis	Cost Component									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
SFA	$1.09	$1.00	$0.04	$1.39	$1.24	$0.06	$0.43	$0.38	$0.03	12,568	120
Meal	$0.98	$0.96	$0.02	$1.36	$1.29	$0.03	$0.45	$0.42	$0.02	12,568	120

Mean food costs per reimbursable lunch are lower using the meal as the unit of analysis ($0.98 vs. $1.09), perhaps reflecting the greater buying power of the large SFAs.[61] Mean labor costs per lunch are about the same using the meal as the unit of analysis ($1.36 vs. $1.39).

Components of the Full Cost of Reimbursable Breakfasts

Exhibit 4.14 examines the components of the full cost of reimbursable breakfasts.[62] For the average SFA, food costs per reimbursable breakfast were $0.73 in SY 2005-06, with mean labor costs of $1.38, and other costs averaging $0.38. There is considerably more variation in breakfast labor costs than breakfast food costs (Appendix D, Exhibit D.42). 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 ($0.65 vs. $0.73), mean labor costs are considerably lower using the meal as the unit of analysis ($0.86 vs. $1.38). This reflects the economies of scale in breakfast production—schools that served large numbers of reimbursable breakfasts tended to have much lower labor costs per meal than schools that served relatively few reimbursable breakfasts.

Full Administrative Labor Costs

Foodservice administrative labor costs include the cost of performing administrative activities in support of foodservice operations, e.g., administrative tasks performed by central foodservice staff, school-based foodservice staff (e.g., kitchen managers), central school district personnel, and school administrators (e.g., principals). This study has broadly defined foodservice administration to include regular administrative activities such as planning, budgeting and management for the foodservice program, and other non-production activities such as maintenance of foodservice equipment.

Exhibit 4.15 examines full administrative labor costs (including unreported administrative labor costs) in relation to full labor costs.[63] When the unit of analysis is the SFA, full administrative labor costs account for 20 percent of full labor costs. Similarly, when the reimbursable lunch is the unit of analysis, the mean is 21 percent.

Exhibit 4.16 examines full administrative labor costs in relation to total full costs. Administrative labor accounted for a relatively small proportion of total full costs. For the average SFA, total administrative labor cost accounted for 10 percent of total full costs in SY 2005-06. In seven out of ten SFAs, administrative (and other non-production) labor accounted for less than 20 percent of total full costs (Appendix D, Exhibit D.47).

---

[61] Prices on some of the most commonly used ingredients in the large certainty districts in the sample were lower than in all other districts, combined. The observed difference could reflect different menus, but this seems less likely.

[62] Appendix D, Exhibits D.43 and D.44 present this information by type of SFA.

[63] Appendix D, Exhibits D.45 and D.46 present additional details: labor costs by meal production system; and distribution of SFAs by labor costs.

Exhibit 4.14

Components of the Full Cost of Reimbursable Breakfasts

Unit of Analysis	Cost Component									SFA Sample Size[a]	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
SFA	$0.73	$0.67	$0.03	$1.38	$1.11	$0.18	$0.38	$0.32	$0.04	11,783	116
Meal	$0.65	$0.61	$0.02	$0.86	$0.75	$0.05	$0.30	$0.23	$0.01	11,783	116

Note:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit 4.15

Full Administrative Labor Costs as a Percentage of Total Full Labor Costs

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	19.6%	18.6%	1.0%	20.7%	19.5%	0.7%	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	19.2	18.5	1.3	20.0	19.2	0.9%	9,388	84
60% or more of lunches are free/reduced price	20.7	21.1	0.9	21.9	22.3	1.0%	3,180	36
SFA Size								
Small (1-999)	17.3	16.0	1.2	16.6	16.0	1.7%	5,238	16
Medium (1,000-4,999)	21.2	21.1	0.7	19.8	18.6	0.4%	4,995	37
Large (5,000+)	21.4	19.5	1.4	21.2	20.7	1.0%	2,336	67
à la Carte Revenues[a]								
<10% of Total Revenue	20.2	18.5	1.0	22.0	22.3	1.3%	3,807	28
>10% of Total Revenue	20.2	20.1	1.2	20.6	19.3	0.7%	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 4.16

Full Administrative Labor Costs as a Percentage of Total Full Costs

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	9.5%	8.9%	0.5%	10.1%	9.5%	0.4%	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	9.4	8.5	0.7	9.6	9.0	0.4	9,388	84
60% or more of lunches are free/reduced price	9.8	9.7	0.3	10.9	10.9	0.6	3,180	36
SFA Size								
Small (1-999)	8.6	8.4	0.7	8.2	8.4	0.9	5,238	16
Medium (1,000-4,999)	10.1	9.5	0.5	9.5	9.1	0.3	4,995	37
Large (5,000+)	10.3	9.3	0.7	10.4	9.5	0.5	2,336	67
à la Carte Revenues[a]								
<10% of Total Revenue	10.1	8.4	0.4	11.0	10.6	0.7	3,807	28
>10% of Total Revenue	9.7	9.0	0.7	10.1	9.3	0.4	5,594	65

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Chapter Five

Analysis of School District Indirect Costs

SFAs (and other school district grants and programs) often use a variety of resources that are provided or purchased by the school district, including:

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

There are several ways in which a school district may account for these costs. First, costs which the school district can and wants to identify as costs related to foodservice are treated as ***direct foodservice costs***. These costs may be charged to the foodservice account and reported on the SFA's expense statement, or they may be absorbed by the school district, in which case they would be ***unreported direct foodservice*** costs.

Alternatively such costs may be treated as ***indirect costs***. Indirect costs represent overhead-type expenses; they are expenses incurred by the school district that are not practical to identify with specific functions or activities (such as foodservice), but are necessary for the general operation of the organization and the conduct of activities it performs. Many school districts use ***indirect cost rates*** to distribute such costs to benefiting activities. An indirect cost rate is the ratio of an organization's (in this case the school district) indirect costs to its direct costs, computed for the purpose of allocating indirect costs to grants and programs operated by the organization.[64]

This chapter presents an analysis of school district indirect costs. The following terminology is used throughout this chapter:

- ***Reported Indirect Costs***. If a school district has an indirect cost rate and applies this rate to calculate the indirect costs that are attributable to the SFA, the amount so calculated are the SFA's reported indirect costs.

---

[64] The Office of Management and Budget Circular A-87 sets guidelines for which indirect costs are allowable to be allocated to grants and programs receiving Federal funds; individual programs may have additional restrictions. State and local governments may use methods other than indirect cost rates, such as allocation of costs in proportion to staff hours, to allocate indirect costs. In this study, no school district used an indirect cost allocation method other than indirect cost rates.

U.S. Department of Education regulates the allocation of indirect costs pool by school districts to its grants and oversees the role of State Education Agencies (SEAs) in setting the methods by which school districts compute and use indirect cost rates. SEAs generally specify the types of indirect and direct costs included in the computation of school district indirect cost rates.

- ***Unreported Indirect Costs***. If a school district has an indirect cost rate and but does not apply this rate to calculate the indirect costs that are attributable to the SFA, the indirect costs that would have resulted from such a calculation are the SFA's unreported indirect costs. If a school district applies its indirect cost rate to calculated the indirect costs that are attributable to the SFA, but the SFA does not report the full amount so calculated on its annual financial statement, the difference between the full amount calculated and the amount reported on the SFA's annual financial statement are the SFA's unreported indirect costs. It is therefore possible for an SFA to have both reported and unreported indirect costs.
- ***Recovered Indirect Costs***. The calculation (and reporting) of indirect costs does not mean that the school district actually recovers the amount calculated (or reported). Recovery of indirect costs requires that funds actually be transferred from the SFA account to the school district's general fund. It is therefore possible for a school district to charge, and the SFA report, indirect costs without the school district recovering these costs.

The chapter is divided into three sections. The first section examines SFAs' reporting of indirect costs attributable to their operations and the recovery of such indirect costs by school districts.[65] The second section examines the reporting and recovery of indirect costs attributable to school districts' other grants and programs. The central question addressed in this section is whether or not school districts treat other grants and programs the same way as foodservice with regard to reporting and recovery of indirect costs. The third section, intended for readers seeking more technical details, describes the construction and adjustment of school districts' indirect cost rates.

The key findings with regard to indirect costs include:

- While nearly all school districts (95 percent) had an indirect cost rate that could be applied to foodservice, most school districts (79 percent) did not calculate the indirect costs attributable to the SFA (and no indirect costs were reported on the SFA's expense statement). Sixteen percent of all school districts calculated the indirect costs attributable to the SFA. Of the 16 percent of SFAs for which the school district calculated indirect costs, only 9 percent reported all of the indirect costs attributable to foodservice, and 7 percent reported some of the indirect costs attributable to food service.
- Among the 16 percent of school districts in which SFAs reported at least some indirect costs, about one-quarter (4 percent of all districts) recovered all of these reported indirect costs from the foodservice account.
- The most common reason for not recovering all reported indirect costs from foodservice was that the district did not charge indirect costs for any grant or program.
- Twenty three percent of school districts reported indirect costs for all grants and programs (other than school meal programs) that allowed them, and 24 percent reported indirect costs for some but not all grants and programs. Thus, districts reported indirect costs much less often for school meal programs than for other grants and programs.

[65] In this chapter, reporting of foodservice indirect costs is considered a function of the SFA, since this is part of the preparation of the financial statement for the school foodservice account. In practice, this statement may be prepared by foodservice personnel or general administrative personnel of the school district.

- Most school districts (75 percent) recovered the full indirect costs when calculated for other grants and programs. The opposite was the case for foodservice indirect costs, as noted above.

Reporting and Recovery of School Foodservice Indirect Costs

Reporting of School Foodservice Indirect Costs

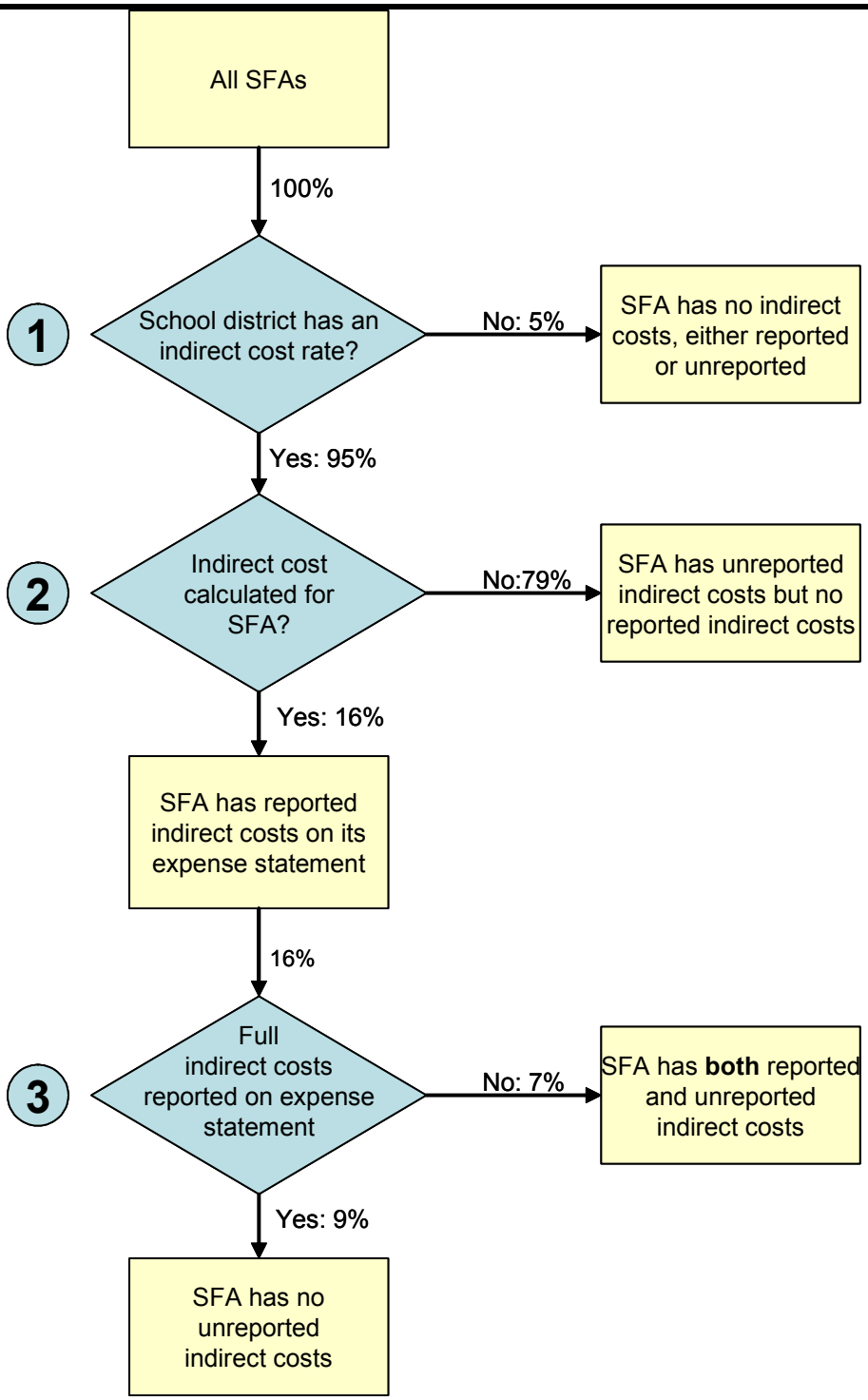
Exhibit 5.1 presents an overview of the reporting of school district indirect costs attributable to school foodservice. While every school district incurs some costs that could be considered as indirect costs for foodservice, actual indirect costs exist only when these costs are tabulated and an indirect cost rate is established for the school district (either by the district or by the State). Otherwise, the potential indirect costs are absorbed by the school district. In such cases these costs are *not included in the category of indirect costs*; they are unreported costs and do not appear on the SFA's expense statement. This distinction is shown as Step 1 in Exhibit 5.1.

If a school district has an indirect cost rate, the SFA may or may not use this rate and ***report indirect costs*** on its financial statement, as shown as Step 2 in Exhibit 5.1. The ***reported indirect cost*** is the amount that appears on the foodservice financial statement as an expense. In cases where the SFA does not report indirect costs, all of the SFA's indirect costs are ***unreported indirect costs***.[66]

[66] In this study, the full indirect cost of foodservice was estimated by multiplying the school district's indirect cost rate by the total foodservice direct costs that appeared on the SFA's SY 2005-06 expense statement. If the SFA had no reported indirect costs, the unreported indirect cost was equal to the full indirect cost.

Exhibit 5.1

Overview of SFA Reporting of Indirect Costs Attributable to School Foodservice



In cases where the SFA reports indirect costs as a foodservice expense, the reported indirect cost may be equal to or less than the full indirect cost (Step 3). The district may choose to absorb some of the indirect costs attributable to foodservice, or the foodservice account may not have sufficient funds for the full cost to be reported. In such cases the SFA has both reported and unreported indirect costs. If all of the indirect costs attributable to foodservice are reported on the SFA's expense statement, then the SFA does not have any unreported indirect costs.[67]

As shown in Exhibit 5.1, 95 percent of all school districts had an indirect cost rate in SY 2005-06.[68] However, only 16 percent of all SFAs reported any of the indirect costs attributable to foodservice. The vast majority of school districts (79 percent) did not report any food service indirect costs. In addition, while 16 percent of school districts reported some foodservice indirect costs, only 9 percent reported the full amount of indirect costs attributable to foodservice. The remaining 7 percent reported some, but not all, of the full amount of indirect costs attributable to foodservice.

Exhibit 5.2 shows a significant difference between high-poverty and low-poverty SFAs in practices for reporting foodservice indirect costs. High-poverty districts more often reported all foodservice indirect costs (23 percent versus 4 percent), while low-poverty districts more often did not calculate foodservice indirect costs (83 percent versus 68 percent). This may be due in part to the fact that high poverty districts receive a greater proportion of their foodservice revenue from USDA and thus may have the resources to cover food service indirect costs (see Chapter Six). There was no significant difference by SFA size in the reporting of foodservice indirect costs.

Among school districts with indirect cost rates, the average SFA reported 15 percent of the indirect costs that were attributable to foodservice (Exhibit 5.3). The vast majority (83 percent) of school districts with indirect cost rates did not calculate indirect costs that were attributable to the SFA and hence these SFAs had no reported indirect costs.[69] Among those SFAs that reported indirect costs (17 percent), the average SFA reported 87 percent of indirect costs attributable to foodservice.[70] Thus, reporting of foodservice indirect costs was almost always complete, whenever a school district calculated these costs. There were no significant differences by SFA poverty status or size class in the percentage of indirect costs reported.

---

[67] Most school districts had two indirect cost rates: a restricted rate and a higher unrestricted rate (see section three of this chapter). If an unrestricted rate was available, this rate was used to compute the full indirect cost for the study. However, some SFAs with an unrestricted rate used a restricted rate to calculate the reported foodservice indirect cost. As a result, these SFAs had unreported indirect costs as well as reported indirect costs.

[68] The percentages in Exhibit 5.1 can be found in Exhibit 5.2 and are based on the full sample of 120 SFAs.

[69] The percentage of school districts with indirect cost rates that not apply this rate to their SFA's direct costs equals the percentage of school districts that did not report indirect costs divided by the percentage of districts with indirect cost rates (.794/.954=.833).

[70] Calculated as the mean percent of indirect costs reported divided by the percent of districts with some indirect costs reported (.146/.167) equals 87.4 percent.

Exhibit 5.2

SFA Practices for Reporting Foodservice Indirect Costs, by Poverty Status and SFA Size Class

	District Has Indirect Cost Rate					District Does Not Have Indirect Cost Rate	SFA Sample Size	
	Calculated SFA Indirect Costs			Did Not Calculate SFA Indirect Costs	Total		Weighted	Unweighted
	Reported All	Reported Some	Total					
Total	8.8%	7.1%	15.9%	79.4%	95.4%	4.6%	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	4.1††	7.2	11.3	83.4	94.8	5.3	9,387	84
60% or more of lunches are free/reduced price	22.7	6.8	29.5	67.7	97.2	2.8	3,180	36
SFA Size								
Small (1-999)	6.6	0.0	6.6	89.4	96.1	3.9	5,238	16
Medium (1,000-4,999)	9.9	11.0	20.9	75.6	96.5	3.5	4,995	37
Large (5,000+)	11.4	14.8	26.2	65.1	91.3	8.7	2,336	67

Note:

††† Statistically significant difference at the 1 percent level between or among SFA types across all response categories (chi-squared test).
†† Statistically significant difference at the 5 percent level between or among SFA types across all response categories (chi-squared test).
† Statistically significant difference at the 10 percent level between or among SFA types across all response categories (chi-squared test).

Comparisons without daggers (†) are not statistically significantly different at the 10 percent level across all response categories.

Exhibit 5.3

Percentage of Indirect Costs Reported by SFAs With Indirect Cost Rates, by Poverty Status and SFA Size Class

	Percent of Indirect Costs Reported by SFAs With Indirect Cost Rates			SFA Sample Size[a]	
	Mean	Median	SE	Weighted	Unweighted
Total	14.6%	0.0%	3.3%	11,985	113
Poverty Status					
Less than 60% of lunches are free/reduced price	10.1	0.0	3.1	8,894	79
60% or more of lunches are free/reduced price	27.8	0.0	7.6	3,091	34
SFA Size					
Small (1-999)	6.9	0.0	0.3	5,031	15
Medium (1,000-4,999)	18.1	0.0	5.5	4,821	35
Large (5,000+)	25.1	0.0	6.5	2,133	63

Notes:

[a] Excludes 7 SFAs without indirect cost rates.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Recovery of SFA Indirect Costs

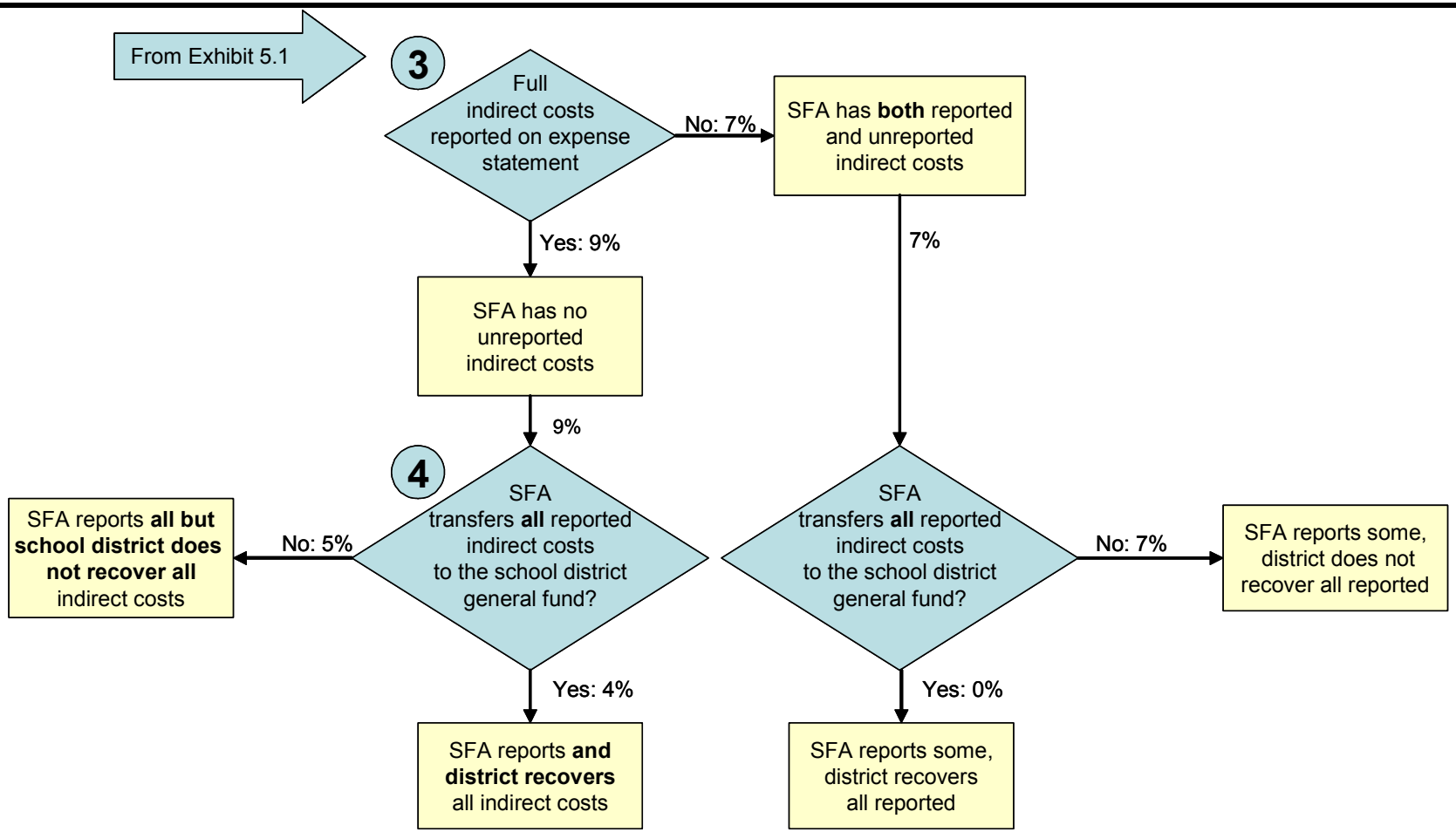
As noted above, SFA reporting of indirect costs is not synonymous with the school district ***recovering indirect costs.*** A school district recovers indirect costs when it actually transfers funds from the foodservice account into the district's general fund (Exhibit 5.4, Step 4).

The actual financial impact of indirect cost allocation on SFAs depends on the extent to which foodservice indirect costs are both reported (Step 3) and recovered (Step 4). Some States require SFAs to report foodservice indirect costs but do not require districts to recover the reported indirect cost. Thus, a school district may compute the foodservice indirect cost for reporting purposes, while the district does not actually transfer the total reported amount from the foodservice account to the school district's general fund. This study considered indirect costs to be "reported" if the school district calculated the cost and entered it as an expense on the SFA's financial statement, regardless of whether the full amount of the reported indirect cost was actually recovered.

School districts can only recover the indirect costs of foodservice to the extent that foodservice revenues exceed the direct costs charged. In principle, SFAs can increase revenues or reduce direct costs so that funds are available for indirect cost recovery, but there are important constraints. SFAs have little control over their revenues from USDA: the NSLP and SBP provide a fixed subsidy per

Exhibit 5.4

Overview of the Recovery of Foodservice Indirect Costs



meal based on the child's eligibility status and the percentage of meals served free or at reduced price. Raising prices for school meals and à la carte items is not popular with parents, and school boards often control or restrict pricing decisions. Cost-cutting options may be constrained by the need to maintain adequate levels of customer satisfaction and participation, and by the fact that employees are also constituents of the school board. For these reasons, school districts may decide as that they will forgo recovery of the indirect costs of school foodservice in order to support or enhance foodservice operations, or they may simply decide that it is not feasible to attempt to recover these costs. Program regulations stipulate that in order to recover foodservice indirect costs, a school district must have an established policy of trying to recover food service indirect costs, and it must use an approved indirect cost rate.[71] Thus, if a school district does not have a policy of recovering indirect costs from the school foodservice account, it may not retroactively decide to recover the costs because the foodservice account develops an excess balance. (See discussion in Chapter 7 on foodservice account balances).[72]

The actual recovery of indirect costs from school foodservice was even less common than the reporting of these costs. As shown in Exhibit 5.4, while 9 percent of SFAs reported all of the indirect costs attributable to foodservice, only 4 percent of school districts recovered all of these costs.[73] In 5 percent of districts, the SFA reported the full indirect costs of school foodservice, but the school district did not recover all of the reported indirect costs.[74] Of the 7 percent of SFAs that reported some, but not all, of the foodservice indirect costs, no districts recovered the amount that was reported. Exhibit 5.5 shows that there were no significant differences in the recovery of indirect costs by poverty status or size class.

Exhibit 5.6 presents the reported reasons school districts did not recover indirect costs from foodservice; in some cases, multiple reasons apply, so the percentages sum to more than 100 percent. Nearly half (48 percent) of the school districts that did not recover all of the foodservice indirect costs indicated that their policy was not to charge indirect costs to any grant or program, including foodservice. The second main reason was that the district chose to bear the cost as a way of subsidizing the SFA (27 percent of SFAs in which districts did not all recover indirect costs); the third was that the SFA had insufficient funds (12 percent).

There were significant differences between low-poverty and high-poverty districts in the proportion reporting different reasons for not recovering foodservice indirect costs. While 61 percent of low-poverty districts indicated that they did not charge or recover indirect costs for any grant or program,

---

[71] A district that has established a policy of recovering foodservice indirect costs could establish an account receivable, payable by the general fund, if the school foodservice account has insufficient revenues in a given year to cover the indirect costs which are chargeable to it based on the school district's established policies.

[72] Program regulations allow SFAs to reduce balances in excess of 3 months operating expenses in the following ways: improve the quality of the meals, reduce meal prices, or improve the quality of the foodservice operations.

[73] The percentages in Exhibit 5.4 are reported in Exhibit 5.5 and based on the full sample of 120 SFAs.

[74] This study asked school districts if they recovered all of the indirect costs attributable to foodservice. The study does not have information regarding the proportion of indirect costs that were recovered by school districts that did not recover all of the indirect costs.

Exhibit 5.5

Recovery of Indirect Costs from Foodservice, by SFA Poverty Status and SFA Size Class

	District Has Indirect Cost Rate						SFA Sample Size	
	Foodservice Reported Indirect Costs							
	SFA Reported and District Recovered All Indirect Costs	SFA Reported All, but District Did Not Recover All Indirect Costs	SFA Reported Some, but District Did Not Recover All Reported Indirect Costs[a]	SFA Did Not Report and District Did Not Recover Indirect Costs	Total	District Does Not Have Indirect Cost Rate	Weighted	Unweighted
Total	4.0%	4.8%	7.1%	79.4%	95.3%	4.6%	12,568	120
Poverty Status								
Less than 60% of lunches are free/reduced price	1.8	2.3	7.2	83.4	94.7	5.3	9,387	84
60% or more of lunches are free/reduced price	10.6	12.1	6.8	67.7	97.0	2.8	3,180	36
SFA Size								
Small (1-999)	0.0	6.6	0.0	89.4	96.1	3.9	5,238	16
Medium (1,000-4,999)	8.6	1.4	11.0	75.6	96.5	3.5	4,995	37
Large (5,000+)	3.4	8.0	14.8	65.1	91.3	8.7	2,336	67

Note:

[a] No district that reported partial indirect costs recovered all reported indirect costs.

††† Statistically significant difference at the 1 percent level between or among SFA types across all response categories (chi-squared test).
†† Statistically significant difference at the 5 percent level between or among SFA types across all response categories (chi-squared test).
† Statistically significant difference at the 10 percent level between or among SFA types across all response categories (chi-squared test).

Comparisons without or daggers (†) are not statistically significantly different at the 10 percent level across all response categories.

Exhibit 5.6

Reported Reasons Districts Did Not Recover Indirect Costs from Foodservice: Districts that Did Not Recover All Indirect Costs from Foodservice, by Poverty Status and SFA Size Class

	Reported Reasons For Not Recovering All Indirect Costs					SFA Sample Size	
	SFA Had Insufficient Funds	District Chose to Bear Cost	Other	Did Not Charge Indirect Costs	Don't Know	Weighted	Unweighted
Total[a]	12.4%	27.2%	5.3%	48.2%	17.5%	11,478	104
Poverty Status							
Less than 60% of lunches are free/reduced price	7.5**	29.4	5.5	61.0***	9.6***	8,723	75
60% or more of lunches are free/reduced price	27.8	20.5	4.8	7.6	42.7	2,754	29
SFA Size							
Small (1-999)	13.4	30.1	5.6	55.1	9.4	5,031	15
Medium (1,000-4,999)	11.1	18.9	2.7	49.5	24.6	4,393	32
Large (5,000+)	12.8	37.9	10.2	28.6	22.2	2,053	57

Notes:

[a] Excludes 7 SFAs without indirect cost rates and 9 SFAs that recovered all indirect costs from foodservice.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all SFA sizes (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all SFA sizes (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all SFA sizes (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all SFA sizes.

only 8 percent of high-poverty districts gave this reason. On the other hand, only 8 percent of low-poverty districts indicated that they did not recover foodservice indirect costs because the SFA had insufficient funds, but 28 percent of high-poverty districts cited this reason. There were no significant differences across SFA size classes in the reasons that school districts did not recover foodservice indirect costs.

Calculation and Recovery of Indirect Costs Attributable to Other Grants and Programs

USDA reimbursements to school districts for the lunch and breakfast programs are based on the number of reimbursable lunches and breakfasts served to children in the free, reduced-price, and paid income eligibility categories rather then the actual costs incurred by SFAs to produce these meals.[75] By contrast, reimbursements for Federal education grants are often cost-based (i.e., school districts are reimbursed, up to the amount of the grant award, for the actual costs incurred by the school district in carrying out the grant). Under cost-based reimbursement, school districts are usually required to document their claims for reimbursement—they must show that the grant has incurred costs equal to or greater than the amount of reimbursement being claimed. Since the total cost of a grant or program is equal to its direct costs plus its indirect costs, a district can draw more revenue from a grant when indirect costs are charged. Thus, a school district may have more of an incentive to calculate and recover indirect costs from other Federal programs than from the school meal programs.

Confirming this expectation, more school districts calculated indirect costs for other grants and programs than did so for foodservice.[76] Exhibit 5.7 shows the distribution of school district practices for the calculation of indirect cost for grants and programs other than USDA school meal programs.

Exhibit 5.7

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

	Percent of Districts with Indirect Cost Methods	Sample Size	
		Weighted	Unweighted
Calculated full indirect costs for all grants	22.8%	2,863	32
Calculated full indirect costs for some, not all grants	24.2	3,043	37
Calculated only alternate indirect costs for all or some grants	0.0	0	0
Did not calculate full indirect costs for any grant	45.2	5,682	34
Don't Know/Did Not Respond	3.1	396	10
Don't have indirect cost rate	4.6	582	7
Total	100.0%	12,568	120

[75] While reimbursement rates are adjusted annually to reflect changes in the food away from home component of the consumer price index, reimbursements are not based on SFA-specific costs.

[76] For this comparison, we treat calculation of indirect costs for other grants and programs as equivalent to reporting of indirect costs for school foodservice. For some grants, the school district may be required to report the amount actually recovered, even if it is less than the calculated indirect cost.

About half of school districts (47 percent) calculated the full indirect costs (i.e., the applicable indirect cost rate times direct costs) for at least some of their other grants and programs. About one quarter of school districts (23 percent) calculated the full indirect costs for all grants, and another quarter (24 percent) calculated these costs for some but not all of their grants. By contrast, only 9 percent of SFAs reported all of the indirect costs attributable to foodservice and another 7 percent reported some of the indirect costs attributable to foodservice (Exhibit 5.1).

School districts also were more likely to recover the calculated indirect costs for grants and programs other than foodservice. Seventy-five percent of school districts recovered all of the indirect costs from all grants and programs for which these costs were calculated (Exhibit 5.8). By contrast, only 44 percent of SFAs that reported all of the indirect costs attributable to foodservice recovered these costs from their SFAs.[77]

The most common reason cited by school districts from not recovering all of the indirect costs calculated for other grants and programs was that the district expected the grant or program funds to be insufficient—i.e., the direct costs of these grants and programs equaled or exceeded the total amount of funds available in the grant or program. This reason was cited by 62 percent of districts in this relatively small group (Exhibit 5.9). Other reasons cited include: the district chose not to recover indirect costs for any grant (19 percent); and indirect costs were not in the grant budgets (34 percent). These reasons are related, because they indicate that districts intended to use grant funds for direct costs, rather than for district overhead. This evidence of a trade-off implies that these districts had a fixed amount of grant funds available, rather than having the ability to draw more grant revenue by charging indirect as well as direct costs.

Exhibit 5.8

Reported Practices for Recovering Indirect Costs for Other Grants and Programs: Districts with Full Indirect Costs Calculated

	Percent of Districts	Sample Size	
		Weighted	Unweighted
Calculated and recovered full indirect costs for all grants	42.3%	2,497	28
Recovered full indirect costs for grants if calculated	32.7	1,934	21
Recovered part, not all of full indirect costs calculated	9.8	580	6
Recovered none of full indirect costs calculated	7.8	460	5
Unknown amount recovered from full indirect costs calculated	7.4	437	9
Total[a]	100.0%	5,907	69

Note:

[a] Excludes 7 districts without indirect cost rates and 44 districts with that do not calculate full indirect costs.

[77] Calculated from Exhibit 5.4. Of the 9 percent of SFAs that reported all of the indirect costs attributable to their operations, 44 percent (or 4 percent of all school districts) recovered these costs.

Exhibit 5.9

Reported Reasons for Not Recovering Full Indirect Costs for Other Grants and Programs

	Percent of Districts	Sample Size	
		Weighted	Unweighted
District chose not to recover for any grant	19.3%	285	4
Indirect cost not recovered if not in grant budget	34.4	508	4
Full indirect cost not recovered if insufficient funds expected	62.2	918	8
Other	11.8	174	4
Don't know/did not respond	8.0	118	4
Total[a]		1,476	20

[a] Excludes 7 districts without indirect cost rates, 44 districts that did not calculate indirect costs for grants and programs other than food service, and 49 districts that recovered full indirect costs for grants if calculated. Detail sums to more than total because multiple responses were given by SFAs.

Setting Indirect Cost Rates

While the concept of indirect costs appears to be rather straightforward, in actual practice the rules and the process for determining the magnitude of indirect costs (i.e., the size of the indirect cost pool) and the procedures for allocating indirect costs can be quite complicated, especially when dealing with grants or programs receiving Federal funds. This section describes the rules governing the allocation of school districts' indirect costs and the practices used to set indirect cost rates for school districts. This section is intended for readers with particular interest in this aspect of school foodservice expenses. *An understanding of the detail provided in this section is not necessary for readers who are simply interested in the estimates of the reported and full costs of producing reimbursable meals and how these costs have changed since SY 1992-93 when the last study of school meal costs was conducted.*

Rules Governing the Allocation of Indirect Costs to Federal Grants and Programs

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. State Education Agencies (SEAs) 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.

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 costs 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 may 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 general Federal cost principles (OMB Circular A-87). For example, depreciation is an allowable expense, but it may not include the cost of land; interest costs are allowable only under specified circumstances. USDA regulations (7 CFR 210.14) require prior approval for the use of foodservice revenues (directly or through indirect cost allocation) for the purchase of land or buildings, or for building construction.

Among the 43 States in the study, 31 defined and calculated indirect cost percentages at the State level for the school districts in their States. This process was usually part of the general financial reporting system for school districts. The State Education Agency (SEA) set the overall accounting framework for the school districts (including funds, programs or objectives, and revenue and expenditure categories); this framework included the definition of indirect and direct cost pools. Before the start of each school district fiscal year, the SEA used an earlier fiscal year's costs to calculate each school district's indirect cost rate. In a variation on this approach, as used in 11 other States, the school district requested a rate and followed a State-approved formula or worksheet. One State in the study did not have a process for setting or approving indirect cost rates.

School District Practices for Calculating Indirect Costs

This section describes school district practices with regard to 1) the type(s) of indirect cost rates used; 2) function or activities included in indirect cost rates; and 3) adjusting indirect costs to reflect differences in costs between the base year (which is used to set indirect cost rates) and the current school year.

Types of Indirect Cost Rates

As discussed above, nearly all school districts (95 percent) had percentage rates that could be used to allocate indirect costs. Exhibit 5.10 shows that the great majority of school districts (80 percent) had both restricted and unrestricted rates, while 16 percent had only restricted rates, as a result of State policies. Only 5 percent of districts did not have indirect cost rates or other indirect cost allocation methods.

Exhibit 5.10

Indirect Cost Allocation Methods: Distribution of School Districts

	Percent of Districts with Indirect Costs	Sample Size	
		Weighted	Unweighted
Percentage Rate	95.4%	11,985	113
Restricted Only	15.7	1,973	17
Restricted and Unrestricted	79.7	10,013	96
No Indirect Cost Method	4.6	582	7
Total, All SFAs	100.0%	12,568	120

Support Functions Included in Indirect Costs

As shown in Exhibit 5.11, over 90 percent of indirect cost rates used by school districts (both restricted and unrestricted) included three types of administrative functions: accounting and finance, data processing, and personnel and human resources. Beyond these three types of administrative functions, however, unrestricted indirect cost rates are substantially more inclusive than restricted rates. For example, 93 percent of school districts' unrestricted indirect costs also included purchasing, compared to 79 percent of restricted rates; 95 percent of unrestricted rates included custodial and janitorial services compared to only 30 percent of restricted rates; and 91 percent of unrestricted rates included and building operations and maintenance compared to only 42 percent of restricted rates.

Adjusting Indirect Cost Rates

Indirect cost rates are set prospectively using school districts' data on direct and indirect costs from a preceding year (called the base year). Since direct and indirect costs for the current school year may differ from those of the base year, indirect costs allocated to school districts' grants and programs may need to be adjusted to reflect changes in indirect or direct costs between the base year and the current school year. Two options are available for adjusting indirect costs: (1) the use of provisional and final rates; and (2) 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 calculated, and a credit or debit is made to adjust for the

Exhibit 5.11

Support Functions Included in Indirect Cost Rates, as Reported by State Education Agency

Support Function	Percent of Districts with Functions Which Are Included in Indirect Cost Rate(s)	
	State Has Only Restricted Rates	State Has Unrestricted Rates
Accounting, budget, finance and payroll	100.0%	100.0%
Data processing operations and programming	100.0	99.2
Administration of personnel, benefits and human resources	100.0	94.2
Purchasing and contracting	79.1	93.2
General administration and policy	48.4	67.3
Custodial and janitorial	30.4	94.8
Building operations and maintenance	41.8	91.0
Equipment and vehicle operations and maintenance	40.8	58.9
Refuse disposal, pest control, other sanitation	37.1	78.9
Security	37.1	71.9
Storage and transportation of goods	56.8	63.4
Providing and maintaining uniforms	29.4	54.0
Sample Size[a]		
Weighted	2,682	9,755
Unweighted	25	93

Note:

[a] Excludes 2 districts in a State without indirect cost rates.

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.[78]

Over two-thirds (70 percent) of school districts with indirect cost rates used a fixed rate with a carry-forward adjustment (Exhibit 5.12). The remainder did not make any adjustment for changes in indirect cost between the base year and the year to which the rate is applied (29 percent) or did not know if their rates were adjusted (1 percent).

Exhibit 5.12

Reported Methods Used to Adjust Indirect Cost Rates: Distribution of School Districts with Indirect Cost Rates

Adjustment Procedure	Percent of Districts with Indirect Costs	Sample Size	
		Weighted	Unweighted
No adjustment	29.5	3,537	24
Provisional rate with final rate	0.0	0	0
Fixed rate with carry forward	69.6	8,344	87
Other adjustment	0.0	0	0
Don't know	0.9	104	2
All districts with indirect cost rates[a]	100.0%	11,985	113

Note:

[a] Excludes 7 districts without indirect cost rates.

[78] Some States avoided the possibility of overcharging indirect costs by using a discount percentage in the computation of indirect cost rates (i.e., the rate was calculated based on the base year's costs, then the rate was reduced by a specified percentage). In other States, the average indirect cost rate for several years was used in the rate computation, to minimize the impact of fluctuations in indirect costs.

Chapter Six

Composition of SFA Revenues

SFAs receive revenues from several sources. Revenues come from reimbursable meals; these include Federal reimbursements, State and local reimbursements, and student payments for reduced-price and full-price meals. Revenues also come from the sale of nonreimbursable meals (including à la carte sales and sales to adults, catering, etc.),[79] and from sources other than serving meals (such as interest on deposits).

This chapter presents an analysis of SFAs' revenues for SY 2005-06.[80] Key findings shown in Exhibit 6.1 with regard to SFA revenues include:

- Revenues related to the sale of reimbursable meals, from subsidies, student payments, and other sources, accounted for an average of 84 percent of total SFA revenues.

Exhibit 6.1

Composition of SFA Revenues

Source of Revenues	Percent of SFA Revenues			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
USDA Subsidies	50.6%	52.0%	2.1%	12,504	118
Meal Reimbursements	45.4	45.5	1.8	12,504	118
Donated Commodities[b]	5.2	4.9	0.4	12,568	120
Student Payments for Reimbursable Meals[c]	24.2	25.6	1.5	10,120	98
à la Carte and Other Nonreimbursable Sales[c]	15.8	13.6	2.0	9,401	93
Local Government Funds[d]	6.4	0.0	2.0	12,568	120
State Reimbursements	2.4	1.3	0.3	12,483	118
Other Cash Revenues[e]	0.6	0.1	0.1	11,891	115

Notes:

[a] Excludes SFAs that did not provide breakouts of specified sources of revenues.

[b] It is conventional accounting practice to include donated commodities as revenues. Donated commodities were based on estimated value used, regardless of how they were reported on SFA financial statement.

[c] The combination of student payments for reimbursable meals and à la carte/other nonreimbursable meals represented 40.2 percent of total revenues in SFAs that separately reported all of the categories of revenues (unweighted n=92). This percentage was identical for the entire group of SFAs that reported separate revenues for the other categories (unweighted n=118). Thus, the estimated percentages of revenues for student payments and à la carte/other nonreimbursable meals as shown are the best estimates for all SFAs.

[d] Local government funds include explicit subsidies and transfers of funds to offset foodservice deficit.

[e] Other cash revenues include: interest on deposits, sale of equipment, compensation for loss, sales tax receipts, and revenue not specified elsewhere.

[79] In the analysis presented in this report, revenues from all nonreimbursable food sales have been combined into a single category—à la carte and other nonreimbursable food sales.

[80] SFA revenues are compared with costs in Chapter Seven, which also discusses the management of foodservice cash and end-of-year cash balances.

- USDA subsidies, including cash reimbursements and donated commodities, represented the largest single source of SFA revenues, accounting for an average of 51 percent of total SFA revenues.
- Student payments for reimbursable meals represented 24 percent of total SFA revenues, while à la carte and other nonreimbursable food sales accounted for 16 percent.

USDA Subsidies

USDA subsidies represented the majority—51 percent—of total SFA revenues in SY 2005-06. High-poverty SFAs received 68 percent of their revenue from USDA, while low-poverty SFAs received 45 percent (Exhibit 6.2). The high-poverty SFAs received a higher share of their total revenue from USDA subsidies because they had a greater proportion of meals provided free or at reduced price. Medium-size SFAs tended to have a higher percentage of total revenues from USDA subsidies than either small or large SFAs, though the observed differences are not statistically significant. The mean percent of SFA revenues derived from USDA subsidies was 55 percent for medium SFAs, compared to 47 percent in small and 49 percent in large SFAs.

Cash subsidies represented by far the larger portion of USDA subsidies. Meal reimbursements accounted for an average of 45 percent of total SFA revenues, compared to an average of 5 percent for donated commodities (Exhibit 6.3).[81] For the average high-poverty SFA, 63 percent of revenues were from USDA reimbursements; this average was 39 percent for the average low-poverty SFA. Both types of SFAs averaged about 5 percent of revenues from USDA commodities. Thus, it is the difference in meal reimbursements, not commodities, that explains the overall difference in the share of revenues from USDA subsidies between high- and low-poverty SFAs. This is to be expected, since the commodity reimbursement is the same for all meals, while high-poverty SFAs receive a higher average per-meal level of cash reimbursement because of the higher percentage of meals served free or reduced price.

Medium-size SFAs derived somewhat more of their total revenues from USDA cash subsidies (49 percent) than did small (43 percent) and large SFAs (45 percent), though these differences are not statistically significant. A greater proportion of medium-size SFAs are high-poverty compared with large and small SFAs.[82] Thus, differences in poverty rates may account for the differences by SFA size in the share of revenues from USDA subsidies.

[81] The distribution of SFAs by the percent of total revenue derived from USDA meal reimbursements and donated commodities is presented in Appendix D, Exhibits D.48 and D.49.

[82] See Appendix D, Exhibit D.1.

Exhibit 6.2

USDA Subsidies as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	Total USDA Subsidies			Meal Reimbursements			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	50.6%	52.0%	2.1%	45.4%	45.5%	1.8%	12,504	118
Poverty Status								
Less than 60% of lunches are free/ reduced price	44.6***	46.1	2.4	39.3***	38.1	2.1	9,324	82
60% or more of lunches are free/ reduced price	68.2	69.9	2.4	63.3	64.0	2.2	3,180	36
SFA Size								
Small (1-999)	47.2	47.0	3.4	42.6	43.6	2.9	5,238	16
Medium (1,000-4,999)	54.7	54.8	1.9	48.8	50.1	2.0	4,933	36
Large (5,000+)	49.5	47.7	2.9	44.5	42.8	2.8	2,334	66

Notes:

[a] Excludes 2 SFAs that did not report USDA subsidies separately.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 6.3

USDA Donated Commodities as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	Donated Commodities			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	5.2%	4.9%	0.4%	12,568	120
Poverty Status					
Less than 60% of lunches are free/ educed price	5.3	4.9	0.6	9,388	84
60% or more of lunches are free/ educed price	4.9	5.2	0.2	3,180	36
SFA Size					
Small (1-999)	4.7	3.8	0.8	5,238	16
Medium (1,000-4,999)	5.9	5.5	0.3	4,995	37
Large (5,000+)	5.0	5.0	0.3	2,336	67

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

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 24 percent of total SFA revenues.[83] Exhibit 6.4 shows that high-poverty SFAs on average derived 11 percent of their total revenues from student payments for reimbursable meals, while low-poverty SFAs derived more than twice as much (29 percent). This is the other side of the relationship of USDA reimbursements to SFA poverty level. High-poverty SFAs received less revenue per meal in student payments because they served more free and reduced-price meals.

[83] Excludes SFAs that did not separately report student payments for reimbursable meals from à la carte sales. See notes to Exhibit 6.1. The distribution of SFAs by the percent of revenue derived from student payments for reimbursable meals is presented in Appendix D, Exhibit D.50.

Exhibit 6.4

Student Payments for Reimbursable Meals as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	Student Payments for Reimbursable Meals			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	24.2%	25.6%	1.5%	10,120	98
Poverty Status					
Less than 60% of lunches are free/reduced price	28.9***	28.9	1.7	7,455	69
60% or more of lunches are free/reduced price	11.2	11.5	1.0	2,665	29
SFA Size					
Small (1-999)	28.0	28.9	2.6	3,959	12
Medium (1,000-4,999)	21.8	23.0	1.5	4,299	32
Large (5,000+)	21.6	20.1	2.3	1,861	54

Notes:

[a] Excludes 22 SFAs that reported student payments for reimbursable meals and other revenue categories together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

State and Local Funds

State and local funds were relatively minor sources of SFA revenue. On average, State funds were 2 percent of total SFA revenues in SY 2005-06, while local funds were 6 percent (Exhibits 6.5 and 6.6). States are required to provide matching funds to SFAs, typically based on a prior year's count of NSLP lunches (7CFR210.17). In addition, some States provided reimbursements for NSLP lunches, SBP breakfasts, or NSLP snacks. The percentage of revenues from State funds was consistently small; only 6 percent of SFAs had 8 percent of revenues or more from State funds (Appendix D, Exhibit D.51). High-poverty SFAs had a smaller percentage of revenues from State reimbursements than low-poverty SFAs (1 percent versus 3 percent). There was no real difference by SFA size in the percentage of revenues from State reimbursements.

Local funds usually are not tied to specific types of meals; these funds fill the gap between other revenues and expenses. In some SFAs, local funds were used to cover the revenue lost when breakfast or lunch was free to all students. There is more variation in the percentage of revenues from local funds than from State funds: 25 percent of SFAs had 8 percent of revenues or more from local

Exhibit 6.5

State Funds as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	State Reimbursements			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	2.4%	1.3%	0.3%	12,483	118
Poverty Status					
Less than 60% of lunches are free/ reduced price	2.7**	1.4	0.4	9,361	83
60% or more of lunches are free/ reduced price	1.4	0.8	0.2	3,122	35
SFA Size					
Small (1-999)	2.0	1.0	0.4	6,238	16
Medium (1,000-4,999)	2.3	1.7	0.2	4,995	37
Large (5,000+)	3.3	1.7	0.6	2,251	67

Notes:

[a] Excludes 2 SFAs that reported State funds in other revenue categories.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 6.6

Local Funds as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	Local Funds			SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	6.4%	0.0%	2.0%	12,568	120
Poverty Status					
Less than 60% of lunches are free/ reduced price	6.7	0.0	2.5	9,388	84
60% or more of lunches are free/ reduced price	5.4	0.0	2.7	3,180	36
SFA Size					
Small (1-999)	10.4	0.0	4.0	5,238	16
Medium (1,000-4,999)	3.1	0.0	1.0	4,995	37
Large (5,000+)	4.3	0.0	1.8	2,336	67

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

funds (Appendix D, Exhibit D.52). There were no significant differences in the percentage of revenues from local funds between high- and low-poverty SFAs or among SFA size classes.

Nonreimbursable Sales and Other Revenues

Nonreimbursable food sales—including à la carte items, adult meals, vending machines, and catering—represented an average of 16 percent of total SFA revenues (Exhibit 6.7)[84] Observed differences by poverty status and size class were not statistically significant.

Revenues other than food sales and government subsidies were less than 1 percent of total SFA revenues in the average SFA (Exhibit 6.8). These "other miscellaneous" revenues include interest on deposits, sales of used equipment, sales tax receipts, and other sources not directly derived from serving food.

The vast majority of SFAs (79 percent) had less than one percent of revenues from this source, and only 2 percent of SFAs had 3 percent or more (Appendix D, Exhibit D.54). Chapter Seven provides further information on interest on deposits of foodservice funds.

Exhibit 6.7

à la Carte and Other Nonreimbursable Sales as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	à la Carte/Other Nonreimbursable Sales			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	15.8%	13.6%	2.0%	9,401	93
Poverty Status					
Less than 60% of lunches are free/ reduced price	16.9	13.1	2.4	7,157	66
60% or more of lunches are free/ reduced price	12.3	13.6	0.8	2,244	27
SFA Size					
Small (1-999)	11.6	7.1	3.4	3,596	11
Medium (1,000-4,999)	17.8	13.6	2.1	4,073	30
Large (5,000+)	19.6	22.4	1.8	1,732	52

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

[84] The distribution of SFAs by the percent of revenue derived from nonreimbursable sales is presented in Appendix D, Exhibit D.53.

Exhibit 6.8

Other Cash Revenues as a Percentage of Total SFA Revenues, by SFA Poverty Status and Size Class

	Other Revenues			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	0.6%	0.1%	0.1%	11,891	115
Poverty Status					
Less than 60% of lunches are free/ reduced price	0.5	0.1	0.1	9,155	81
60% or more of lunches are free/ reduced price	0.7	0.4	0.2	2,777	34
SFA Size					
Small (1-999)	0.4	0.1	0.1	4,874	15
Medium (1,000-4,999)	0.6	0.2	0.1	4,768	35
Large (5,000+)	1.0	0.4	0.3	2,249	65

Notes:

[a] Excludes 5 SFAs that reported other (non-reimbursable) cash revenues together with à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Management of Foodservice Cash

Interest on deposits is a source of revenue for SFAs. The amount of interest depends on the SFA's cash flow and how the cash is managed. Revenues may lag expenses, because food must be purchased in advance, while reimbursement claims are paid some time after meals are served. On the other hand, when students purchase meal tickets or fund payment accounts in advance, SFAs can accumulate cash revenues for meals before they are served.

Respondents in over 60 percent of SFAs reported that one-half or more of full-price lunches were prepaid, either by the purchase of meal tickets or by deposits to payment accounts. All full-price lunches were prepaid in 20 percent of SFAs, and between 50 and 100 percent were prepaid in 42 percent of SFAs (Exhibit 6.9). Only 8 percent of SFAs had no prepaid lunches. Thus, prepayment for full-price lunches contributes to cash on hand in most SFAs and provided an opportunity to earn interest.

Excess cash can be deposited in an interest-bearing account to produce revenue. Whether this revenue accrues to the school foodservice account depends on where and when it is deposited. The SFA may have an interest-bearing account, or only a non-interest-bearing account. If the cash is deposited in a general school district account, the interest will not automatically accrue to the SFA, but the school district is required to credit the SFA for the interest. The more frequently such deposits occur, the more of the potential interest will be earned by the general school district account.

Exhibit 6.9

Percentage of Full-Price Student Lunches Prepaid

	Percent of SFAs	SFA Sample Size	
		Weighted	Unweighted
All full-price lunches prepaid	20.0%	2,516	12
More than half of full-price lunches prepaid	42.3	5,312	52
Less than half of full-price lunches prepaid	26.1	3,283	42
No full price lunches prepaid	8.3	1,047	9
Refused/Don't know/Missing	3.3	410	5
Total	100.0%	12,568	120

In most SFAs (62 percent), the director reported that foodservice cash was not transferred to a non-foodservice account (Exhibit 6.10). Where such transfers occurred, the most common rate of transfers was monthly (9 percent). There was a wide range among SFAs in the rate of transfers, from daily (4 percent) to once per year (6 percent).

In about two-thirds (65 percent) of SFAs where foodservice cash was transferred to a non-foodservice account, it earned interest (Exhibit 6.11). When interest was earned, only about two-thirds of districts (66 percent) complied with the requirement to credit the interest to the foodservice account. Anecdotal information suggests two reasons why interest earned was not credited to the SFA: one, the amount was small and not worth the effort to track and credit. Two, the district loaned money to the SFA at the beginning of the year to cover expenses before revenue flowed in, so the interest on later deposits of foodservice cash offset the cost of funds for the loan.

Exhibit 6.10

Distribution of SFAs by How Often Cash Was Transferred from Foodservice to Non-Foodservice Account

	Percent of SFAs	SFA Sample Size	
		Weighted	Unweighted
Daily or more often	4.1%	517	10
Two to four times per week	0.0	0	0
Weekly	1.8	224	4
Two to three times per month	3.5	434	6
Monthly	8.5	1,071	15
Bimonthly or quarterly	2.6	325	5
Two to three times per year	1.8	224	3
Once per year	5.7	716	10
No cash transfer from foodservice account to non-foodservice account	62.3	7,826	60
Don't Know/Refused	9.8	1,230	7
Total	100.0%	12,568	120

Exhibit 6.11

Interest on Cash in Non-Foodservice Account

	Percent of SFAs	SFA Sample Size[a]	
		Weighted	Unweighted
Cash in non-foodservice account earned interest			
Yes	64.5%	2,263	34
No	34.3	1,204	18
Don't know/refused	1.3	44	1
If interest earned:			
All credited to foodservice	65.6%	1,485	26
Some, not all credited to foodservice	0.0	0	0
None credited to foodservice	34.4	779	8
Don't know/refused	0.0	0	0

Note:

[a] Exhibit includes the 53 SFAs in which cash was ever transferred from foodservice to non-foodservice account.

Chapter Seven

Comparison of SFA Revenues and Costs

SFAs are required to operate the school foodservice on a nonprofit basis. Program regulations define a nonprofit foodservice as one operated primarily for the benefit of enrolled children, all revenue from which is used solely to operate or improve the foodservice. An SFA must limit the net cash resources of its nonprofit foodservice to three months' average expenditures. Usually SFAs operate at the break-even level, i.e., costs equal revenues from all sources. Nonprofit status is determined by the financial status of the school foodservice ***as a whole*** rather than the financial status of each Federal program separately. SFAs must accrue all revenues from the school foodservice to a nonprofit foodservice account, including Federal lunch, breakfast, and snack payments; all funds from this account must be used to support the nonprofit school foodservice, which can include other parts of their foodservice operations such as à la carte and adult food sales. SFAs are not required to maintain separate cost and revenue records for the NSLP, SBP, or other programs within the nonprofit school foodservice account (7CFR210.14).

In general, school districts expect SFAs to operate on a break-even basis for reported costs, with SFA revenues covering their reported costs. Exhibit 7.1 shows that SFAs typically operated at the break-even level.[85] To the extent that revenues received from serving reimbursable meals exceeded the cost of producing those meals, SFAs may be viewed as cross-subsidizing nonreimbursable meals.[86] Similarly, if revenues from reimbursable meals fell short of their costs, the SFA may be viewed as subsidizing the cost of reimbursable meals. This chapter compares SFA revenues to reported costs in SY 2005-06. It also looks at cash balances carried by SFAs.

The research questions addressed in this chapter include the following:

- What is the difference between both the reported cost and the full cost of producing reimbursable meals and the revenues derived from the sale of those meals?
- What is the difference between the reported and full costs of nonreimbursable meals (e.g. à la carte sales, sales to adults) and the revenue resulting from those meals?
- What cash balances do SFAs maintain at the end of the year?

[85] The revenue to cost ratio ranged from minimum of 81 percent to a maximum of 120 percent. Appendix D, Exhibit D.55 presents the distribution of SFAs by the revenue to cost ratio.

[86] As discussed previously, costs attributable to all types of nonreimbursable meals were combined into a single category. Similarly, all sources of revenue from nonreimbursable meals were combined into a single category. It is therefore not possible to compare costs and revenues separately for each type of nonreimbursable meal.

Exhibit 7.1

Total SFA Revenues as a Percentage of Total Reported Cost by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	100.8%	101.5%	1.1%	12,568	120
Poverty Status					
Less than 60% of lunches are free/ reduced price	101.0	100.9	1.3	9,388	84
60% or more of lunches are free/reduced price	100.2	103.1	1.8	3,180	36
SFA Size					
Small (1-999)	99.9	99.6	2.5	5,238	16
Medium (1,000-4,999)	101.3	102.6	0.9	4,995	37
Large (5,000+)	102.0	102.3	0.7	2,336	67

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Key findings include:

- Revenues obtained from reimbursable lunches exceeded the reported cost of producing these meals.
- Revenues obtained from reimbursable breakfasts were less than the reported cost of producing those meals.
- Total revenues obtained from reimbursable lunches and reimbursable breakfasts exceeded the reported cost of producing both types of reimbursable meals.
- SFAs appear to subsidize reimbursable breakfasts and nonreimbursable meals with surplus revenues derived from reimbursable lunches.
- While SFAs were operating at a break-even level for reported costs, total revenues fell considerably short of covering their full costs.
- On average, SFAs had end-of-year cash balances of about one and one-half month's expenses.

Total Revenues from Reimbursable Meals Compared With Reported Reimbursable Meal Costs

Exhibit 7.2 compares the revenues obtained from serving reimbursable meals (lunches and breakfasts combined) to the total reported cost of producing those meals.[87] For the average SFA, revenues from reimbursable meals exceeded the reported cost of producing those meals. The mean revenue to cost ratio for reimbursable meals was 115 percent in SY 2005-06.

Reimbursable Breakfasts

Exhibit 7.3 compares the revenues obtained from serving reimbursable breakfasts to the total reported cost of producing those meals. On average, across all SFAs, revenues from reimbursable breakfasts were less than the reported cost of producing the breakfasts. The average revenue to cost ratio for reimbursable breakfasts was 96 percent. In this sample, there was a sharp difference between high-poverty and low-poverty SFAs, though the observed differences are not statistically significant.[88] While the average ratio for high-poverty SFAs was 109 percent, the ratio for low-poverty SFAs was only 90 percent. The regular free reimbursement rate was only 86 percent of the average cost of producing reimbursable breakfasts in high-poverty SFAs compared to 112 percent of the average cost of producing reimbursable breakfasts in low-poverty SFAs (Exhibit 7.4). Across all SFAs, the applicable free breakfast reimbursement rate was sufficient to cover costs for only 36 percent of SFAs (Exhibit 7.5).[89] The free reimbursement rate was much less likely to cover costs in small SFAs than larger ones.

Reimbursable Lunches

A very different picture emerges for reimbursable lunches. Exhibit 7.6 compares the revenues obtained from serving reimbursable lunches to the total reported cost of producing those meals. On average, across all SFAs, revenues from reimbursable lunches exceeded the cost of producing these lunches. The average revenue to cost ratio for reimbursable lunches was 116 percent. And, unlike reimbursable breakfast reimbursements, the average revenue to cost ratio exceeded 100 percent for all

---

87 This analysis includes only those SFAs that separately report student payments for reimbursable meals from à la carte sales. The distribution of SFAs by the revenue to cost ratio for reimbursable meals is presented in Appendix D, Exhibit D.56.

88 As noted in Chapter Three, severe need status is determined on a school-by-school basis rather than at the SFA level. Due to data limitations, this study treated an SFA as a single school. An SFA was considered to be eligible for the severe need reimbursement rate if 40 percent or more of reimbursable lunches were claimed at the free and reduced-price rates.

89 As noted above, this study determined severe need status at the SFA level rather than on a school-by-school basis as specified in the regulations. This study therefore assumed that all breakfasts in severe need SFAs were reimbursed at the higher severe need rate. In fact, only those breakfasts served in severe need schools are reimbursed at this higher rate. However, the estimate that in 36 percent of SFAs the reported cost of producing a reimbursable breakfast was below the applicable reimbursement rate seems reasonable since the reported cost of producing a reimbursable breakfast was below the regular free reimbursement rate in 30 percent of ***all*** SFAs and was below the severe need reimbursement rate in 43 percent of ***all*** SFAs (Appendix F, Exhibit F.2.).

Exhibit 7.2

Total SFA Revenues from Reimbursable Meals as a Percentage of Total Reported Cost of Producing Reimbursable Meals by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	114.8%	109.3%	4.0%	10,037	97
Poverty Status					
Less than 60% of lunches are free/ reduced price	111.9	107.0	4.3	7,430	69
60% or more of lunches are free/reduced price	123.0	110.5	5.6	2,607	28
SFA Size					
Small (1-999)	116.9	118.2	6.4	3,959	12
Medium (1,000-4,999)	111.1	109.8	4.0	4,299	32
Large (5,000+)	118.8	109.3	8.6	1,778	53

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.3

Total SFA Revenues from SBP Breakfasts as a Percentage of Total Reported Costs of Producing SBP Breakfasts by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	96.1%	93.2%	6.1%	7,576	80
Poverty Status					
Less than 60% of lunches are free/reduced price	89.5	84.0	8.0	5,060	54
60% or more of lunches are free/reduced price	109.4	107.8	6.5	2,516	26
SFA Size					
Small (1-999)	87.1	75.5	10.4	2,447	8
Medium (1,000-4,999)	102.0	105.4	5.7	3,583	26
Large (5,000+)	96.9	86.0	8.3	1,547	46

Notes:

[a] Excludes 40 SFAs that reported breakfast revenues and other revenues together or did not have a breakfast program.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.4

Free Breakfast Reimbursement Rate as a Percentage of the Mean Reported Costs per SBP Breakfast [a] by SFA Poverty Status and Size Class

	Reimbursement as a Percentage of Cost			SFA Sample Size[b]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	93.1%	87.2%	4.9%	11,783	116
Poverty Status					
Less than 60% of lunches are free/ reduced price	86.3**	83.6	5.8	8,603	80
60% or more of lunches are free/ reduced price	111.5	96.5	9.7	3,180	36
SFA Size					
Small (1-999)	78.5†††	83.5	7.4	4,743	14
Medium (1,000-4,999)	109.7	119.0	5.2	4,704	35
Large (5,000+)	89.3	78.6	6.3	2,336	67

Notes:

[a] Regular SBP rate used for SFAs with less than 40 percent of the lunches served in the second preceeding school year were claimed at the free or reduced-price rate; severe need rate used for other SFAs.

[b] Excludes the 4 SFAs without breakfast programs.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.5

Percentage of SFAs with Reported Cost per SBP Breakfast Less than the Applicable Free Reimbursement Rate[a] by SFA Poverty Status and Size Class

	Percentage			SFA Sample Size[b]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	35.7%	0.0%	5.4%	11,783	116
Poverty Status					
Less than 60% of lunches are free/reduced price	30.9	0.0	6.0	8,603	80
60% or more of lunches are free/reduced price	48.9	0.0	12.0	3,180	36
SFA Size					
Small (1-999)	16.1††	0.0	9.6	4,743	14
Medium (1,000-4,999)	58.1	1.0	8.1	4,704	35
Large (5,000+)	30.4	0.0	4.8	2,336	67

Notes:

[a] Regular SBP rate used for SFAs with less than 40 percent of the lunches served in the second preceeding school year were claimed at the free or reduced-price rate; severe need rate used for other SFAs.

[b] Excludes the 4 SFAs without breakfast programs.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.6

Total SFA Revenues from NSLP Lunches as a Percentage of Total Reported Costs of Producing NSLP Lunches by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	115.5%	113.5%	4.1%	8,193	83
Poverty Status					
Less than 60% of lunches are free/reduced price	111.2	111.5	3.8	5,677	57
60% or more of lunches are free/reduced price	125.2	116.5	6.0	2,516	26
SFA Size					
Small (1-999)	114.3	122.6	4.2	2,773	9
Medium (1,000-4,999)	113.3	113.5	3.8	3,873	28
Large (5,000+)	123.2	110.9	10.3	1,547	46

Note:

[a] Excludes 37 SFAs that reported lunch revenues and other revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

types of SFAs. Similarly, the free reimbursement rate for lunches exceeded the average cost of producing these meals for all types of SFAs (Exhibit 7.7). And, whereas the applicable breakfast reimbursement rate was sufficient to cover costs in only 36 percent of SFAs, the free lunch rate was sufficient to cover costs in 78 percent of SFAs (Exhibit 7.8).

Total Revenues from Nonreimbursable Meals Compared With Reported Nonreimbursable Meal Costs

Exhibit 7.9 compares the revenues from nonreimbursable meals (including à la carte sales, adult meals and other nonreimbursable meals) to the total reported cost of producing these meals.[90] On average, revenues from nonreimbursable meal sales fell short of the reported cost of nonreimbursable meal costs. The mean revenue to cost ratio for nonreimbursable meals was 71 percent in SY 2005-06. Since, overall SFAs were 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 nonreimbursable meals.

[90] This analysis includes only those SFAs that separately report student payments for reimbursable meals from à la carte sales. The distribution of SFAs by the revenue to cost ratio for nonreimbursable meals is presented in Appendix D, Exhibit D.57.

Exhibit 7.7

Free Lunch Reimbursement Rate as a Percentage of the Mean Reported Cost per NSLP Lunch[a] by SFA Poverty Status and Size Class

	Reimbursement as a Percentage of Cost			SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	113.5%	112.1%	3.4%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	112.8	112.1	3.1	9,388	84
60% or more of lunches are free/reduced price	115.5	110.1	7.8	3,180	36
SFA Size					
Small (1-999)	108.4	112.1	2.6	5,238	16
Medium (1,000-4,999)	118.0	113.4	4.2	4,995	37
Large (5,000+)	115.0	106.9	6.1	2,336	67

Notes:

[a] Regular NSLP rate used for SFAs with less than 60 percent of lunches served free or at reduced price in SY 2003-04; high need rate used for other SFAs.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.8

Percentage of SFAs with Reported Costs per NSLP Lunch less than the Applicable Free Reimbursement Rate[a] by SFA Poverty Status and Size Class

	Percentage			SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	78.1%	100.0%	4.9%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	78.4	100.0	5.4	9,388	84
60% or more of lunches are free/reduced price	77.3	100.0	9.5	3,180	36
SFA Size					
Small (1-999)	77.6	100.0	1.1	5,238	16
Medium (1,000-4,999)	83.2	100.0	5.2	4,995	37
Large (5,000+)	68.4	100.0	8.5	2,336	67

Notes:

[a] Regular NSLP rate used for SFAs with less than 60 percent of lunches served free or at reduced price in SY 2003-04; high need rate used for other SFAs.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.9

Total SFA Revenues from Nonreimbursable Meals as a Percentage of Total Reported Nonreimbursable Costs by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	71.3%	58.2%	6.8%	9,099	93
Poverty Status					
Less than 60% of lunches are free/reduced price	75.3	59.3	9.3	6,493	65
60% or more of lunches are free/reduced price	61.3	56.3	2.1	2,607	28
SFA Size					
Small (1-999)	53.8††	50.4	8.3	3,435	11
Medium (1,000-4,999)	79.6	59.3	9.6	3,969	30
Large (5,000+)	87.2	84.9	8.0	1,695	52

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, 2 SFAs with the highest ratios of revenues to costs for nonreimbursable meals, and 2 SFAs with the lowest ratios of revenues to costs for nonreimbursable meals. Extreme values were excluded because they had substantial influence on overall and group means.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Total Revenues Compared With Full Costs

As one would expect, given that, on average, SFA revenues were just covering reported costs, SFA revenues fell considerably short of covering the full costs of producing school meals.[91] Exhibit 7.10 shows that, on average, SFA revenues covered only 82 percent of their full costs. Revenues from reimbursable meals also fell short of covering the cost of producing these meals, with a revenue to cost ratio of 92 percent (Exhibit 7.11). Revenues from SBP breakfasts covered only 76.2 percent of the full costs of production and revenues from NSLP lunches covered only 93.4 percent of full costs (Exhibits 7.12 and 7.13). Similarly, revenues from nonreimbursable meals fell short of the cost of producing these meals, with a revenue to cost ratio of 61 percent (Exhibit 7.14).

[91] Appendix D, Exhibits D.58 – D.60 present the distribution of SFAs along the variables discussed in this section.

Exhibit 7.10

Total SFA Revenues as a Percentage of Total Full Cost of Foodservices by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	81.6%	81.1%	1.4%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	80.8	80.9	1.4	9,388	84
60% or more of lunches are free/reduced price	84.1	87.0	3.4	3,180	36
SFA Size					
Small (1-999)	81.0	80.8	2.7	5,238	16
Medium (1,000-4,999)	81.5	81.1	1.2	4,995	37
Large (5,000+)	83.2	82.7	0.9	2,336	67

Notes:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.11

Total SFA Revenues from Reimbursable Meals as a Percentage of Total Full Cost of Reimbursable Meals by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	91.8%	88.9%	3.3%	10,037	97
Poverty Status					
Less than 60% of lunches are free/reduced price*	87.8	86.0	3.3	7,430	69
60% or more of lunches are free/reduced price	103.2	98.8	4.5	2,607	28
SFA Size					
Small (1-999)	95.1	86.2	4.9	3,959	12
Medium (1,000-4,999)	87.4	88.9	2.7	4,299	32
Large (5,000+)	94.9	86.0	5.8	1,778	53

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.12

Total SFA Revenues from SBP Breakfasts as a Percentage of Total Full Costs of Producing SBP Breakfasts by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	76.2%	75.3%	4.8%	7,576	80
Poverty Status					
Less than 60% of lunches are free/reduced price	69.0*	65.6	6.2	5,060	54
60% or more of lunches are free/reduced price	90.7	85.3	4.1	2,516	26
SFA Size					
Small (1-999)	69.7	67.0	9.5	2,447	8
Medium (1,000-4,999)	80.1	84.2	4.9	3,583	26
Large (5,000+)	77.7	73.6	4.8	1,547	46

Notes:

[a] Excludes 40 SFAs that reported breakfast revenues and other revenues together or did not have a breakfast program.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.13

Total SFA Revenues from NSLP Lunches as a Percentage of Total Full Costs of Producing NSLP Lunches by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	93.4%	90.8%	3.5%	8,193	83
Poverty Status					
Less than 60% of lunches are free/reduced price	87.5**	86.1	2.5	5,677	57
60% or more of lunches are free/reduced price	106.7	101.5	5.2	2,516	26
SFA Size					
Small (1-999)	95.2	91.2	1.6	2,773	9
Medium (1,000-4,999)	90.3	92.4	2.6	3,873	28
Large (5,000+)	97.8	87.5	7.4	1,547	46

Note:

[a] Excludes 37 SFAs that reported lunch revenues and other revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.14

Total SFA Revenues from Nonreimbursable Meals as a Percentage of Total Reported Nonreimbursable Meal Costs by SFA Poverty Status and Size Class

	Revenue as a Percentage of Cost			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	60.6%	52.7%	6.0%	8,961	93
Poverty Status					
Less than 60% of lunches are free/reduced price	61.7	50.8	7.9	6,576	66
60% or more of lunches are free/reduced price	57.7	56.3	2.2	2,385	27
SFA Size					
Small (1-999)	46.4†	44.3	6.8	3,435	11
Medium (1,000-4,999)	69.6	50.8	9.5	3,748	29
Large (5,000+)	69.3	66.8	8.4	1,778	53

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, 2 SFAs with the highest ratios of revenues to costs for nonreimbursable meals, and 2 SFAs with the lowest ratios of revenues to costs for nonreimbursable meals. Extreme values were excluded because they had substantial influence on overall and group means.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

End-of-Year Cash Balances

SFAs are required to operate on a nonprofit basis, but they are allowed to retain a certain amount of net revenue at the end of each fiscal year. Under USDA regulations, an SFA may have net cash resources of up to three months' expenses.[92] A greater amount may be approved by the State for a specified purpose, such as accumulating funds for purchase of equipment. A cash balance is important for two reasons: cash flow and financial volatility. First, revenues may lag expenses, as previously noted. Second, revenues and expenses are volatile from year to year, so carrying over cash from a year with positive net revenues provides a financial reserve against the possibility of a deficit in the following year.

[92] Net cash resources equals cash on hand, minus payments due, plus accounts receivable. Anecdotal evidence suggest that payments due and accounts receivable often net each other out and thus net cash resources is fairly similar to cash on hand. SFAs define end-of-year cash balance as either net cash resources or cash on hand.

The research questions addressed in this section were:

- How many weeks of cash were on hand?
- Was the amount different from prior years? If so, what factors contributed to the change in end-of-year balance?
- Did the type of meal planning system have an effect on the end-of-year balance?

Size of End-of-Year Cash Balances

For this study, SFA end-of-year cash balances for SY 2005-06 were determined two ways. First, the **reported** end-of-year cash balance was obtained from SFA financial statements. Second, the **calculated** end-of-year cash balance was determined by the following formula:

starting cash balance + cash revenues – cash outlays = end-of-year cash balance

The calculated end-of-year cash balance was computed because the review of SFA financial statements often resulted in corrections to the value of cash revenues or outlays. It also assured that a comparable measure was available for all SFAs. On the other hand, the reported balance may be a better representation of the SFA's financial position.[93] Therefore, results for both measures are presented below.

For the average SFA, the SY 2005-06 end-of-year cash balance was about half of the limit. The average of this ratio was 54 percent for both reported and calculated end-of-year balances (Exhibit 7.15). The median ratio was 51 percent for the calculated end-of-year balances and 46 percent for the reported end-of-year balances. Thus, the average SFA had an end-of-year balance of about one and one-half months' expenses.

About one-quarter of SFAs had end-of-year balances exceeding the limit for net cash resources, as shown in Exhibit 7.16.[94] SFAs reported several reasons why accumulated cash balances exceeded the limit. Some mentioned in the interviews that they needed to accumulate extra cash for increased expenses in the 2006-2007 school year. One SFA indicated that growth in the county led to more net revenue than expected, and this affected its end-of-year balance. SFAs may have had State permission to accumulate end-of-year balances exceeding the limit. SFAs that do not have authorization to accumulate cash above the limit may be required by the State to establish a plan to reduce the balance. At least one SFA had such a plan for 2006-2007.

---

[93] The calculated balance did not take into account outstanding bills or reimbursements due, which some SFAs include when reporting their end-of-year cash balance (i.e., they actually report net cash resources). Thus, the reported balance may be correct but defined differently than the calculated balance. Also, there was some evidence that the ending balance for one year was not the same as the starting balance for the next year, particularly when a year ended with a negative balance. We assumed that these balances were equal for the calculated end-of-year balance, but if this was not so, then the reported cash balance would be more accurate than the calculated balance.

[94] Identification of SFAs with end-of-year balances above the limit was generally consistent whether the calculated or reported balance was used. However, seven SFAs had an absolute difference of 50 percent or more between the reported and calculated ending balance ratios.

Exhibit 7.15

Ratio of End-of-Year Balance to Three Months' Expenses (USDA Limit) by SFA Poverty Status and Size Class

	Calculated Balance			Reported Balance			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	54.4%	51.4%	10.3%	54.0%	45.9%	9.6%	12,550	119
Poverty Status								
Less than 60% of lunches are free/reduced price	59.4	53.0	11.4	58.2	46.7	11.6	9,370	83
60% or more of lunches are free/reduced price	39.7	51.4	20.3	41.9	45.9	14.9	3,180	36
SFA Size								
Small (1-999)	57.1	55.2	17.2	61.2	65.6	17.9	5,238	16
Medium (1,000-4,999)	53.3	51.4	17.0	49.5	45.9	13.4	4,995	37
Large (5,000+)	50.5	37.4	6.8	47.8	37.3	6.0	2,318	66
à la Carte Revenues[b]								
<10% of Total Revenue	70.2	53.0	19.0	69.9	47.7	21.1	3,789	28
≥10% of Total Revenue	42.7	50.1	15.4	43.2	45.9	12.4	5,594	65

Notes:

[a] Excludes the one SFA with missing data on balances.

[b] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together. One of these 27 SFAs also had missing data on balances.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit 7.16

Percentage of SFAs with End-of-Year Balance Greater than Three Months' Expenses by SFA Poverty Status and Size Class

	Calculated Balance	Reported Balance	SFA Sample Size[a]	
			Weighted	Unweighted
Total	24.9%	22.5%	12,550	119
Poverty Status				
Less than 60% of lunches are free/reduced price	26.4	23.7	9,370	83
60% or more of lunches are free/reduced price	20.5	18.8	3,180	36
SFA Size				
Small (1-999)	26.2	26.2	5,238	16
Medium (1,000-4,999)	25.6	20.4	4,995	37
Large (5,000+)	20.3	18.3	2,318	66
à la Carte Revenues[b]				
<10% of Total Revenue	33.2	33.3	3,789	28
≥10% of Total Revenue	22.2	14.6	5,594	65

Notes:

[a] Excludes the one SFA with missing data on balances.

[b] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together. One of these 27 SFAs also had missing data on balances.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Change in End-of-Year Cash Balances

About 42 percent of SFAs reported that their end-of-year cash balances increased from SY 2003-04 to SY 2005-06 (Exhibit 7.17). Meanwhile, 35 percent reported a decrease in balances, and 20 percent reported no change.

Reasons for Changes in End-of-Year Cash Balances

The end-of-year cash balance is the sum of the beginning balance and the net revenue, so the trend in this balance over time is driven by changes in net revenue. From Exhibit 7.17, it appears that SFAs relying more on USDA reimbursements may have more stable net revenues than SFAs relying more on revenue from students. (As discussed previously, medium-sized SFAs have a greater percentage of revenues from USDA reimbursements than other SFAs.)

Exhibit 7.17

Trend in End of Year Balance from SY 2003-04 to SY 2005-06 by SFA Poverty Status and Size Class

	Percent of SFAs				SFA Sample Size	
	Increased	About the Same	Decreased	Don't Know/ Refused	Weighted	Unweighted
All SFAs	42.0%	19.8%	34.8%	3.4%	12,568	120
SFA Enrollment						
Small (1-999)	31.9	19.7	41.8	6.6%	5,238	16
Medium (1,000-4,999)	52.3	21.1	26.6	0.0%	4,995	37
Large (5,000+)	42.6	17.2	37.0	3.2%	2,336	67
Poverty Status						
Less than 60% of lunches are free/reduced price	39.1	22.2	38.5	0.2%	9,388	84
60% or more of lunches are free/reduced price	50.5	12.7	24.2	12.7%	3,180	36

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Net SFA revenues may change because of trends in revenues and costs. The size and mix of student participation in meal programs represent one key variable for revenues–increased participation may allow SFAs to hold down meal cost and therefore prices. Meal prices also impact net revenues as increased prices may cut participation. Food prices, wages, employee benefits, and menus are all factors affecting the main costs, which are food and labor. Some changes in SFA operations may affect both revenues and costs. A change in the menu planning system may change the rate of participation in the NSLP and SBP, particularly in the short run as students adapt to new menus. Implementation of nutrient-based menu planning could entail higher initial costs to develop menus and train staff, although long-run costs could be higher or lower. (The issue of whether the menu planning system is related to SFA meal costs is addressed in Chapter Eight.)

SFAs with increasing end-of-year cash balances reported a variety of reasons for this trend. As shown in Exhibit 7.18, the most common reasons were: changes in NSLP or SBP participation (56 percent of SFAs with increasing balances), changes in meal prices (39 percent), changes in total à la carte revenue (32 percent), changes in prices for food or labor (21 percent), and changes in specific menus (15 percent). These reasons were not mutually exclusive and in fact could be related: for example, changes in menus could lead to reduced food costs or increased participation. Changes in menu planning system were cited as a reason for increasing cash balances by only 6 percent of SFAs, and less than 2 percent of SFAs cited changes in meal production system as a factor.[95]

For SFAs with decreasing cash balances, change in prices for food or labor was by far the most common reason, cited by 72 percent of these SFAs (Exhibit 7.19). "Prices" for labor include wages and fringe benefit costs per employee. Other frequently cited reasons were: change in NSLP or SBP participation (16 percent) and change in total à la carte revenue (13 percent).

Exhibit 7.18

Reasons for Increase in End of Year Cash Balance from SY 2003-04 to SY 2005-06

	Percent of SFAs	Number of SFAs[a]	
		Weighted	Unweighted
Change in NSLP/SBP Participation	55.9%	2,952	25
Change in NSLP/SBP Meal Prices	39.4	2,080	15
Change in total à la carte revenue	31.5	1,660	15
Change in markup on à la carte foods	8.9	468	7
Change in prices for food or labor	21.0	1,107	10
Change in meal planning method	6.3	332	6
Change in specific menus	15.3	809	8
Change in meal production system	1.5	80	3
Other	60.4	3,187	30
Don't Know	0.9	47	2
Missing	0.0	1	1

Note:

[a] Includes 53 SFAs who reported an increase in cash balance.

[95] "Other" reasons for increasing or declining balances typically were a variant on one or more of the most common reasons. None of the specified "other" responses was sufficiently common to represent a notable reason omitted from the pre-specified responses.

Exhibit 7.19

Reasons for Decrease in End of Year Cash Balance from SY 2003-04 to SY 2005-06

	Percent of SFAs	Number of SFAs[a]	
		Weighted	Unweighted
Change in NSLP/SBP participation	16.2%	709	7
Change in NSLP/SBP meal prices	9.1	401	2
Change in total à la carte revenue	12.8	562	7
Change in markup on à la carte foods	0.0	0	0
Change in prices for food or labor	72.8	3,189	23
Change in meal planning method	7.6	332	2
Change in specific menus	8.3	364	3
Change in meal production system	0.0	0	0
Other	62.9	2,755	27
Don't know	0.6	26	1
Missing	0.0	1	1

Note:

[a] Includes 42 SFAs who reported a decrease in cash balance.

Chapter Eight

Indirect *versus* Direct Measurement of School Meal Costs

This chapter uses data on reported costs from SLCBS-II and from the USDA SFA Characteristics Study (SFACS) to answer two questions:

- How close does an indirect measurement method come to direct measurement with regard to:
  - Calculating the ***nationwide average*** reported cost of a breakfast or lunch?
  - Calculating ***variations across SFAs*** in reported cost of a breakfast or lunch?
- How significant is the nonresponse bias that arises from using direct rather than indirect measurement of school meal program reported costs?

In brief, the indirect method appears to overestimate the cost of lunches and underestimate the cost of breakfasts. The indirect estimates have a much smaller range than the direct estimates. They are well correlated with the direct cost estimates of lunches, but not at all with direct cost estimates of breakfasts. We find no evidence of substantive nonreponse bias from using direct measurement.

In the sections that follow, we describe and contrast the direct and indirect measurement approaches; present the indirect estimates; and show the apparent absence of response bias in direct measurement. We conclude with implications for future school meal cost studies.

Description of Direct and Indirect Measurement Approaches

The ***indirect method*** estimates the cost per breakfast or lunch using data ***on total costs and outputs through:***

- a standard equivalency ratio (e.g., one breakfast costs as much as 0.7 lunches); or alternatively
- use of a statistical model that relates total costs to outputs.

The ***direct method***, in contrast, estimates the percentages of food and labor costs attributable to reimbursable lunches, reimbursable breakfasts, and nonreimbursable foodservice from ***detailed data on food and labor usage***, and then allocates other costs proportionately.

The direct method has been deemed the "gold standard." By observing and recording the resources used in producing meals over the course of a week in a sample of schools, it can allocate annual SFA reported costs appropriately by meal type. It also collects complete information on unreported costs, primarily overhead activities for which the SFA is not charged. (The process for collecting unreported costs is separate from and much less burdensome than the process for collecting data on food and labor usage by meal type. Therefore, a potential compromise approach is to collect the unreported costs and use the indirect approach to allocate full costs by meal type.)

The indirect method offers several practical advantages. The cost of collecting the data is lower; the burden on SFAs is lower; and response rates are higher (because of the lower burden). The higher response rate—and thus a smaller nonresponse bias—might even give this method an accuracy advantage over the direct method.

An assessment of the direct and indirect methods should consider two criteria. First, does the indirect method yield ***similar estimates of average costs*** of reimbursable breakfasts and lunches? To the extent that the estimates differ from those of the direct measure for reported costs, we may ask:

- How much of the difference is due to *misallocation of costs between reimbursable breakfasts and reimbursable lunches* (a potential shortcoming of the indirect method)?[96]
- How much of the difference is due to *differential response rates* (a potential shortcoming of the direct method)?

The second criterion for comparing direct and indirect methods is how accurately they estimate the extent of ***variations among SFAs in costs*** of reimbursable meals. This criterion requires estimates of costs for individual SFAs. Use of the indirect method could lead to inequities in reimbursement rates if it underestimates costs of breakfasts relative to lunches.[97]

Comparison of Indirect and Direct Estimates of Average Reported Costs Per Meal

The indirect measurement method was applied to data from the USDA SFA Characteristics Study (SFACS), conducted in the spring of 2004. The SFACS had three components: a "fax-back" survey, a telephone survey, and a self-administered questionnaire (SAQ). The SAQ collected the data on SY 2002-03 costs and revenues, pay rates, and meal counts, with an overall response rate of 70 percent. The SAQ was thus the data source of the both the dependent variable (total reported costs) and the chief explanatory variables (meal counts) for the indirect measurement analysis. SFA characteristics were taken from the other two surveys. The SBLCS-II sample is a subset of the SFACS sample.

As discussed in Chapter Three, the direct estimates of the average reported cost of breakfasts and lunches in SY 2005-06 are $1.92 and $2.36. Using an econometric modeling approach described in Appendix C, corresponding indirect estimates were obtained from SFACS data for SY 2003-04. These indirect estimates are, respectively, $1.35 and $2.33.

The indirect estimate uses conceptually the same aggregate reported costs as does the direct method, and distributes the total across breakfasts and lunches. Because the SFACS data are from SY 2003-

---

[96] The analyses presented here do not address the possible misallocation of costs by the indirect method between reimbursable and nonreimbursable meals. Instead, it is assumed that all SFAs charged the average 4.38 percent markup on the costs of nonreimburseable meals.

[97] Naturally, any reimbursement rates that cover costs "on average" will generate winners and losers. This is as true of rates based on direct measurement as those based on indirect measurement, because SFAs face different environments. The indirect method may however incorporate additional discrepancies by misallocating reimbursements between breakfasts and lunches, so that SFAs that serve many breakfasts may be particularly vulnerable.

04 instead of SY 2005-06, we multiply the cost estimates by 1.09 (corresponding to the CPI inflation factor over this time period for food away from home (FAFH)). This gives us estimated average costs for breakfast and lunch of $1.47 and $2.59, respectively.

This indirect approach produces too high a cost for lunch ($2.59 versus $2.36) and too low a cost for breakfast ($1.47 versus $1.92) relative to the direct estimates. The ratio of the cost of a breakfast to a cost of a lunch was *directly* estimated as 0.81 ($1.92 ÷ $2.36). The estimate of this parameter in the indirect cost model is a much lower value, 0.58. This lower value actually corresponds closely to the value implicit in current reimbursement rates. For example, for the SBLCS-II school year (2005-2006) the maximum reimbursement rates for breakfasts and lunches in the continental US were $1.51 and $2.49, respectively, corresponding to a breakfast-to-lunch cost ratio of 0.61. For SY 2003-04, when SFACS data were collected, the values were $1.43 and $2.36, also corresponding to a value of 0.61.

If we fix the ratio of breakfast to lunch costs at 0.81 (=$1.92/$2.36) rather than estimating it, the indirect measurement model matches the SBLCS-II reported cost estimates almost exactly, with values of $1.94 and $2.40.

For SFAs whose costs were measured both directly in the current study and indirectly in the earlier study,[98] the mean discrepancy using the indirect approach is +$0.18 for lunches and –$0.48 for breakfasts (Appendix C, Exhibit C.2). The range of the discrepancy is quite large, because the indirect method predicts within a narrow range while the reported values vary widely. Reported costs of lunches in the overlapping SBLSC-II sample ranged from $0.73 to $4.58, while reported costs of breakfasts ranged from $0.63 to $5.30.

Comparing each SFA's actual with its predicted value, the indirect method underestimated lunch costs by as much as $2.00 and overestimated by as much as $1.46. For breakfasts, the indirect method underestimated by as much as $3.83 and overestimated by as much as $0.82. The discrepancies were regressed on SFA characteristics. Only a single factor was a significant predictor in either relationship at the $p < 0.05$ level: the indirect approach especially overestimated the cost of lunches in those SFAs with snack programs (Exhibit C.2).

By construction, the indirect cost estimates for breakfasts in an SFA are exactly proportional to those for lunches (with a constant of proportionality estimated to be equal to 0.58). The indirect cost measure for lunches explains 5 percent of the variation in the direct measure (not statistically significant). For breakfasts, however, the indirect measure explains only a negligible amount of the variation.

[98] Although the SBLCS-II sample was drawn from the SFACS sample, SAQ data were not available for all of the SBLCS-II respondents. The analysis described here is based on the overlapping samples: 95 SFAs participating in NSLP, and 92 SFAs participating in SBP. We note that the average reported costs of lunches and breakfasts in the full SBLSC-II sample are virtually unchanged by the exclusion of the SFAs for which SFACS data are missing. The difference is zero for the cost of lunch and 2 cents for the cost of breakfast.

Assessing Response Bias

The response burden imposed by direct measurement might lead to a nonresponse bias for the "gold standard" approach. To examine this issue we compared the SLBCS-II responders with the sample frame from which they were drawn.

Exhibit 8.1 compares SFACS and SBLCS-II responders with regard to characteristics hypothesized to be associated with variation in the average cost per lunch and included in the models of costs presented in Appendix C. These characteristics include:

- Uncontrollable factors, such as region of the country, rural versus urban, and child poverty rate; and
- Controllable factors, such as use of a central kitchen or a foodservice management company.

These comparisons used the same 95 SBLSC-II responders as above. We compared these with the full sample on which SFACS cost data are available, with respect to the characteristics mentioned above that were measured for SFACS. We did not perform statistical tests because our interest is with the magnitude rather than the statistical significance of the differences.

Two expected differences, attributable to the SBLSC-II sample design, are seen. First, because very large SFAs were selected with certainty, the mean log number of lunches is greater among SBLSC-II respondents than in the sample frame from which they were drawn. Second, SFAs in which all meals are prepared at the schools at which they are served were deliberately underrepresented in the SBLSC-II sample.

Aside from these systematic differences due to sampling, few qualitative differences are seen. The SBLCS-II responders resemble the sample frame from which they were drawn with proportions differing by less than 5 percentage points.

The net effect of these differences in characteristics on predicted meal costs is trivial, as shown in Exhibit 8.2. The average predicted costs of a breakfast and a lunch for SBLSC-II responders differ from those for the full SFACS sample by only a penny. Thus, there is no evidence from measured characteristics that cost estimates are biased as a result of the 60 percent cooperation rate among sampled SFAs.

Implications for Future Research

The analyses reported here provide no evidence that the reporting burden for direct cost measurement leads to biased estimates of the cost of a breakfast or a lunch. They do suggest that the indirect method misallocates costs between breakfasts and lunches.

One possible explanation for the different results is that conceptually, the direct method seeks to allocate joint costs fairly between the breakfast and lunch programs. The indirect method, in contrast, effectively charges the breakfast program for the incremental costs of breakfasts, given that the lunch program already exists. The issue of using incremental or average costs for setting the reimbursement rates for breakfast and lunch has been much debated. While there is agreement that incremental cost is the appropriate measure to use when a school or school district that does not have a breakfast

Exhibit 8.1

SFA Characteristics: SFACS and SBLSC-II Responders

Characteristic	SFACS Sample[a]	SBLSC-II Responders[a]
Region		
Midatlantic	10.3%	6.1%
Midwest	25.2	20.8
Mountain	16.5	22.3
Northeast	11.9	11.3
Southeast	8.5	15.6
Southwest	13.9	11.7
Western	13.7	12.2
MSA status		
Central city	7.1%	10.4%
Other MSA	41.5	32.0
Non-MSA	51.4	57.6
Child poverty		
≥ 30%	92.2	95.0
< 30%	7.8%	5.0%
Serve only elementary school students	14.5%	12.0%
Mean wage of foodservice worker	$7.58	$7.35
Use FSMC	10.3%	10.5%
After school snack program	23.2%	28.8%
Any Provision 2 or 3 schools (all free breakfasts or lunches)	8.9%	7.5%
Meal production system:		
All meals served are prepared on site	61.6%	46.2%
All meals served are prepared off site[b]	3.1%	4.2%
Menu planning method:		
Nutrient standard	16.0%	22.3%
Enhanced food-based	22.7	27.5
Log (# lunches served)	11.7	12.3
Unweighted Sample size	1460	95

Note:

[a] Excludes SFACS and SBLSC-II responders with incomplete SFACS cost data. See footnote 83.

[b] SFA has no independent or base kitchens. This category is more restrictive than the "all base/satellite" category used elsewhere in this report. The SFACS data did not allow the identification of all SFAs with base/satellite production systems.

Exhibit 8.2

Predicted Cost of Meals: SFACS and SBLSC-II Responders

	SFACS Sample[a]	SBLSC-II Responders[a]
Average cost of a lunch	$2.52	$2.51
Average cost of a breakfast	$1.46	$1.45
Unweighted sample size	1,460	95

Note:

In 2006 dollars

[a] Excludes SFACS and SBLSC-II responders with incomplete SFACS cost data.

program is making a decision whether or not to start a breakfast program, once a breakfast program is in operation the question becomes one of "product pricing." How should indirect costs be allocated between reimbursable breakfasts, reimbursable lunches, and nonreimbursable food items or meals?

Generally accepted accounting practices (GAAP) require that a portion of indirect costs be allocated to each product. This is the approach taken in SLBCS-II: the estimated reported costs for reimbursable breakfasts and lunches in each SFA include a proportional share of indirect costs.

Chapter Nine

Comparison of Findings: SLBCS-II vs. SLBCS-I

This chapter compares the findings from SLBCS-II with the findings from SLBCS-I, which was conducted in SY 1992-93. While the same methodology was used to measure reported costs in both studies, as discussed later in this chapter, SLBCS-II used a slightly more inclusive definition of full costs that was used in SLBCS-II. However, for purposes of comparison, this chapter uses the same definition of full cost as was used in SLBCS-I. Thus, after adjusting for inflation, both the reported and full cost estimates from the two studies should be directly comparable. We have adjusted the SLBCS-I costs to reflect changes in the Consumer Price Index for food away from home between SY 1992-93 and SY 2005-06. The inflation factor is 1.39. Standard errors of estimates (SEE) were not explicitly reported in SLBCS-I, but they have been computed from the published information.[99]

One key finding is that there was no significant difference in the real (inflation-adjusted) reported cost of producing reimbursable meals over the 14 years that elapsed between the two studies, even though the nutritional standards have changed. The relationship of SFA revenues to reported costs also has not changed. However, unreported costs as a percentage of full costs decreased over the period. Since unreported costs represent an in-kind subsidy made by the school district to food service, the decrease in unreported costs means that in SY 2005-06 school districts were charging SFAs (either directly or indirectly) for more of the support services that they provided than was the case in SY 1992-93. Below we present comparisons of reported costs, full costs, and the relationship of SFA revenues to reported costs.

Reported Costs

Reported Cost per Reimbursable Meal

Exhibit 9.1 presents the estimates of the mean reported cost of producing reimbursable lunches and breakfasts. For the average SFA, the SY 1992-93 mean reported cost of producing a reimbursable lunch, in 2006 dollars, was $2.28, compared to $2.36 in SY 2005-06. Similarly, for the average SFA, the SY 1992-93 mean reported cost of producing a reimbursable breakfast, in 2006 dollars, was $1.77, compared to $1.92 in SY 2005-06. Neither of these differences is statistically significant at the .05 level.

When the unit of analysis is the meal (rather than the SFA) the mean reported inflation-adjusted cost of producing a reimbursable lunch in SY 1992-93 was $2.35, compared to $2.28 in SY 2005-06. The mean reported inflation-adjusted cost of producing a reimbursable breakfast in SY 1992-93 was $1.55, compared to $1.46 in SY 2005-06. Again, neither of these differences is statistically significant at the .05 level.

[99] The SEE have been estimated from the published standard deviations. This method tends to underestimate the SEE. Available data suggest the underestimate is no more than $0.01 for mean costs, or 0.1 percent for proportions.

Exhibit 9.1

Comparison of Reported Cost per Reimbursable Meal

Reported Cost Measure	Unit of Analysis	Mean (Standard Error of Estimate) SLBCS-I	SLBCS-I 2006 Dollars	SLBCS-II
Cost per Reimbursable Lunch	SFA	$1.64	$2.28	$2.36
		(0.04)	(0.05)	(0.09)
Cost per Reimbursable Lunch	Meal	1.69	2.35	2.28
		(0.03)	(0.04)	(0.04)
Cost per Reimbursable Breakfast	SFA	1.27	1.77	1.92
		(0.07)	(0.09)	(0.18)
Cost per Reimbursable Breakfast	Meal	1.11	1.55	1.46
		(0.03)	(0.04)	(0.06)

Notes:

**Statistically significant difference at the 5 percent level (two-tailed test).

Comparisons between SLBCS-I, 2006 dollars and SLBCS-II, without asterisks (*) are not statistically significantly different at the 5 percent level.

Composition of Reported Costs

Exhibit 9.2 compares the composition of reported costs. Food accounted for 46 percent of reported cost in SY 2005-06 compared to 48 percent in SY 1992-93, a difference that is not statistically significant. Both figures for labor were about 44 percent. Other costs (including supplies, utilities, equipment, and indirect costs) were 10 percent of reported costs in SY 2005-06, compared to 8 percent in SY 1992-93.

Administrative Labor Costs

Exhibits 9.3 and 9.4 compare the percentage of reported costs accounted for by administrative labor in the two studies. Across all SFAs, administrative labor accounted for 17 percent of *total reported labor costs* SY 1992-93 and 19 percent in SY 2005-06. Similarly, administrative labor accounted for about eight percent of *total reported costs* in both studies. The overall differences are not statistically significant.

Exhibit 9.2

Comparison of the Composition of Reported Foodservice Cost

Component	Percentage (Standard Error of Estimate) SLBCS-I	SLBCS-II
Food	48.3%	45.6%
	(1.1)	(1.2)
Labor	43.8	44.5
	(1.2)	(1.0)
Other	7.9	9.9
	(0.5)	(0.9)
Total	100.0%	100.0%

Note:

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

Exhibit 9.3

Comparison of Administrative Labor Cost as a Percentage of Reported Labor Cost by SFA Size

SFA Size	Percentage (Standard Error of Estimate)	
	SLBCS-I	SLBCS-II
Small (1-999)	17.6%**	13.9**
	(1.2)	(1.2)
Medium (1,000-4,999)	16.7**	20.9**
	(0.9)	(1.4)
Large (5,000+)	18.7**	24.2**
	(0.9)	(1.6)
All SFAs	17.4%	18.6
	(1.1%)	(1.1%)

Note:

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

Exhibit 9.4

Comparison of Administrative Labor Cost as a Percentage of Total Reported Cost by SFA Size

SFA Size	Percentage (Standard Error of Estimate)	
	SLBCS-I	SLBCS-II
Small (1-999)	7.6%	6.5%
	(0.5)	(0.6)
Medium (1,000-4,999)	7.8	8.7
	(0.5)	(0.6)
Large (5,000+)	8.7**	11.0**
	(0.4)	(0.7)
All SFAs	7.9%	8.2%
	(0.5)	(0.5)

Note:

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

Full Costs

Full Cost of Reimbursable Meals

There was a significant reduction in the inflation-adjusted full cost of producing the average reimbursable lunch (Exhibit 9.5). Using the meal as the unit of analysis, the average inflation-adjusted full cost of all reimbursable lunches fell by $0.16, from $2.71 in SY 1992-93 to $2.55 in SY 2005-06. Using the SFA as the unit of analysis, the average inflation-adjusted full cost of producing a reimbursable lunch was estimated as $2.97 in SY 1992-93, compared to $2.72 in SY 2005-06; this difference was not statistically significant.

There was an estimated reduction of $.15 in the inflation-adjusted full cost of producing the average reimbursable breakfasts: from $1.78 in SY 1992-93 to $1.63 in SY 2005-06. This difference is not statistically significant, however. For the average SFA, the inflation-adjusted full cost of a reimbursable breakfast was $2.32 in SY 1992-93, compared to $2.25 in SY 2005-06; as with the lunch measure for the average SFA, this difference was not significant.[100]

Composition of Full Costs

Exhibit 9.6 compares the composition of full costs. There were no notable differences in the composition of full costs between SY 1992-93 and SY 2005-06. Food accounted for 38 percent of full cost in SY 1992-93 compared with 40 percent in SY 2005-06. The comparable figures for labor are 46 percent and 44 percent.

Exhibit 9.5

Comparison of Full Cost per Reimbursable Meal

Full Cost Measure	Unit of Analysis	Mean (Standard Error of Estimate)		
		SLBCS-I	SLBCS-I 2006 Dollars	Comparable SLBCS-II[a]
Cost per Reimbursable Lunch	SFA	$2.14	$2.97	$2.72
		(0.10)	(0.13)	(0.10)
Cost per Reimbursable Lunch	Meal	1.95	2.71**	2.55**
		(0.05)	(0.06)	(0.04)
Cost per Reimbursable Breakfast	SFA	1.67	2.32	2.25
		(0.09)	(0.12)	(0.23)
Cost per Reimbursable Breakfast	Meal	1.28	1.78	1.63
		(0.04)	(0.06)	(0.06)

Notes:

[a] Comparable SLBCS-II estimates exclude unreported school meal labor that was not counted in SLBCS-I.

** Statistically significant difference at the 5 percent level (two-tailed test).

Comparisons between SLBCS-I, 2006 dollars and SLBCS-II, without asterisks (*) are not statistically significantly different at the 5 percent level.

[100] Both studies were designed to achieve specified levels of precision using the meal as the unit of analysis, and thus do not have enough statistical power to detect changes of comparable magnitude with the SFA as the unit of analysis.

Exhibit 9.6

Comparison of the Composition of the Full Cost of Foodservice

Component	Percentage (Standard Error of Estimate)	
	SLBCS-I	Comparable SLBCS-II[a]
Food	38.2%	39.8%
	(0.7)	(1.1)
Labor	45.8	44.4
	(0.8)	(1.0)
Other	16.0	16.1
	(0.4)	(0.9)

Notes:

[a] Comparable SLBCS-II estimates exclude unreported school meal labor that was not counted in SLBCS-I.

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

Unreported Costs

For comparisons with SLBCS-I, unreported school meal-related labor was excluded from the SLBCS-II estimates of full costs. This was done because SLBCS-I did not count meal supervision or other meal-related labor by school non-foodservice personnel in measuring unreported costs, whereas this labor represented 68 percent of all unreported labor in SLBCS-II. (Chapter Four presents the arguments for and against including this cost in full costs.) Therefore, the SLBCS-II statistics for unreported and full costs in this chapter do not match the statistics in Chapter Four and Chapter Seven.

When comparable data are used, we find that between SLBCS-I and SLBCS-II, there was a significant reduction in unreported costs as a percentage of full costs. In SLBCS-I, unreported costs (as defined in that study) accounted for 19 percent of the full cost of foodservice operations; in SLBCS-II, the portion of unreported costs that was equivalent to the unreported costs in SLBCS-I equaled on 12 percent of full costs, as shown in Exhibit 9.7.

Composition of Unreported Costs

There were notable changes in the composition of the comparable set of unreported costs from SLBCS-I to SLBCS-II, as shown in Exhibit 9.7. In SY 1992-93 unreported labor accounted for 44 percent of total unreported costs. This percentage fell to 34 percent in SY 2005-06, while the percentage for indirect costs rose from 27 to 44 percent of a smaller base. These changes mean that a larger percentage of the unreported labor costs are now being accounted for as part of indirect costs. The percentage of unreported costs for utilities fell from 11 percent to 5 percent, while the percentage for depreciation was essentially unchanged.

The decrease in unreported labor as a percentage of total unreported cost occurred across all SFA size classes though was statistically significant only among large SFAs (Exhibit 9.8). While total unreported labor as a percentage of total unreported costs declined from SY 1992-93 to SY 2005-06, the decline occurred in unreported district-level labor rather than unreported school-based labor.

Exhibit 9.7

Comparison of Percentage of Unreported Costs by Component and Unreported Costs as a Percentage of Full Costs

Cost Component[a]	SLBCS-I		Comparable SLBCS-II[b]	
	Mean	Std Err of Estimate	Mean	Std Err of Estimate
Labor	43.9%**	2.8%	33.6%**	3.6%
Indirect Costs	27.1**	2.4	43.6**	3.9
Depreciation	16.3	1.6	17.2	2.0
Utilities	11.3**	1.4	4.8**	1.5
Other	1.4**	0.2	0.8	0.4
Total	100.0%		100.0%	
Unreported Costs as a Percentage of Full Costs	18.6% **	1.2	12.5% **	0.8

Notes:

[a] No unreported costs for food in either study.

[b] Comparable SLBCS-II estimates exclude unreported school meal labor that was not counted in SLBCS-I.

** Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without asterisks (*) are not statistically significantly different at the 5 percent level.

Exhibit 9.8

Comparison of Unreported Labor as a Percentage of Total Unreported Cost by SFA Size

SFA Size	Percentage (Standard Error of Estimate)	
	SLBCS-I	Comparable SLBCS-II[a]
Small (1-999)	40.6%	36.8%
	(2.4)	(6.8)
Medium (1,000-4,999)	40.8	35.8
	(2.8)	(5.7)
Large (5,000+)	60.6**	22.2**
	(3.2)	(5.4)
All SFAs	43.9%**	33.6%**
	(2.8)	(3.6)

Notes:

[a] Comparable SLBCS-II estimates exclude unreported school meal labor that was not counted in SLBCS-I.

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

School-based unreported administrative labor (e.g., principals, school secretaries, etc) accounted for 40 percent of total unreported labor costs in SY 1992-93, but increased to 77 percent of total unreported labor in SY 2005-06 (Exhibit 9.9). This increase occurred in all SFA size classes, but was most pronounced in small SFAs where unreported school-based labor increased from 21 to 73 percent of total unreported labor costs. These increases reflect a decrease in unreported district-level labor rather than an increase in unreported school-based labor. Unreported school-based labor was about 3 percent of full costs in both SY 2005-06 and SY 1992-93.

Two factors may have contributed to the reduction in unreported district-level labor. First in SY 2005-06, more districts had unrestricted indirect cost rates, which include much or all of the district-level staff that provide support to school foodservice. This had the effect of increasing indirect costs (reported or unreported) while at the same time reducing district-level unreported labor costs. Second, there may have been fewer SFAs where central foodservice staff costs are unreported.[101]

It appears that the magnitude of unreported costs for utilities declined. It is not clear whether this difference resulted from actual changes in resource use and reporting, or from difference in study methods.[102] In the context of full costs, the difference is very small: utilities represented about 2 percent of full costs in SLBCS-I versus about 1 percent in SLBCS-II.

Exhibit 9.9

Comparison of School-Based Administrative Labor as a Percentage of Total Unreported Labor Cost by SFA Size

SFA Size	Percentage (Standard Error of Estimate)	
	SLBCS-I	Comparable SLBCS-II[a]
Small (1-999)	20.8%**	73.1%**
	(3.2)	(10.5)
Medium (1,000-4,999)	56.7**	75.9**
	(4.0)	(7.2)
Large (5,000+)	59.3**	87.6**
	(4.0)	(4.8)
All SFAs	39.6%**	77.0%**
	(4.1)	(5.0)

Notes:

[a] Comparable SLBCS-II estimates exclude unreported school meal labor that was not counted in SLBCS-I.

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

[101] The percentage of SFAs with unreported costs for central foodservice staff was not tabulated in either study, but anecdotal evidence from individual SFA interviews suggests that this form of district in-kind subsidy has become less common.

[102] In SLBCS-II, more SFAs had utilities included in their reported or unreported indirect costs. This may be because more SFAs had unrestricted indirect cost rates (which include utilities more often than restricted rates), or because SLBCS-II had better information on whether utility costs were included in the indirect cost rate.

Composition of Revenues

There was a shift in the composition of SFA revenues from SY 1992-93 to SY 2005-06, as shown in Exhibit 9.10. In particular, the percentage of revenues from USDA reimbursements increased from 39 to 45 percent; this was offset by a decline from 8 percent to 5 percent in the share of revenues from USDA donated commodities. Student payments declined from 35 to 24 percent of revenues. The changes in student payments and USDA reimbursements appear to result from two factors: the national increase in free and reduced-price meals as a percentage of total meals, from 54.8 percent (in Fiscal Year 1993) to 59.3 percent (in FY 2006), and the growth of the SBP (924 million meals in FY 1993 to 1.66 billion in FY 2006).[103] Compared with the NSLP, the SBP had a higher share of meals served free or reduced price (81.2 percent).[104] The combined total of State and local reimbursements increased from 4 percent to 9 percent; local funds represented the majority of this revenue source in SY 2005-06. The share of revenues from à la carte sales was they same in SY 2005-06 as in SY 1992-93.

Exhibit 9.10

Comparison of the Composition of SFA Revenues

	SLBCS-I		SLBCS-II	
Source of Revenues	**Mean**	**Std Err of Estimate**	**Mean**	**Std Err of Estimate**
USDA Subsidies	46.7%	(1.8%)	50.6%	(2.1%)
Meal Reimbursements	38.5**	(1.7)	45.4**	(1.8)
Donated Commodities	8.2**	(0.3)	5.2**	(0.4)
State and Local Reimbursements	3.9**	(0.5)	8.8**	(2.0)
State Reimbursements			2.4	(0.3)
Local Government Funds			6.4	(2.0)
Student Payments for Reimbursable Meals	35.0**	(1.3)	24.2**	(1.5)
à la Carte and Other Nonreimbursable Sales	15.4	(1.2)	15.8	(2.0)
Other Cash Revenues	1.8**	(0.5)	0.6**	(0.1)
Total	100.0%		100.0%	

Note:

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without astrisks (*) are not statistically significantly different at the 5 percent level.

[103] Under Provision 2 and Provision 3, schools serve breakfast or lunch free to all students, but claim reimbursement according to the students' eligibility status. In these schools, State or local funds take the place of student payments for meals claimed at the paid or reduced-price level. The use of these provisions reduces the average percentage of revenues from student payments. In School Year 2004-05, 17 percent of schools served free breakfast to all students, and 14 percent served free lunches to all students under these provisions (U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis, School Nutrition Dietary Assessment Study-III, Vol. I: School Foodservice, School Food Environment, and Meals Offered and Served, by Anne Gordon, et al. Project Officer: Patricia McKinney. Alexandria, VA: 2007.) The available data do not indicate what proportion of meals are served in Provision 2/3 schools. We did not attempt to determine whether these percentages have changed since SY1992-93.

[104] Program data obtained from http://www.fns.usda.gov/pd/cnpmain.htm on October 4, 2007.

Revenue and Cost

As discussed in Chapter Six, SFAs are required to operate on a nonprofit basis, and for the most part, school districts expect SFAs to generate enough revenue to cover their reported costs. On average, this expectation was met: the average SFA operated at the break-even level for revenues vs. reported costs in both SY 1992-93 and SY 2005-06.

However, while SFAs may "break even", the possibility exists to shift costs between reimbursable and nonreimbursable meals. A major finding of SLBCS-I was that SFAs subsidize the cost of reimbursable breakfasts with excess revenue generated from reimbursable lunches, and subsidize the cost of nonreimbursable meals with overall excess revenue generated from all reimbursable meals. This was also the case in SLBCS-II. Exhibit 9.11 presents the average revenue to cost ratios for the two studies. In SLBCS-II, revenues from reimbursable meals exceeded the cost of producing these meals by an average of 15 percent, compared to 13 percent in SLBCS-I. In both studies, revenues from nonreimbursable meals fell short of the cost of producing these meals by 29 percent. In SY 2005-06, reimbursable lunches generated revenues of 16 percent above the cost of producing these lunches, but revenues from reimbursable breakfasts fell short of the cost of producing these breakfasts by four percent. SLBCS-I reached a similar conclusion. Although SLBCS-I did not collect data on revenues separately for reimbursable lunches and breakfasts, the study noted that the average cost of a reimbursable lunch was less that the Federal subsidy for a free lunch, while the average cost of a reimbursable breakfast exceeded the Federal subsidy for a free breakfast. This pattern remained true in SY 2005-06. As discussed in Chapter Eight, breakfast costs would fall if only incremental costs were allocated, while lunch costs would rise. Treating breakfast costs as incremental would therefore bring both breakfast and lunch revenue/cost ratios closer to the break-even point. The methodology used in this study is more appropriate, however, for determining the average costs of meals in the NSLP and SBP.

Exhibit 9.11

Comparison of Mean Revenue as a Percentage of Cost

	SLBCS-I		Comparable SLBCS-II [a]	
Revenue/Cost Comparison	**Mean**	**Std Err of Estimate**	**Mean**	**Std Err of Estimate**
Total Revenue to Reported Cost	99.8%	(1.4%)	100.0%	(1.1%)
Reimbursable Meals	112.6	(2.8)	114.8	(4.0)
Nonreimbursable Meals	70.5	(4.5)	70.6	(6.8)
Reimbursable Lunches	NA	NA	115.5	(4.1)
Reimbursable Breakfasts	NA	NA	96.1	(6.1)

Notes:

[a] Comparable SLBCS-II estimates exclude unreported school meal labor that was not counted in SLBCS-I.

**Statistically significant difference at the 5 percent level (two-tailed test). Comparisons without asterisks (*) are not statistically significantly different at the 5 percent level.

APPENDICES

Contents

List of Exhibits

List of Exhibits

List of Exhibits

Appendix A

Sample Design

The primary objective of the sample design for the School Lunch and Breakfast Cost Study-II was to estimate the mean reported cost of producing a reimbursable meal with a 95 percent confidence interval of ±$.09 when the unit of analysis is the district weighted by the number of meals. The secondary objectives included estimating the mean full cost of producing reimbursable meals, and estimating mean meal costs separately for the following meal production system types:

- Independent (on-site) kitchen only;
- Base or central kitchens with satellites only;
- Other combination—mostly independent 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 the second form, districts with higher numbers of lunches and breakfasts have a proportionally greater weight in the calculation of the mean cost. This form is labeled in the report as "unit of analysis is meal".

To accomplish these objectives, a sample frame was chosen, and a national sample of SFAs was drawn. This sample was stratified by FNS region, poverty level, and meal production system. SFAs in the sample 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. Data from sample schools were weighted to produce SFA-level estimates and combined with other data 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, subgroup means by SFA size and poverty level, and estimated means for the four meal production systems categories shown above.

This appendix discusses the sample frame of SFAs, the planned sample sizes to meet the precision levels specified by FNS; and procedures for selecting the sample of SFAs and schools. Weighting of school-level and SFA-level data is described in Appendix B.

Sample Frame

In order to draw an efficient, nationally representative sample of SFAs for the study, and to permit rapid recruiting of sampled SFAs, the respondents to the USDA School Food Authority Characteristics Survey (SFACS) were selected as the sample frame. The SFACS had the following characteristics:

- The 2,150 SFACS respondents[1] constituted a nationally-representative sample of public SFAs, drawn from the 2001-2002 Common Core Data (CCD), a census of all public school districts compiled by the National Center for Education Statistics, U.S. Department of Education.
- The sample selected from the CCD for the SFACS was stratified by FNS region and poverty level. (Districts with 20 percent of children or more in poverty, based on 2000 Census data, were classified as high poverty.) Within strata, districts were sampled for the SFACS with probability proportional to size (with the square root of enrollment as the measure of size).
- The SFACS served as the sample frame for the School Nutrition Dietary Assessment-III study (SNDA-III).[2] Therefore, both studies represent the same population of SFAs.
- The SFACS data included SFA-level information on variables needed for sampling: size (enrollment and numbers of lunches and breakfasts), availability of the SBP, meal production system, and menu planning system.
- The SFACS had SFA director contact information.
- Through the CCD school district identifier, SFAs in the SFACS could be linked to the CCD sample frame of schools, as an aid to the sampling of schools within selected SFAs.

Sample Size

The sampling plan for SLBCS-II was designed to provide national estimates of the cost of producing reimbursable meals with a 95 percent confidence interval of ±$.09 when the unit of analysis is meals. If one had a *perfect measure* of the costs of a reimbursable lunch and a reimbursable breakfast for each SFA in the sample, and if the sample was selected using simple random sampling (SRS), a sample of 72 SFAs would be required to obtain the desired level of precision. Neither of these assumptions was valid in SLBCS-II. Thus, there were two design effects that increased the minimum number of SFAs required to achieve the desired level of precision:

$Deff_1$ = the design effect resulting from using a probability-proportional-to-size (PPS) sample to construct the sample frame

[1] The SFACS sampled 2,310 SFAs. The sample frame for SLBCS-II was the 2,150 SFAs (93%) that provided the information necessary for sampling.

[2] Further documentation on the sampling for the SFACS is provided in the School Nutrition Dietary Assessment Study III Final Report. (U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis, School Nutrition Dietary Assessment Study-III, by Anne Gordon, et al. Project Officer: Patricia McKinney. Alexandria, VA: 2007. United States Food and Department of Nutrition Agriculture Service November 2007 Special Nutrition Programs Report No. CN-07-SNDA-III).

$Deff_2$ = the design effect resulting from the imprecision of the individual SFA-level meal cost estimates

To obtain a national estimate of average meal cost with a 95 percent confidence interval of ±$.09 requires a minimum sample of $n = 72*Deff_1*Deff_2$.

$Deff_1$: Sampling With Probability Proportional to Size

The sample frame for the SLBCS-II was selected with probability proportional to size. While this ensures that the very large SFAs that account for a large proportion of the meals served in the NSLP and SBP are included in the sample, it also results in a design effect due to weighting. The greater the dispersion in the weights, the larger the design effect. For designing the SLBCS-II sample we assumed a design effect due to weighting ($Deff_1$) of 1.50, consistent with the estimated design effects due to weighting used in SNDA-III.[3]

$Deff_2$: Relative Precision of Individual SFA Meal Cost Estimates

The direct measurement approach developed in the Meal Cost Methodology (MCM) Study (Glantz, et al., 1992) and used in the SLBCS-I Study (Glantz, et al., 1994) involves sampling schools and reimbursable meals taken by students in these schools during a one-week period, the "target week." The number of reimbursable meals observed in an SFA determines the relative precision of the meal cost estimates for each individual SFA included in the sample. Exhibit A.1 indicates the required number of lunches and breakfasts that need to be observed at each SFA included in the sample by size class of SFA to achieve a 10 percent level of precision in the estimated average cost per meal.[4] Thus, the required number of sample schools for an SFA, also shown in the exhibit, is determined by the sample of meals and the number of meals that can be observed in a school during the target week. The MCM Study determined that it is feasible for a data collector to observe 1000 reimbursable lunches and 250 reimbursable breakfasts in a week at a sample school. This assumption was used in determining the required number of schools to obtain the required sample of meals. For SFAs with required samples of fewer than 1,000 lunches, only one school is required to obtain the sample for lunches; however, if the sample of breakfasts is more than 250, at least two schools must be sampled.

Using data from SLBCS-I we estimated that measuring individual SFA meal costs with a 10 percent level of precision introduces a design effect of 1.13. Thus, when individual SFA meal costs are estimated with a 10 percent level of precision, the total number of SFAs needed to obtain a 95 percent confidence interval of ±$.09 around national estimates of the average cost of a reimbursable lunch is $n = 72*1.50*1.13 = 122$.[5]

---

[3] U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis, School Nutrition Dietary Assessment Study-III, by Anne Gordon, et al. Project Officer: Patricia McKinney. Alexandria, VA: 2007. United States Food and Department of Nutrition Agriculture Service November 2007 Special Nutrition Programs Report No. CN-07-SNDA-III.

[4] The methodology for determining the sample size of meals to achieve a specified level of precision for individual SFAs was taken from the MCM study (Glantz et al., 1992).

[5] This design was determined to be more efficient than a higher level of precision at the SFA level, which would increase school-level data collection costs more than it would reduce SFA-level data collection costs.

Exhibit A.1

Recommended Sample Size of Schools at 10 Percent Level of Precision

Total Number of Reimbursable Meals During the Study Week	Lunch		Breakfast	
	Sample Size of Reimbursable Lunches	Number of Sample Schools	Sample Size of Reimbursable Breakfasts	Sample Size of Schools
50000+	3,889	4	1,042	5
20000-49999	3,764	4	1,033	5
15000-19999	3,398	4	1,033	5
10000-14999	3,153	4	981	4
9000-999	2,921	3	957	4
8000-8999	2,819	3	946	4
7000-7999	2,099	3	932	4
6000-6999	2,558	3	914	4
5000-5999	2,387	3	892	4
4000-4999	2,177	3	861	4
3000-3999	1,913	2	816	4
2000-2999	1,570	2	746	3
1000-1999	1,106	2	622	3
500-999	637	2	440	2
400-499	407	2	316	2
300-399	323	2	263	2
200-299	230	2	202	2
100-199	145	2	131	2
1-99	49	2	49	2

Note: The sample size of schools for an SFA is the greater of the sample of schools for lunch observations and the sample for breakfast observations, if the SBP is offered.

Selecting the Sample

The sample selection process for the School Lunch and Breakfast Cost Study II consisted of two major components. The first was the selection of a national probability sample of school districts. The second was the within-district sampling of schools for the direct measurement of food and production labor costs. Each component is discussed in turn.

Sample of School Districts (SFAs)

The 2,150 school districts included in the SFACS sample frame were sorted into three strata on the basis of meal production system: all independent (on-site) kitchens, mostly independent kitchens with some satellites, and all or mostly satellite kitchens. This third stratum was later disaggregated for analysis purposes into two groups of SFAs: those where all cafeterias had either base or satellite kitchens and those with a mix of independent, base, and satellite kitchens. This disaggregation could not be done prior to drawing the sample because the SFACS data did not differentiate between base and independent kitchens.

To allocate the sample among the meal production systems required trading off two research goals: to obtain national estimates, and to obtain estimates of differences in costs among the production systems in multivariate analysis. The first goal would be best served by proportional sampling, while the latter goal would be best served by equal numbers of SFAs in each group. We compromised between these two goals by sampling in proportion to the square root of the estimated population frequencies. Tabulation of SFACS data indicated that the population proportions were as follows:

All independent (on-site) kitchens (Stratum 1):	71.9 percent
Mostly independent kitchens, some satellites (Stratum 2):	12.1 percent
All or mostly satellite kitchens (Stratum 3):	16.0 percent

It will be recalled that the third group includes two categories of systems. A neutral assumption about the composition of the third group[6] yielded this distribution:

All independent (on-site) kitchens:	71.9 percent
Mostly independent kitchens, some satellites:	12.1 percent
All base kitchens or central kitchens with satellites:	11.8 percent
Mostly satellites, some independent kitchens:	4.2 percent

The square-root compromise described above yielded expected sample sizes as shown in Exhibit A.2. The table also shows the distribution of the final sample, after the selection and recruitment processes described below.

In order to obtain a final total of 122 districts recruited to participate in the cost study, we selected a stratified random sample of 203 SFAs, which included 122 target or primary districts and 81 backup districts. The sample frame was divided into five strata: certainty, all independent kitchens, mostly independent kitchens, all or mostly satellite, and unknown (SFAs that did not provide the production system for the SFACS). The SFCAS sample frame included 70 SFAs that were selected with

Exhibit A.2

SFA Sample: Expected and Actual Distribution by Production System

	Expected Sample Size	Actual Sample Size	Actual Percent	Weighted Count	Weighted Percent
Production System					
All independent kitchens	60	65	54%	8,865	71%
Mostly independent, some satellites	24	16	13	347	3
All base/central with satellites	24	21	18	2,308	18
Mostly satellites, some independent	14	18	15	1,047	8
Total	122	120	100%	12,568	100%

[6] The assumption is that of SFAs in which "most cafeterias or satellites serve pre-plated meals," half include independent kitchens and half do not. An additional fraction of SFAs—those in which "all cafeterias/satellites serve pre-plated meals"—unambiguously falls in the group without independent kitchens.

certainty. The 23 largest certainty districts in the SFACS sample (i.e., those with enrollment ≥100,000) were included with certainty in the SLBCS-II sample. Within each of the non-certainty strata, we sorted first between SFAs with and without the SBP, and then by the 2001 CCD enrollment. We then selected a systematic sample, with each SFA in a stratum having the same probability of selection. The backup sample was selected to match the stratification of the primary sample. However, we exhausted the backup sample within two of the strata during recruitment. In order to maintain the desired stratification, we selected an additional backup sample, that included 17 SFAs. All of the primary sample was released for recruitment; backup sample was released as needed. In total, 202 SFAs were released for recruitment.

Recruitment Process

Recruitment began with letters to the State Child Nutrition Directors notifying them of the SFAs selected in their States and asking for their support. Next, a letter was sent to each SFA director, followed by a telephone call to solicit his/her participation in the study. Once the SFA director agreed to participate, either the director or the Abt recruiter contacted the school district superintendent to obtain his/her cooperation. The superintendent was asked to sign a Memorandum of Understanding (MOU) that described the study and outlined what would be required of schools and school districts during the course of the project. SFAs that initially refused were assigned to senior staff for follow-up and, in a few cases, referred to FNS for assistance in recruitment. Districts were asked to provide a list of the schools in the district along with counts of reimbursable lunches served and other characteristics needed for sampling. Once all necessary information was obtained, a sample of schools was selected for the district. In the final step in the recruitment process, the Abt recruiter contacted the SFA director to provide him/her with the names of the sampled schools. The director was asked to inform the schools of their selection and to provide contact information for the school principal and kitchen manager.

Recruitment was ended on May 1, 2006, at which time the recruitment process was complete in 120 SFAs. In an additional three districts, the SFA director had agreed to participate in the study, but had not yet discussed the study with the superintendent. We determined that we could not allow any further time for recruitment; the remaining weeks in the school year needed to be devoted to data collection.

Disposition of Sampled SFAs

The primary sample included 23 SFAs sampled with certainty and 99 other SFAs. Of the first backup sample, 71 SFAs were released for recruitment. As noted above, in order to maintain the desired stratification, we selected a second backup sample; nine SFAs from the second backup sample were released for recruitment.

The final sample included 120 SFAs from 43 states. Twenty (20) of the 23 certainty districts agreed to participate. Eighty-one (81) SFAs refused to participate in the study and one was ineligible, which represents a cooperation rate of 60 percent. The cooperation rate was at the lower end of the expected range, in part because during the latter stages of recruitment, we allowed districts less time to complete recruitment than we had allowed in the earlier stages. Therefore, some districts treated as refusals might have eventually participated if we had allowed them additional time to consider participating.

Sample of Schools Within Districts

To draw the sample of schools, we required three pieces of information: the grade span, the number of lunches served in a representative week, and the type of kitchen found in the school's cafeteria. Information about grade span was obtained from the CCD, or if that was unavailable, the school's website. We obtained the number of lunches and type of kitchen through contacts with each SFA director. A school could have one of five types of kitchens:

- Independent kitchens—Schools with kitchens that prepared food at the same cafeteria in which it was served.
- Satellites of a central kitchen—Schools with kitchens that received food prepared at district-controlled central kitchens not attached to another school.
- Satellites of kitchens residing outside the school district—Schools with kitchens that received food prepared in places outside the control of the school district.
- Satellite kitchens—Schools with kitchens that received food prepared in a kitchen attached to another school within the district
- Base kitchens—Schools with kitchens that prepared food for its own cafeteria and cafeterias in other schools

To sample the schools, we first removed any schools that served only special education or juvenile delinquent populations. We then categorized the schools into three strata: Base kitchens, Satellites to base kitchens, and Other (independent, satellites of a central kitchen, satellites of kitchens residing outside the school district).

We sampled schools differently depending upon the stratum. Within the Independent and Satellite strata, we sorted the schools by grade span and then randomly within grade span. We selected a random starting point on the sorted list based upon the number of lunches served within a week, and selected a systematic sample with probability proportional to the number of lunches. The number of schools selected was based upon the total number of lunches served in a week in the school district as indicated in Exhibit A.1. For schools with base kitchens, if a school was selected in the satellite stratum, we also selected the school that was its base.

A total of 371 schools were sampled across the 120 SFAs. Thirteen (13) schools refused to participate in the study and two schools were ineligible. Replacements were selected for these schools, and the final school sample included 356 schools. During data collection, we discovered that two sampled schools shared a single cafeteria and therefore needed to be treated as one school. In addition, two schools withdrew from the study, and thus the final sample was 353 schools. One school was dropped from the analysis file due to irreconcilable data, leaving 352 schools with completed food and production labor cost data.

Appendix B

Weighting Methods

The analysis for the School Lunch and Breakfast Cost Study-II 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 or kitchen weight, which allowed for the calculation of SFA-level cost figures based on the data collected within the sample schools. 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.

School/Kitchen Weights

As described in Appendix A, schools and kitchens were sampled differently depending upon the stratum. Within the Independent and Satellite strata, schools were sampled with equal probability (after sorting by grade span to assure approximately proportional representation). For schools with base kitchens, if a school was selected in the satellite stratum, we also selected the school that was its base. Therefore, the selection probability for the base was the sum of the probabilities for its satellites. Weights for schools were computed based on their selection probabilities, with adjustments for nonresponse, and then calibrated so the weighted sum of lunches of sampled schools within a district equaled the total reported lunches for that district.

We computed weights for the participating schools using the following variables:

n	Number of schools sampled
nr	Number of schools responded
N	Number of schools in the population
lun	Number of lunches served in a week
brk	Number of breakfasts served in a week
P_Sel_S	The probability of a school being selected
Base_S_Wgt	The base school weight, or reciprocal of PR_Sel_S
NRA_S	A non-response adjustment for schools (here, all of the non-responses were refusals and were replaced)
B_NRA_S_Wgt	The base school weight times the non-response adjustment for schools
Calib_S_Wgt_lun	The non-response adjusted school weight calibrated to the total reported lunches for that district
Calib_S_Wgt_lun	The non-response adjusted school weight calibrated to the total reported breakfasts for that district

The formulas below use the following subscripts:

d	District
s	School
t	Stratum, where stratum can be Independent (I), Satellite (T), or Base (B)

For Independent and Satellite strata, the weights were computed as follows:

$$P\_Sel\_S_{d,t,s} = \frac{lun_{d,t,s}}{\sum_{s=1}^{N} lun_{d,t,s}} \times n_{d,t}$$

$$Base\_S\_Wgt_{d,t,s} = \frac{1}{P\_Sel\_S_{d,t,s}}$$

$$NRA\_S_{d,t} = \frac{n_{d,t}}{nr_{d,t}}$$

$$B\_NRA\_S\_Wgt_{d,t,s} = Base\_S\_Wgt_{d,t,s} \times NRA\_S_{d,t}$$

$$Calib\_S\_Wgt\_lun_{d,t,s} = B\_NRA\_S\_Wgt_{d,t,s} \times \frac{\text{Reported } lun_d}{\sum_{s=1}^{N} lun_{d,t,s} \times B\_NRA\_S\_Wgt_{d,t,s}}$$

$$Calib\_S\_Wgt\_brk_{d,t,s} = B\_NRA\_S\_Wgt_{d,t,s} \times \frac{\text{Reported } brk_d}{\sum_{s=1}^{N} brk_{d,t,s} \times B\_NRA\_S\_Wgt_{d,t,s}}$$

For the Base stratum, the weights were computed as follows:

$$P\_Sel\_S_{d,B,s} = \frac{\sum_{s=1}^{N_B} lun_{d,T_B,s}}{\sum_{s=1}^{N_T} lun_{d,T,s}} \times n_{d,T}$$

$$Base\_S\_Wgt_{d,B,s} = \frac{1}{P\_Sel\_S_{d,B,s}}$$

$NRA\_S_{d,t} = 1$ ← This is due to no base kitchen refusing the survey

$$B\_NRA\_S\_Wgt_{d,B,s} = Base\_S\_Wgt_{d,B,s} \times NRA\_S_{d,B}$$

$$Calib\_S\_Wgt\_lun_{d,t,s} = B\_NRA\_S\_Wgt_{d,t,s} \times \frac{\text{Reported } lun_d}{\sum_{s=1}^{N} lun_{d,t,s} \times B\_NRA\_S\_Wgt_{d,t,s}}$$

$$Calib\_S\_Wgt\_brk_{d,t,s} = B\_NRA\_S\_Wgt_{d,t,s} \times \frac{\text{Reported } brk_d}{\sum_{s=1}^{N} brk_{d,t,s} \times B\_NRA\_S\_Wgt_{d,t,s}}$$

Computation of SFA Weights

We began with a sample frame that included all SFAs responding to the fax/telephone SFACS survey. We stratified the 2,056 SFAs in the sample frame into one certainty and four meal production strata, determined from the SFACS survey:

- SFAs with a 2001 enrollment of 100,000 or more were selected with certainty
- SFAs where all of the schools had independent (on-site) cafeterias
- SFAs where most of the schools had independent (on-site) cafeterias
- SFAs where most of the school cafeterias were served by off-site kitchens
- SFAs whose meal production system was unknown.

During recruitment of SFAs for the meal cost study we inadvertently recruited an SFA that was not selected, Tuscaloosa City, Alabama. Due to their willingness to participate, we included them in the study. To preserve the integrity of the sampling plan we placed it into its own stratum.

For sampling, within each stratum we first sorted the list of SFAs by participation in the NSLP and SBP and participation in the NSLP only. Then we sorted the list by enrollment size and selected an equal probability systematic sample using the SAS v9 procedure PROC SURVEYSELECT. Table B.1 reports, by stratum, the number of SFAs in the sample frame, the number of SFAs we sampled, and the number that ultimately agreed to participate in the study.

Exhibit B.1

SFA Population, Sample Sizes, and Computed Weights

Stratum	SFAs in Frame	SFAs Sampled	SFAs Responded	Base SFA Weight	Non-response Adjustment	Final SFA Weight
Certainty	23	23	20	1	1.2	1.2
All independent (on-site) cafeterias	1,046	66	34	15.8	1.9	30.8
Mostly independent (on-site) cafeterias	341	45	30	7.6	1.5	11.4
Mostly/all off-site	306	36	16	8.5	2.3	19.1
Unknown meal production	340	48	19	7.1	2.5	17.9
Tuscaloosa City	1	1	1	1	1	1

We then computed weights for participating SFAs using the following variables:

n_SFA	Number of SFAs sampled for the meal cost sample
nr_SFA	Number of SFAs responded for the meal cost sample
N_SFA	Number of SFAs in the sample frame (the fax/telephone SFACS survey responders)
Base_SFA_Wgt_MC	The base SFA weight for the meal cost sample
NRA_SFA_MC	A non-response adjustment for SFAs (here, all of the non-responses were refusals and were replaced)

*Final_SFA_Wgt_M*C The final SFA weight for the meal cost sample of the fax/telephone SFACS survey responders

For each stratum *tSFA*, the weights are computed as below, and are reported in Table B.1.

$$Base\_SFA\_Wgt\_MC_{tSFA} = \frac{N\_SFA_{tSFA}}{n\_SFA_{tSFA}}$$

$$NRA\_SFA\_MC_{tSFA} = \frac{n\_SFA_{tSFA}}{nr\_SFA_{tSFA}}$$

$$Final\_SFA\_Wgt\_MC_{sSFA} = Base\_SFA\_Wgt\_MC_{sSFA} \times NRA\_SFA\_MC_{tSFA}$$

Combining Meal Cost School and SFA Weights with Weights from SFACS

Because our sample from for the meal cost study began with those SFAs that responded to the fax/telephone SFACS survey, we use the final weight for that survey. Define that weight as *SFACS_FaxTele_Wgt*. Then the ultimate SFA weight *Final_SFA_Wgt* for each meal cost study SFA d is defined as:

$$Final\_SFA\_Wgt_d = SFACS\_FaxTele\_Wgt_d \times Final\_SFA\_Wgt\_MC_d$$

The weight *Final_SFA_Wgt* was used for any analyses weighting the meal cost sample to the nation. One note: the Tuscaloosa City, Alabama SFA did not appear in the SFACS study. We placed it into its own SFACS stratum with *SFACS_FaxTele_Wgt* = 1, and adjusted all of the other *SFACS_FaxTele_Wgt* weights by

$$\frac{\left(\sum_d SFACS\_FaxTele\_Wgt_d\right) - 1}{\sum_d SFACS\_FaxTele\_Wgt_d}.$$

Appendix C

Multivariate Analyses

This appendix presents results from four multivariate analyses. The results of two of these analyses were discussed in Chapter Eight: a model that relates total reported reimbursable costs to meal counts and other SFA characteristics measured in the USDA SFA Characteristics Study (SFACS), in order to obtain indirect estimates of the average cost of a breakfast and the average cost of a lunch; and a model that relates the discrepancies between the *directly measured* costs of breakfasts and lunches and the predicted costs from the models to those same SFA characteristics. Refer to Chapter Eight for the interpretations of the results of these two analyses.

In addition, this appendix presents models that relate directly measured reported and full costs per meal to SFA characteristics.

Multivariate Models of Total Reimbursable Costs

The original indirect estimates were derived by St. Pierre *et al*. from an econometric model that related total costs incurred by SFAs to numbers of breakfasts and lunches produced, à la carte sales, and assorted quadratic terms.

This simple approach was found to be insufficient for the SFACS sample. Instead, we assumed that the cost of producing a breakfast is a fixed fraction of the cost of producing a lunch, while both of these costs vary (proportionately) with SFA characteristics. To determine reimbursable meal costs we assumed a markup rate for nonreimbursable meals of 4.38 percent, based on previous SFACS analysis, and therefore subtracted 95.8 percent (=1/1.0438) of the reported costs of nonreimbursable meals from total reported reimbursable costs.

The model to be estimated was thus:

$$\text{Reimbursable costs} = \exp(Xb) \times (n\_lunch + \omega\, n\_break)$$

where reimbursable costs are total costs less 0.958 × *à la carte* and other nonreimbursable sales,
n_lunch and n_break are numbers of lunches and breakfasts served, and
X is a vector of SFA characteristics.

The factor of proportionality, exp (Xb), allows various controllable and uncontrollable factors (e.g., urban location) to shift the costs by a given percent.

The model was estimated using SAS PROC NLIN, in log form. That is, the log of reimbursable costs was regressed on a set of X's and the log of (n_lunch + ω n_break),

SFA characteristics that were entered in the model included:

- Census data: region, MSA status, child poverty

- Other factors taken as given by the SFA: wage of food service worker, presence of secondary schools
- Factors under the control of the SFA: use of a food service management company (FSMC), existence of a snack program, Provision 2 or 3 schools, meal production method, menu planning method.

After deletion of SFAs with missing or implausible data on total costs or meal counts, the sample size for estimating the model was 1431. The data were weighted for probability of sample selection, but not for heteroskedasticity.[7] To refine the model and obtain the most precise estimate of the crucial parameter ω., indicators of mutually exclusive, collectively exhaustive categories (such as region) were grouped together, and variables with missing data were grouped together with their corresponding missing data indicators. Variables were then dropped from the model if the standard errors for all members of their group exceeded the corresponding coefficients. The variables that were dropped for this reason were the measures of child poverty, food service worker wages, the presence of secondary schools, use of an FSMC, meal production method, and presence of a snack program. This model refinement made only trivial differences in the parameter estimates. The results of the process are displayed in Exhibit C.1.

Exhibit C.1

Multivariate Model of Total Reimbursable Reported Costs

	Coefficient	Standard Error
Regional intercept		
Mid-Atlantic	0.8230	0.0501
Midwest	0.7820	0.0457
Mountain-Plains	0.7466	0.0509
Northeast	0.6704	0.0506
Southeast	0.7857	0.0579
Southwest	0.7688	0.0546
Western	0.8795	0.0510
MSA status (relative to central city)		
Other MSA	0.0634	0.0412
Non MSA	0.0931*	0.0403
Provision 2 or 3 schools (relative to none)		
Some or all	-0.0480	0.0353
Missing	0.0158	0.0905
Menu planning method (relative to traditional/other/mixed)		
NSMP	0.0258	0.0283
EFBMP	-0.0333	0.0252
Missing	-0.1071	0.0699
Omega (cost of breakfast relative to lunch)	0.5804*	0.0691
Sample size	1431	

Note:

Statistically significant at $p < 0.05$ level.

[7] These two rationales for weighting would have yielded different weighting structures. Exploration of the residual variance indicated that heteroskedasticity with respect to SFA size (number of lunches served annually) was not a concern.

Discrepancies Between Direct and Indirect Measures of Reported Costs

The model described above predicted values for the cost of a breakfast and the cost of a lunch for each of the 1431 SFAs in the sample. These included 95 SFAs for which directly measured reported costs for lunches were also available, 92 of which also had a breakfast program. On average, the predicted cost of the average lunch in an SFA was $0.18 more than the directly measured cost, while the predicted cost of the average breakfast was $0.48 less than the directly measured cost. Models of the difference between predicted and measured costs were estimated using PROC SURVEYREG, to take account of the stratification in the SBLCS-II sample design as well as the sample weights. The results are shown in Exhibit C.2 below.

Variations in Directly Measured Reported and Full Costs

Variations across SFAs in the direct measures of the costs of lunches and breakfasts were related to variations in SFA characteristics, the log of the number of lunches or breakfasts served, and (in the lunch cost analysis) the presence of a breakfast program. PROC SURVEYREG was used to take account of the sample stratification and weights. Analyses were performed of both reported and full costs (Exhibits C.3 and C.4). In none of the analyses was any of the SFA characteristics found to have a significant effect at the conventional 0.05 level, with the exception of a few regional indicators (relative to the Western region, reported costs of lunches were significantly lower in the Midwest and Mountain-Plains regions, and full costs of lunches were significantly lower in the Midwest, Mountain-Plains, and Southwest regions).[8]

The order of the regional effects varied across the models. The difference between the highest and lowest cost regions, holding other factors constant, was $0.87 for the reported cost of breakfast (Mid-Atlantic compared to Southwest); $0.72 for reported cost of lunch (Mid-Atlantic compared to Midwest); $1.00 for full cost of breakfast (Mountain-Plains compared to Southwest); and $0.94 for full cost of lunch (Northeast compared to Midwest). It should be noted that these models take no account of the quality of meals as affecting variation in costs, as the scope of the study did not include analysis of the content of meals.

[8] While several missing data indicators, included in the models to avoid bias, had statistically significant coefficients, these do not represent meaningful effects.

Exhibit C.2

Multivariate Models of Difference Between Directly Measured Reported Costs and Predicted Reported Cost from Indirect Measurement Model

	Cost of Breakfast		Cost of Lunch	
	Coefficient	Standard Error	Coefficient	Standard Error
Intercept	-0.8780	1.4321	–0.9577	0.8103
Region (relative to Western)				
Mid-Atlantic	–0.6420	0.6471	–0.8249	0.6087
Midwest	0.1643	0.6157	0.3852	0.2849
Mountain-Plains	–0.8212	0.8485	0.4821	0.2560
Northeast	–1.1786	0.7549	–0.7471	0.6111
Southeast	0.1613	0.5474	–0.1179	0.4490
Southwest	0.6253	0.5770	0.4354	0.2990
Child poverty < 30%	–0.1593	0.3511	0.0565	0.3699
MSA status (relative to central city)				
Other MSA	0.1199	0.3799	0.0868	0.3325
Non MSA	0.3015	0.3792	–0.0454	0.2884
Wage of food service workers				
Average wage	0.0773	0.1206	0.1055	0.0631
Missing	0.8205	1.1773	0.9559	0.6837
SFA serves only elementary schools				
Yes	1.4343	0.7531	–0.2828	0.2972
Missing	–1.6991	1.0591	1.1449	0.5876
Use Food Service Management Company	–0.1217	0.4475	0.2146	0.1954
Any Provision 2 or 3 schools	0.3865	0.3389	–0.4688	0.3357
Snack program (relative to none)				
Present	0.4463	0.2484	0.5008*	0.1900
Missing	0.1340	0.7525	–0.0287	0.6805
Meal preparation in school cafeterias (relative to mixed)				
All food served is prepared on site	–0.5167	0.3103	–0.0232	0.1749
All food served is prepared off site	0.6800	0.5194	–0.4390	0.2660
Missing	0.2048	1.0453	0.9885	0.7753
Menu planning method (relative to traditional/other/mixed)				
NSMP	0.2731	0.2889	–0.0790	0.1590
EFBMP	–0.3194	0.6555	–0.1337	0.2028
Missing	0.1722	0.9395	–0.4855	0.6842
Weighted mean of dependent variable	–$0.48		+$0.18	
Minimum	+$3.83		$2.00	
Maximimum	+$0.82		+$1.46	
R-squared	0.4243		0.4225	
Sample size	92		95	

Note:

* Statistically significant at 0.05 level.

Exhibit C.3

Multivariate Models of Reported Costs of Breakfasts and Lunches

	Cost of Breakfast		Cost of Lunch	
	Coefficient	Standard Error	Coefficient	Standard Error
Intercept	4.7462	2.6742	5.0364	1.0191
Region (relative to Western)				
Mid-Atlantic	0.8010	0.6203	0.0516	0.3363
Midwest	0.1216	0.5869	–0.6674*	0.2687
Mountain-Plains	0.5979	0.6816	–0.5936*	0.2750
Northeast	0.5385	0.6938	0.0327	0.5135
Southeast	0.4952	0.6098	0.0494	0.5326
Southwest	–0.0649	0.6407	–0.4264	0.3181
Child poverty < 30%	0.1949	0.2696	0.1275	0.2601
MSA status (relative to central city)				
Other MSA	–0.1769	0.4362	0.0247	0.2445
Non MSA	–0.3031	0.4005	0.1141	0.2706
Wage of food service workers	–0.0032	0.0698	0.0200	0.0407
SFA serves only elementary schools	0.1025	0.5254	0.0519	0.3228
Use Food Service Management Company	–0.2883	0.4395	–0.2201	0.3887
Snack program (relative to none)				
Present	–0.0635	0.2292	–0.0196	0.2084
Missing	2.2805*	0.8511	–0.6244	0.4003
Provision 2 or 3 schools (relative to none)				
Some or all	–0.1437	0.2855	0.1542	0.2017
Missing	0.6047	0.5857	–0.3167	0.3566
Meal preparation in school cafeterias (relative to mixed)				
All food served is prepared on site	–0.3328	0.2263	–0.0799	0.2090
All food served is prepared centrally	–0.5367	0.4409	–0.3570	0.3345
Menu planning method (relative to traditional/other/mixed)				
NSMP	0.0595	0.2594	0.1403	0.1834
EFBMP	–0.0409	0.3172	0.1564	0.1648
Missing	–0.0136	0.3988	–0.5923	0.3969
Log (# of breakfasts)	–0.2645	0.1704		
Have breakfast program			–1.1184	0.6354
Log (# of lunches)			–0.1375	0.1104
Weighted mean of dependent variable	1.92		2.36	
R-squared	0.4246		0.4107	
Sample size	116		120	

Note:

* Statistically significant at 0.05 level.

Exhibit C.4

Multivariate Models of Full Costs of Breakfasts and Lunches

	Cost of Breakfast		Cost of Lunch	
	Coefficient	Standard Error	Coefficient	Standard Error
Intercept	6.4264	3.1136	6.1396	1.0862
Region (relative to Western)				
Mid-Atlantic	0.6799	0.6638	-0.2982	0.3125
Midwest	0.1254	0.6475	-0.8602*	0.2652
Mountain-Plains	0.7673	0.7149	-0.6798*	0.3050
Northeast	0.5714	0.6805	0.0790	0.4959
Southeast	0.2443	0.6220	-0.3862	0.4370
Southwest	-0.2317	0.6944	-0.7759*	0.3383
Child poverty < 30%	0.0656	0.2425	-0.1637	0.2265
MSA status (relative to central city)				
Other MSA	-0.4415	0.4787	-0.0283	0.2549
Non MSA	-0.5465	0.4494	0.0506	0.2962
Wage of food service workers	-0.0237	0.0751	0.0345	0.0375
SFA serves only elementary schools	0.1828	0.5821	0.2060	0.3454
Use Food Service Management Company	-0.3279	0.4338	-0.1470	0.3747
Snack program (relative to none)				
Present	-0.1072	0.2377	-0.0215	0.1817
Missing	3.1806*	1.0001	-1.1064*	0.4204
Provision 2 or 3 schools (relative to none)				
Some or all	-0.2139	0.3167	0.1337	0.2106
Missing	1.7480*	0.6464	-0.5992	0.3691
Meal preparation in school cafeterias (relative to mixed)				
All food served is prepared on site	-0.1766	0.2491	0.1367	0.2312
All food served is prepared centrally	-0.6575	0.4785	-0.1615	0.3760
Menu planning method (relative to traditional/other/mixed)				
NSMP	-0.0615	0.2813	-0.0179	0.2210
EFBMP	0.1390	0.3586	0.2677	0.1758
Missing	0.3180	0.3970	-0.6575*	0.3314
Log (# of breakfasts)	-0.3295	0.2053		
Have breakfast program			-1.3394	0.7329
Log (# of lunches)			-0.1473	0.1085
Weighted mean of dependent variable	2.50		2.91	
R-squared	0.5557		0.4816	
Sample size	116		120	

Note:

* Statistically significant at 0.05 level.

Appendix D

Supplementary Tables

- SFA Characteristics
- Reported Cost
- Full Cost
- Revenues
- Revenue and Cost Comparisons

SFA Characteristics

Exhibit D.1

Characteristics of Sampled SFAs by Size

	SFA Size			
	Small (1-999)	**Medium (1,000-4,999)**	**Large (5,000+)**	**Total**
Poverty Status				
Less than 60% of lunches are free/reduced price	79.6 (6.2)	69.3 (4.9)	75.3 (3.1)	74.7 (5.9)
60% or more of lunches are free/reduced price	20.4 (4.7)	30.7 (4.1)	24.7 (1.3)	25.3 (5.9)
Production System				
On-Site kitchen only	77.5 (6.2)	66.6 (5.4)	63.3 (2.9)	70.5 (4.5)
Base/Central only	22.5 (4.1)	17.9 (3.1)	10.2 (0.8)	18.4 (4.7)
Mostly on-site kitchen	0.0 (0.0)	4.0 (1.2)	6.4 (0.5)	2.8 (1.4)
Mostly satellite	0.0 (0.0)	11.5 (1.8)	20.2 (1.3)	8.3 (2.3)
à la Carte Revenues				
<10 % of Total Revenue	69.4*** (7.2)	22.1 (4.0)	23.9 (1.7)	40.5 (7.0)
≥10% of Total Revenue	30.6 (5.9)	77.9 (5.5)	76.2 (3.2)	59.5 (7.0)
Foodservice Management Company				
Yes	0.0** (0.0)	17.7 (3.1)	8.7 (0.8)	8.7 (3.2)
No	100.0 (6.6)	82.3 (5.6)	91.4 (3.4)	91.4 (3.2)

Notes:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Reported Cost

Exhibit D.2

Reported Cost per Reimbursable Lunch: Distribution of SFAs

Reported Cost per Reimbursable Lunch	Percent of SFAs	Percent of Lunches	Total SFAs (weighted)
$0.00 - <1.40	2.9%	2.8%	358
$1.40 - <1.60	2.3	2.6	294
$1.60 - <1.80	5.6	4.7	701
$1.80 - <2.00	17.6	13.8	2,214
$2.00 - <2.20	13.7	14.5	1,716
$2.20 - <2.40	26.8	26.5	3,364
$2.40 - <2.60	11.8	17.9	1,485
$2.60 - <2.80	5.7	11.4	713
$2.80 - <3.00	1.0	1.2	121
$3.00 or more	12.7	4.7	1602
Total All SFAs	100.0%	100.0%	12,568
Mean	$2.36	$2.28	
Std Err of Mean	$0.09	$0.04	
25th Percentile	$2.00	$2.01	
Median	$2.22	$2.28	
75th Percentile	$2.43	$2.49	
Minimum	$0.73	$0.73	
Maximum	$4.92	$4.92	
Percent below assigned reimbursement rate	78.1%	75.6%	
Percent below lower reimbursement rate	78.1%	75.6%	
Percent below higher reimbursement rate	78.3%	77.8%	
(Unweighted N)			(120)

Exhibit D.3

Reported Cost per Reimbursable Breakfast: Distribution of SFAs

Reported Cost per Reimbursable Breakfast	Percent of SFAs	Percent of Breakfasts	Total SFAs (weighted)[a]
$0.00 - <1.00	10.5%	13.1%	1,242
$1.00 - <1.20	12.5	31.0	1,473
$1.20 - <1.40	18.1	14.0	2,130
$1.40 - <1.60	6.3	5.3	741
$1.60 - <1.80	7.3	11.2	864
$1.80 - <2.00	16.7	12.6	1,965
$2.00 - <2.20	11.0	6.5	1,292
$2.20 or more	17.6	6.4	2,075
Total All SFAs	100.0%	100.0%	11,783
Mean	$1.92	$1.46	
Std Err of Mean	$0.18	$0.06	
25th Percentile	$1.24	$1.02	
Median	$1.65	$1.27	
75th Percentile	$2.05	$1.82	
Minimum	$0.63	$0.63	
Maximum	$5.30	$5.30	
Percent below assigned reimbursement rate	35.7%	57.9%	
Percent below regular reimbursement rate	30.0%	50.9%	
Percent below severe need reimbursement rate	43.1%	61.4%	
(Unweighted N)[a]			(116)

Notes:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit D.4

Reported Cost per Reimbursable Meal by Meal Production System

Reported Cost per Reimbursable Lunch

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	$2.33	$2.21	$0.10	$2.25	$2.28	$0.06	8,865	65
Base/Central only	$2.45	$2.28	$0.12	$2.42	$2.48	$0.10	2,308	21
Mostly on-site kitchen	$2.30	$2.32	$0.00	$2.29	$2.44	$0.06	347	16
Mostly satellite	$2.48	$2.33	$0.10	$2.23	$2.20	$0.07	1,047	18

Reported Cost per Reimbursable Breakfast

	Unit of Analysis is SFA			Unit of Analysis is Reimbursable Breakfast			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	$1.94†	$1.57	$0.23	$1.46	$1.24	$0.08	8,694	64
Base/Central only	$2.10	$2.05	$0.11	$1.64	$1.56	$0.13	1,814	19
Mostly on-site kitchen	$1.38	$1.13	$0.01	$1.41	$1.23	$0.05	347	16
Mostly satellite	$1.62	$1.76	$0.05	$1.34	$1.36	$0.03	928	17

Notes:

[a] Excludes 4 SFAs without breakfast programs.

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.5

Composition of Foodservice Reported Costs by Meal Production System

	Percent of SFA Reported Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System											
On-Site kitchen only	45.9%	45.0%	1.5%	44.0%	44.8%	1.2%	10.0%	8.2%	1.2%	8,865	65
Base/Central only	45.7	44.6	2.7	46.1	48.1	1.9	8.3	8.1	1.4	2,308	21
Mostly on-site kitchen	42.8	43.1	0.0	42.4	39.0	0.1	14.8	17.9	0.0	347	16
Mostly satellite	44.1	42.9	0.4	45.1	46.8	1.8	10.8	8.1	2.0	1,047	18

Note:

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.6

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

Donated Commodities as a Percentage of Total Food Cost	Percent of SFAs
0% - < 10%	37.0%
10% - < 15%	40.5
15% - < 20%	12.7
20% - < 25%	4.5
25% or more	5.3
Total All SFAs	100.0%
Mean	12.0%
Median	11.3%
Std Err of Mean	0.9%
Weighted N	12,321
(Unweighted N)[a]	113

Notes:

[a] Excludes 7 SFAs that did not use donated commodities.

Exhibit D.7

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

Percentage of Cost Attributable to Reimbursable Meals	Percent of SFAs	
	Breakfast	Lunch
0% - < 50%	3.8%	3.0%
50% - < 60%	0.0	7.2
60% - < 70%	3.0	18.9
70% - < 80%	3.9	34.1
80% - < 90%	45.3	23.2
90% - 100%	43.9	13.6
Total All SFAs	100.0%	100.0%
Mean	85.7%	75.5%
Median	89.1%	75.4%
Std Err of Mean	2.3%	1.5%
Weighted N	11,783	12,568
(Unweighted N)	(116)[a]	(120)

Notes:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit D.8

Reported Cost Components of Reimbursable Lunches, Overall and by Subgroup: SFA as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$1.09	$1.00	$0.04	$1.05	$0.96	$0.05	$0.23	$0.18	$0.03	12,568	120
Poverty Status											
Less than 60% of lunches are free/reduced price	$1.12	$1.05	$0.05	$1.05	$0.96	$0.05	$0.19	$0.15	$0.03	9,388	84
60% or more of lunches are free/reduced price	$1.00	$0.96	$0.06	$1.06	$0.96	$0.12	$0.33	$0.31	$0.07	3,180	36
SFA Size											
Small (1-999)	$1.15	$1.05	$0.04	$1.13	$0.95	$0.04	$0.19	$0.09	$0.04	5,238	16
Medium (1,000-4,999)	$1.06	$0.96	$0.05	$0.96	$0.89	$0.05	$0.25	$0.22	$0.03	4,995	37
Large (5,000+)	$1.00	$0.99	$0.04	$1.06	$1.03	$0.04	$0.26	$0.24	$0.02	2,336	67
à la Carte Revenues[a]											
<10 % of Total Revenue	$1.16	$1.05	$0.03	$1.05	$0.96	$0.01	$0.14**	$0.04	$0.05	3,807	28
≥10% of Total Revenue	$1.09	$0.95	$0.07	$1.11	$0.99	$0.09	$0.32	$0.24	$0.05	5,594	65
Production System											
On-Site kitchen only	$1.07†	$0.99	$0.04	$1.03	$0.95	$0.05	$0.23	$0.17	$0.04	8,865	65
Base/Central only	$1.17	$0.94	$0.13	$1.09	$1.04	$0.03	$0.19	$0.22	$0.04	2,308	21
Mostly on-site kitchen	$0.96	$0.96	$0.00	$1.00	$0.95	$0.00	$0.34	$0.42	$0.00	347	16
Mostly satellite	$1.10	$1.04	$0.04	$1.13	$1.02	$0.04	$0.25	$0.27	$0.05	1,047	18

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.9

Reported Cost Components of Reimbursable Lunches, Overall and by Subgroup: Meal as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$0.98	$0.96	$0.02	$1.04	$1.02	$0.03	$0.25	$0.24	$0.02	12,568	120
Poverty Status											
Less than 60% of lunches are free/reduced price	$1.00	$0.95	$0.02	$1.02	$1.01	$0.03	$0.25	$0.24	$0.02	9,388	84
60% or more of lunches are free/reduced price	$0.95	$0.96	$0.03	$1.08	$1.04	$0.02	$0.26	$0.24	$0.01	3,180	36
SFA Size											
Small (1-999)	$1.12	$1.05	$0.04	$1.09†	$0.95	$0.05	$0.18	$0.10	$0.04	5,238	16
Medium (1,000-4,999)	$1.01	$0.96	$0.04	$0.93	$0.88	$0.04	$0.23	$0.19	$0.02	4,995	37
Large (5,000+)	$0.96	$0.97	$0.03	$1.08	$1.06	$0.03	$0.27	$0.26	$0.02	2,336	67
á la Carte Revenues[a]											
<10 % of Total Revenue	$1.00	$0.97	$0.03	$1.09	$1.07	$0.02	$0.28	$0.26	$0.01	3,807	28
≥10% of Total Revenue	$0.94	$0.88	$0.03	$1.04	$0.98	$0.05	$0.27	$0.24	$0.02	5,594	65
Production System											
On-Site kitchen only	$0.99	$0.94	$0.03	$1.02	$1.01	$0.03	$0.25	$0.24	$0.02	8,865	65
Base/Central only	$1.05	$1.07	$0.06	$1.07	$1.00	$0.08	$0.30	$0.26	$0.05	2,308	21
Mostly on-site kitchen	$0.86	$0.92	$0.05	$1.11	$1.18	$0.02	$0.32	$0.24	$0.02	347	16
Mostly satellite	$1.01	$1.03	$0.03	$1.05	$1.02	$0.03	$0.17	$0.16	$0.04	1,047	18

Notes:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.10

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

Reported Cost Per Reimbursable Lunch	Percent of SFAs	
	Food	Labor
$0.00 - < $0.60	0.6%	6.2%
$0.60 - < $0.70	3.5	7.5
$0.70 - < $0.80	12.4	7.7
$0.80 - < $0.90	10.3	16.4
$0.90 - < $1.00	24.0	18.8
$1.00 - < $1.10	12.8	13.4
$1.10 - < $1.20	11.3	7.5
$1.20 - < $1.30	9.3	5.6
$1.30 - < $1.40	0.0	4.8
$1.40 - < $1.50	7.3	2.1
$1.50 or more	8.6	10.1
Total All SFAs	100.0%	100.0%
Mean	$1.09	$1.05
Median	$1.00	$0.96
Std Err of Mean	$0.04	$0.05
Weighted N	12,568	12,568
(Unweighted N)	(120)	(120)

Exhibit D.11

Reported Cost Components of Reimbursable Breakfasts, Overall and by Subgroup: SFA as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$0.73	$0.67	$0.03	$1.02	$0.81	$0.16	$0.17	$0.14	$0.02	11,783	116
Poverty Status											
Less than 60% of lunches are free/reduced price	$0.75	$0.71	$0.04	$1.13*	$0.86	$0.22	$0.15	$0.12	$0.02	8,603	80
60% or more of lunches are free/reduced price	$0.68	$0.65	$0.06	$0.70	$0.76	$0.07	$0.23	$0.14	$0.05	3,180	36
SFA Size											
Small (1-999)	$0.78	$0.77	$0.04	$1.45††	$0.86	$0.39	$0.16	$0.10	$0.04	4,743	14
Medium (1,000-4,999)	$0.67	$0.66	$0.03	$0.64	$0.47	$0.04	$0.17	$0.14	$0.02	4,704	35
Large (5,000+)	$0.78	$0.71	$0.09	$0.90	$0.70	$0.08	$0.20	$0.19	$0.02	2,336	67
à la Carte Revenues											
<10 % of Total Revenue	$0.77	$0.88	$0.04	$1.47	$0.86	$0.49	$0.12**	$0.10	$0.04	3,480	27
≥10% of Total Revenue	$0.76	$0.68	$0.05	$0.86	$0.79	$0.08	$0.24	$0.18	$0.03	5,303	63
Production System											
On-Site kitchen only	$0.73	$0.65	$0.04	$1.05††	$0.81	$0.22	$0.16	$0.12	$0.03	8,694	64
Base/Central only	$0.80	$0.67	$0.05	$1.08	$1.03	$0.04	$0.22	$0.18	$0.02	1,814	19
Mostly on-site kitchen	$0.65	$0.52	$0.00	$0.54	$0.52	$0.00	$0.19	$0.18	$0.00	347	16
Mostly satellite	$0.66	$0.69	$0.03	$0.78	$0.79	$0.05	$0.18	$0.14	$0.04	928	17

Notes:

[a] Excludes 4 SFAs without breakfast programs; an additional 26 SFAs for which student payments for reimbursable meals could not be separated from à la carte payments are excluded from the breakdown by à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.12

Reported Cost Components of Reimbursable Breakfasts, Overall and by Subgroup: Meal as Unit of Analysis

	Food Costs			Labor Costs			Other Costs			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$0.65	$0.61	$0.02	$0.64	$0.59	$0.04	$0.17	$0.14	$0.01	11,783	116
Poverty Status											
Less than 60% of lunches are free/reduced price	$0.67	$0.63	$0.03	$0.72**	$0.60	$0.05	$0.18	$0.15	$0.02	8,603	80
60% or more of lunches are free/reduced price	$0.64	$0.60	$0.02	$0.54	$0.41	$0.04	$0.16	$0.14	$0.01	3,180	36
SFA Size											
Small (1-999)	$0.82	$0.80	$0.04	$1.13†††	$0.86	$0.16	$0.22	$0.12	$0.04	4,743	14
Medium (1,000-4,999)	$0.66	$0.60	$0.05	$0.51	$0.44	$0.04	$0.13	$0.12	$0.01	4,704	35
Large (5,000+)	$0.64	$0.62	$0.02	$0.66	$0.60	$0.05	$0.18	$0.15	$0.02	2,336	67
à la Carte Revenues											
<10 % of Total Revenue	$0.64	$0.55	$0.03	$0.56*	$0.52	$0.05	$0.16	$0.13	$0.01	3,480	27
≥10% of Total Revenue	$0.67	$0.67	$0.02	$0.73	$0.62	$0.06	$0.21	$0.16	$0.02	5,303	63
Production System											
On-Site kitchen only	$0.67	$0.60	$0.03	$0.64	$0.45	$0.06	$0.16†	$0.14	$0.01	8,694	64
Base/Central only	$0.70	$0.68	$0.02	$0.72	$0.69	$0.09	$0.22	$0.21	$0.04	1,814	19
Mostly on-site kitchen	$0.62	$0.65	$0.02	$0.57	$0.57	$0.02	$0.22	$0.18	$0.02	347	16
Mostly satellite	$0.61	$0.53	$0.04	$0.64	$0.60	$0.04	$0.10	$0.03	$0.02	928	17

Notes:

[a] Excludes 4 SFAs without breakfast programs; an additional 26 SFAs for which student payments for reimbursable meals could not be separated from à la carte payments are excluded from the breakdown by à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.13

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	1.4%	6.4%
$0.30 - < $0.40	2.4	10.9
$0.40 - < $0.50	8.9	15.8
$0.50 - < $0.60	17.6	2.0
$0.60 - < $0.70	26.6	8.3
$0.70 - < $0.80	13.6	5.3
$0.80 - < $0.90	9.5	18.4
$0.90 - < $1.00	8.8	5.1
$1.00 - < $1.10	3.1	2.6
$1.10 - < $1.20	4.1	6.3
$1.20 or more	3.9	18.9
Total All SFAs	100.0%	100.0%
Mean	$0.73	$1.02
Median	$0.67	$0.81
Std Err of Mean	$0.03	$0.16
Weighted N	11,783	11,783
(Unweighted N)[a]	(116)	(116)

Note:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit D.14

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

Administration as a Percentage of Total Labor	Percent of SFAs	Total SFAs (weighted)
Less than 10%	16.2%	2,035
10% - <20%	42.5	5,340
20% - <30%	27.5	3,451
30% - <40%	11.5	1,439
40% or more	2.4	303
Total All SFAs	100.0%	12,568
Mean	18.6%	
Median	18.1%	
Std Err of Mean	1.1%	
(Unweighted N)		(120)

Exhibit D.15

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

Administration as a Percentage of Total Reported Costs	Percent of SFAs	Total SFAs (weighted)
Less than 5%	29.2%	3,669
5% - <10%	36.7	4,615
10% - <15%	26.8	3,370
15% - <20%	7.0	878
20% or more	0.3	36
Total All SFAs	100.0%	12,568
Mean	8.2%	
Median	8.1%	
Std Err of Mean	0.5%	
(Unweighted N)		(120)

Exhibit D.16

Reported Administrative Labor Costs by Meal Production System

Administrative Labor Costs as a Percentage of Total Reported Labor Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	16.9%†††	15.4%	1.3%	21.7%	21.4%	1.4%	8,865	65
Base/Central only	22.1	22.1	2.2	23.6	25.7	2.0	2,308	21
Mostly on-site kitchen	25.4	26.8	0.1	24.7	22.5	2.4	347	16
Mostly satellite	22.6	23.8	1.2	22.7	21.9	1.6	1,047	18

Administrative Labor Costs as a Percentage of Total Reported Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	7.4%†††	6.9%	0.5%	9.7%	10.1%	0.6%	8,865	65
Base/Central only	10.0	10.6	1.2	10.5	10.9	1.1	2,308	21
Mostly on-site kitchen	10.8	10.4	0.0	11.9	10.4	1.6	347	16
Mostly satellite	10.4	11.5	0.8	10.5	9.1	0.8	1,047	18

Note:

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Full Cost

Exhibit D.17

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

	Unreported Costs as a Percentage of Full Costs			SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System					
On-Site kitchen only	19.3%	19.5%	1.3%	8,865	65
Base/Central only	18.7	19.3	1.8	2,308	21
Mostly on-site kitchen	17.4	13.0	0.1	347	16
Mostly satellite	18.3	17.4	0.8	1,047	18

Note:

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.18

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

Unreported Costs as a Percentage of Full Costs	Percent of SFAs	Total SFAs (weighted)
Less than 10%	10.8%	1,351
10% - <20%	42.9	5,386
20% - <30%	35.5	4,465
30% - <40%	10.9	1,366
40% or more	0.0	0
Total All SFAs	100.0%	12,568
Mean	19.1%	
Median	19.2%	
Std Err of Mean	1.1%	
(Unweighted N)		(120)

Exhibit D.19

Unreported Labor as a Percentage of Total Full Costs

	Mean	Median	Std Err of Mean	SFA Sample Size	
				Weighted	Unweighted
Total	12.3%	11.1%	1.0%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	12.7	11.4	1.1	9,388	84
60% or more of lunches are free/reduced price	11.0	10.9	1.9	3,180	36
SFA Size					
Small (1-999)	11.6	9.2	1.8	5,238	16
Medium (1,000-4,999)	13.5	13.1	1.1	4,995	37
Large (5,000+)	11.3	10.7	0.7	2,336	67
Production System					
On-Site kitchen only	12.4	11.1	1.2	8,865	65
Base/Central only	12.2	13.1	2.0	2,308	21
Mostly on-site kitchen	11.5	9.2	0.0	347	16
Mostly satellite	11.9	10.1	0.4	1,047	18

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.20

Unreported Depreciation as a Percentage of Total Full Costs

	Mean	Median	Std Err of Mean	SFA Sample Size	
				Weighted	Unweighted
Total	1.7%	1.4%	0.2%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	1.7	1.4	0.3	9,388	84
60% or more of lunches are free/reduced price	1.6	1.2	0.3	3,180	36
SFA Size					
Small (1-999)	1.3	1.4	0.2	5,238	16
Medium (1,000-4,999)	1.8	1.3	0.4	4,995	37
Large (5,000+)	2.2	1.3	0.6	2,336	67
Production System					
On-Site kitchen only	1.6	1.4	0.3	8,865	65
Base/Central only	1.5	1.5	0.1	2,308	21
Mostly on-site kitchen	3.0	1.3	0.0	347	16
Mostly satellite	1.9	1.4	0.0	1,047	18

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.21

Unreported Indirects as a Percentage of Total Full Costs

	Mean	Median	Std Err of Mean	SFA Sample Size	
				Weighted	Unweighted
Total	4.5%	4.5%	0.5%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	4.7	4.7	0.6	9,388	84
60% or more of lunches are free/reduced price	3.9	4.0	0.4	3,180	36
SFA Size					
Small (1-999)	5.3	4.8	0.9	5,238	16
Medium (1,000-4,999)	3.9	4.3	0.4	4,995	37
Large (5,000+)	4.1	4.2	0.5	2,336	67
Production System					
On-Site kitchen only	4.7	4.5	0.6	8,865	65
Base/Central only	4.5	4.3	0.5	2,308	21
Mostly on-site kitchen	2.6	0.5	0.0	347	16
Mostly satellite	3.9	4.2	0.5	1,047	18

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.22

Unreported Other Costs as a Percentage of Total Full Costs

	Mean	Median	Std Err of Mean	SFA Sample Size	
				Weighted	Unweighted
Total	0.1%	0.0%	0.1%	12,568	120
Poverty Status					
Less than 60% of lunches are free/reduced price	0.2	0.0	0.1	9,388	84
60% or more of lunches are free/reduced price	0.0	0.0	0.0	3,180	36
SFA Size					
Small (1-999)	0.3	0.0	0.3	5,238	16
Medium (1,000-4,999)	0.1	0.0	0.1	4,995	37
Large (5,000+)	0.0	0.0	0.0	2,336	67
Production System					
On-Site kitchen only	0.2	0.0	0.2	8,865	65
Base/Central only	0.1	0.0	0.0	2,308	21
Mostly on-site kitchen	0.0	0.0	0.0	347	16
Mostly satellite	0.0	0.0	0.0	1,047	18

Note:

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.23

Unreported Labor Costs as a Percentage of Total Unreported Costs: Distribution of SFAs

Unreported Labor/ Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0% - < 10%	4.5%	545
10% - < 20%	0.1	13
20% - < 30%	4.5	544
30% - < 40%	11.6	1,413
40% - < 50%	5.5	667
50% - < 60%	17.1	2,088
60% - < 70%	14.1	1,720
70% - < 80%	21.4	2,686
80% - < 90%	13.9	1,623
90% - < 100%	7.5	921
Total All SFAs	100.0%	12,220
Mean	61.3%	
Median	64.9	
Std Err of Mean	3.0	
(Unweighted N)[a]		(119)

Note:

[a] Excludes 1 SFA with no unreported costs.

Exhibit D.24

Unreported Labor Cost as a Percentage of Total Unreported Costs by Meal Production System

				SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System					
On-Site kitchen only	61.6%	64.6%	3.3%	8,518	64
Base/Central only	57.3	71.6	5.0	2,308	21
Mostly on-site kitchen	71.8	85.5	0.1	347	16
Mostly satellite	64.0	69.5	3.0	1,047	18

Note:

[a] Excludes 1 SFA with no unreported costs.

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.25

Unreported Labor Costs as a Percentage of Total Labor Costs: Distribution of SFAs

Unreported Labor/ Total Labor	Percent of SFAs	Total SFAs (weighted)
Less than 10%	13.8%	1,736
10% - < 20%	26.8	3,366
20% - < 30%	26.8	3,364
30% - < 40%	18.9	2,375
40% or more	13.7	1,726
Total All SFAs	100.0%	12,568
Mean	24.8%	
Median	26.9%	
Std Err of Mean	1.8%	
(Unweighted N)		(120)

Exhibit D.26

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

				SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System					
On-Site kitchen only	25.3%	27.0%	2.1%	8,865	65
Base/Central only	23.6	27.3	3.7	2,308	21
Mostly on-site kitchen	23.7	20.8	0.1	347	16
Mostly satellite	24.1	21.1	0.8	1,047	18

Note:

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.27

Unreported School-Based Labor Costs as a Percentage of Total Unreported Labor Costs: Distribution of SFAs

School Administrative Labor/ Total Unreported Labor	Percent of SFAs	Total SFAs (weighted)
0 - <10%	4.7%	552
10% - <20%	0.0	0
20% - <30%	0.0	0
30% - <40%	6.0	705
40% - <50%	0.5	56
50% - <60%	0.6	75
60% - <70%	7.4	874
70% - <80%	6.7	791
80% - <90%	2.6	301
90% - <100%	71.6	8,476
Total All SFAs	100.0%	11,831
Mean	86.4%	
Median	100.0%	
Std Err of Mean of Mean	3.1%	
(Unweighted N)[a]		(117)

Note:

[a] Excludes 3 SFAs with no unreported labor costs.

Exhibit D.28

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

				SFA Sample Size	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System					
On-Site kitchen only	83.8%	100.0%	4.2%	8,518	64
Base/Central only	94.3%	100.0%	2.8%	1,945	20
Mostly on-site kitchen	94.5%	100.0%	0.0%	347	16
Mostly satellite	90.7%	100.0%	2.6%	1,021	17

Notes:

[a] Excludes 3 SFAs with no unreported labor costs.

††† Differences among the four production systems statistically significant at the 1 percent level.

†† Differences among the four production systems statistically significant at the 5 percent level.

† Differences among the four production systems statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.29

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

Unreported Indirect Costs/ Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0 - <10%	25.0%	3,055
10% - <20%	20.5	2,499
20% - <30%	16.1	1,970
30% - <40%	9.2	1,121
40% - <50%	13.3	1,620
50% - <60%	15.3	1,870
60% or more	0.7	85
Total All SFAs	100.0%	12,220
Mean	25.8%	
Median	22.1%	
Std Err of Mean of Mean	2.7%	
(Unweighted N)[a]		(119)

Notes:

[a] Excludes 1 SFA with no unreported costs.

Exhibit D.30

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

				SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System					
On-Site kitchen only	25.9%	24.7%	3.4%	8,518	64
Base/Central only	29.3%	21.9%	4.3%	2,308	21
Mostly on-site kitchen	12.0%	8.4%	0.1%	347	16
Mostly satellite	21.1%	18.9%	2.3%	1,047	18

Notes:

[a] Excludes 1 SFA with no unreported costs.

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.31

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

Unreported Depreciation/Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
0 - <10%	70.8%	8,653
10% - <20%	16.7	2,044
20% - <30%	2.1	252
30% - <40%	2.8	346
40% - <50%	5.7	692
50% - <60%	1.7	207
60% - <70%	0.2	26
70% - <80%	0.0	0
80% - <90%	0.0	0
90% - <100%	0.0	0
Total All SFAs	100.0%	12,220
Mean	9.9%	
Median	7.0%	
Std Err of Mean	1.3%	
(Unweighted N)[a]		(119)

Note:

[a] Excludes 1 SFA with no unreported costs.

Exhibit D.32

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

				SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System					
On-Site kitchen only	9.0%	6.9%	1.3%	8,518	64
Base/Central only	11.5%	5.2%	1.6%	2,308	21
Mostly on-site kitchen	14.8%	9.0%	0.1%	347	16
Mostly satellite	11.6%	7.7%	0.2%	1,047	18

Notes:

[a] Excludes 1 SFA with no unreported costs.

††† Differences among the four production systems statistically significant at the 1 percent level.

†† Differences among the four production systems statistically significant at the 5 percent level.

† Differences among the four production systems statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.33

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

	Mean	Median	Std Err of Mean	SFA Sample Size[a] Weighted	SFA Sample Size[a] Unweighted
Production System					
On-Site kitchen only	2.9%	0.0%	0.9%	8,518	64
Base/Central only	1.2%	0.0%	1.0%	2,308	21
Mostly on-site kitchen	1.4%	0.0%	0.0%	347	16
Mostly satellite	3.2%	0.0%	0.9%	1,047	18

Notes:

[a] Excludes 1 SFA with no unreported costs.

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.34

Unreported Utility Costs as a Percentage of Total Unreported Costs: Distribution of SFAs

Other Unreported Costs/Total Unreported Costs	Percent of SFAs	Total SFAs (weighted)
Less than 10%	90.1%	11,013
10% - <20%	6.7	817
20% - <30%	1.8	220
30% - <40%	1.4	171
40% or more	0.0	0
Total All SFAs	100.0%	12,220
Mean	2.5%	
Median	0.0%	
Std Err of Mean	0.8%	
(Unweighted N)[a]		(119)

Notes:

[a] Excludes 1 SFA with no unreported costs.

Exhibit D.35

Full Cost per Reimbursable Lunch: Distribution of SFAs

Full Cost per Reimbursable Lunch	Percent of SFAs	Percent of lunches	Total SFAs (weighted)
$0.00 - <$2.00	6.5%	5.2%	815
$2.00 - <$2.20	1.8	2.8	225
$2.20 - <$2.40	17.0	10.8	2,138
$2.40 - <$2.60	16.6	14.9	2,083
$2.60 - <$2.80	8.9	17.5	1,112
$2.80 - <$3.00	19.0	17.2	2,389
$3.00 - <$3.20	4.9	11.6	609
$3.20 - <$3.40	7.7	13.8	973
$3.40 or more	17.7	6.3	2,223
Total All SFAs	100.0%	100.0%	12,568
Mean	$2.91	$2.79	
Std Err of Mean	$0.10	$0.05	
25th Percentile	$2.38	$2.48	
Median	$2.75	$2.70	
75th Percentile	$3.21	$3.08	
Minimum	$0.98	$0.98	
Maximum	$5.95	$5.95	
Percent below reimbursement rate	32.0%	28.0%	
Percent below lower reimbursement rate	32.0%	25.4%	
Percent below higher reimbursement rate	33.3%	28.2%	
(Unweighted N)[a]			(120)

Exhibit D.36

Full Cost per Reimbursable Breakfast: Distribution of SFAs

Full Cost per Reimbursable Breakfast	Percent of SFAs	Percent of breakfasts	Total SFAs (weighted)
$0.00 - < $1.20	8.4%	16.2%	987
$1.20 - < $1.40	11.3	22.8	1,326
$1.40 - < $1.60	7.4	4.7	868
$1.60 - < $1.80	10.1	9.0	1,191
$1.80 - < $2.00	5.4	10.5	640
$2.00 - < $2.20	4.7	12.8	558
$2.20 - < $2.40	9.5	7.7	1,116
$2.40 - < $2.60	7.0	5.2	819
$2.60 or more	36.3	11.1	4,278
Total All SFAs	100.0%	100.0%	11,783
Mean	$2.50	$1.81	
Std Err of Mean	$0.22	$0.07	
25th Percentile	$1.51	$1.27	
Median	$2.24	$1.70	
75th Percentile	$2.84	$2.17	
Minimum	$0.82	$0.82	
Maximum	$6.74	$6.74	
Percent below reimbursement rate	18.4%	32.8%	
Percent below regular reimbursement rate	10.6%	26.0%	
Percent below severe need reimbursement rate	27.0%	43.6%	
(Unweighted N)			(116)

Note:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit D.37

Full Cost per Reimbursable Meal by Meal Production System

	Full Cost per Reimbursable Lunch							
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	$2.88	$2.74	$0.10	$2.74	$2.68	$0.06	8,865	65
Base/Central only	$2.99	$2.56	$0.24	$2.95	$2.91	$0.10	2,308	21
Mostly on-site kitchen	$2.80	$2.69	$0.00	$2.81	$2.92	$0.07	347	16
Mostly satellite	$3.05	$2.88	$0.12	$2.81	$2.88	$0.09	1,047	18
	Full Cost per Reimbursable Breakfast							
	Unit of Analysis is SFA			Unit of Analysis is NSLP Breakfast			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	$2.52††	$2.24	$0.29	$1.78	$1.50	$0.10	8,694	64
Base/Central only	$2.75	$2.31	$0.12	$2.08	$2.02	$0.17	1,814	19
Mostly on-site kitchen	$1.79	$1.30	$0.01	$1.77	$1.84	$0.05	347	16
Mostly satellite	$2.01	$1.95	$0.11	$1.71	$1.66	$0.10	928	17

Notes:

[a] Excludes 4 SFA without breakfast programs.

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.38

Composition of Foodservice Full Costs by Meal Production System

	Percent of SFA Full Costs									SFA Sample Size	
	Food Costs			Labor Costs			Other Costs				
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System											
On-Site kitchen only	36.9%	35.7%	1.4%	48.0%	46.3%	1.3%	15.1%	14.2%	1.2%	8,865	65
Base/Central only	36.9	38.8	1.6	49.9	51.5	1.6	13.2	11.2	1.4	2,308	21
Mostly on-site kitchen	35.3	35.0	0.1	46.1	44.3	0.1	18.6	17.0	0.0	347	16
Mostly satellite	36.2	34.9	0.4	48.5	48.8	1.3	15.3	16.6	1.1	1,047	18

Note:

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.

Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.39

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

Full Cost Per Reimbursable Lunch	Percent of SFAs	
	Food	Labor
$0.00 - < $0.60	0.6%	0.5%
$0.60 - < $0.70	3.5	0.5
$0.70 - < $0.80	12.4	0.9
$0.80 - < $0.90	10.3	9.0
$0.90 - < $1.00	24.0	5.2
$1.00 - < $1.10	12.8	13.7
$1.10 - < $1.20	11.3	17.3
$1.20 - < $1.30	9.3	10.5
$1.30 - < $1.40	0.0	2.9
$1.40 - < $1.50	7.3	6.1
$1.50 or more	8.6	33.5
Total All SFAs	100.0%	100.0%
Mean	$1.09	$1.39
Median	$1.00	$1.24
Std Err of Mean	$0.04	$0.06
Weighted N	12,568	12,568
(Unweighted N)	(120)	(120)

Exhibit D.40

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

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$1.09	$1.00	$0.04	$1.39	$1.24	$0.06	$0.43	$0.38	$0.03	12,568	120
Poverty Status											
Less than 60% of lunches are free/reduced price	$1.12	$1.05	$0.05	$1.41	$1.21	$0.07	$0.42	$0.38	$0.03	9,388	84
60% or more of lunches are free/reduced price	$1.00	$0.96	$0.06	$1.33	$1.38	$0.10	$0.48	$0.43	$0.06	3,180	36
SFA Size											
Small (1-999)	$1.15	$1.05	$0.04	$1.47	$1.19	$0.09	$0.42	$0.32	$0.04	5,238	16
Medium (1,000-4,999)	$1.06	$0.96	$0.05	$1.30	$1.21	$0.04	$0.43	$0.38	$0.05	4,995	37
Large (5,000+)	$1.00	$0.99	$0.04	$1.39	$1.38	$0.05	$0.47	$0.43	$0.03	2,336	67
à la Carte Revenues[a]											
<10 % of Total Revenue	$1.16	$1.05	$0.03	$1.48	$1.28	$0.06	$0.39	$0.38	$0.05	3,807	28
≥10% of Total Revenue	$1.09	$0.95	$0.07	$1.41	$1.24	$0.08	$0.51	$0.43	$0.05	5,594	65
Production System											
On-Site kitchen only	$1.07†	$0.99	$0.04	$1.37	$1.24	$0.06	$0.44	$0.38	$0.04	8,865	65
Base/Central only	$1.17	$0.94	$0.13	$1.46	$1.28	$0.14	$0.35	$0.31	$0.03	2,308	21
Mostly on-site kitchen	$0.96	$0.96	$0.00	$1.33	$1.17	$0.00	$0.52	$0.44	$0.00	347	16
Mostly satellite	$1.10	$1.04	$0.04	$1.47	$1.38	$0.05	$0.48	$0.50	$0.04	1,047	18

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.
**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.
*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.41

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

	Food Costs			Labor Costs			Other Costs			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$0.98	$0.96	$0.02	$1.36	$1.29	$0.03	$0.45	$0.42	$0.02	12,568	120
Poverty Status											
Less than 60% of lunches are free/reduced price	$1.00	$0.95	$0.02	$1.35	$1.28	$0.04	$0.47*	$0.44	$0.02	9,388	84
60% or more of lunches are free/reduced price	$0.95	$0.96	$0.03	$1.37	$1.41	$0.03	$0.42	$0.42	$0.01	3,180	36
SFA Size											
Small (1-999)	$1.12	$1.05	$0.04	$1.37†	$1.19	$0.08	$0.38††	$0.31	$0.04	5,238	16
Medium (1,000-4,999)	$1.01	$0.96	$0.04	$1.26	$1.21	$0.04	$0.38	$0.35	$0.03	4,995	37
Large (5,000+)	$0.96	$0.97	$0.03	$1.39	$1.36	$0.04	$0.48	$0.44	$0.01	2,336	67
à la Carte Revenues[a]											
<10 % of Total Revenue	$1.00	$0.97	$0.03	$1.44	$1.45	$0.02	$0.47	$0.42	$0.01	3,807	28
≥10% of Total Revenue	$0.94	$0.88	$0.03	$1.35	$1.24	$0.05	$0.47	$0.43	$0.02	5,594	65
Production System											
On-Site kitchen only	$0.99	$0.94	$0.03	$1.32	$1.28	$0.04	$0.44†	$0.42	$0.02	8,865	65
Base/Central only	$1.05	$1.07	$0.06	$1.46	$1.41	$0.07	$0.44	$0.41	$0.04	2,308	21
Mostly on-site kitchen	$0.86	$0.92	$0.05	$1.42	$1.48	$0.03	$0.54	$0.52	$0.02	347	16
Mostly satellite	$1.01	$1.03	$0.03	$1.37	$1.46	$0.04	$0.43	$0.47	$0.03	1,047	18

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.
**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.
*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.42

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	1.4%	1.5%
$0.30 - < $0.40	2.4	5.6
$0.40 - < $0.50	8.9	4.9
$0.50 - < $0.60	17.6	7.4
$0.60 - < $0.70	26.6	6.4
$0.70 - < $0.80	13.6	12.7
$0.80 - < $0.90	9.5	3.3
$0.90 - < $1.00	8.8	1.6
$1.00 - < $1.10	3.1	4.1
$1.10 - < $1.20	4.1	4.8
$1.20 or more	3.9	47.8
Total All SFAs	100.0%	100.0%
Mean	$0.73	$1.38
Median	$0.67	$1.11
Std Err of Mean	$0.03	$0.18
Weighted N	11,783	11,783
(Unweighted N)[a]	(116)	(116)

Notes:

[a] Excludes 4 SFAs without breakfast programs.

Exhibit D.43

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

	Food Costs			Labor Costs			Other Costs			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$0.73	$0.67	$0.03	$1.38	$1.11	$0.18	$0.38	$0.32	$0.04	11,783	116
Poverty Status											
Less than 60% of lunches are free/reduced price	$0.75	$0.71	$0.04	$1.52*	$1.22	$0.23	$0.38	$0.31	$0.05	8,603	80
60% or more of lunches are free/reduced price	$0.68	$0.65	$0.06	$1.01	$1.11	$0.11	$0.38	$0.38	$0.05	3,180	36
SFA Size											
Small (1-999)	$0.78	$0.77	$0.04	$1.91	$1.44	$0.41	$0.46	$0.38	$0.09	4,743	14
Medium (1,000-4,999)	$0.67	$0.66	$0.03	$0.99	$0.75	$0.07	$0.32	$0.22	$0.03	4,704	35
Large (5,000+)	$0.78	$0.71	$0.09	$1.09	$0.95	$0.09	$0.36	$0.33	$0.03	2,336	67
à la Carte Revenues											
<10 % of Total Revenue	$0.77	$0.88	$0.04	$1.97	$1.44	$0.49	$0.45	$0.37	$0.11	3,480	27
≥10% of Total Revenue	$0.76	$0.68	$0.05	$1.17	$1.11	$0.10	$0.40	$0.34	$0.04	5,303	63
Production System											
On-Site kitchen only	$0.73	$0.65	$0.04	$1.41††	$1.11	$0.23	$0.38	$0.30	$0.06	8,694	64
Base/Central only	$0.80	$0.67	$0.05	$1.51	$1.29	$0.05	$0.44	$0.38	$0.03	1,814	19
Mostly on-site kitchen	$0.65	$0.52	$0.00	$0.82	$0.70	$0.00	$0.32	$0.30	$0.00	347	16
Mostly satellite	$0.66	$0.69	$0.03	$1.04	$1.01	$0.12	$0.31	$0.29	$0.02	928	17

Notes:

[a] Excludes 4 SFAs without breakfast programs; an additional 26 SFAs for which student payments for reimbursable meals could not be separated from à la carte payments are excluded from the breakdown by à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.44

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

	Food Costs			Labor Costs			Other Costs			SFA Sample Size[a]	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Total	$0.65	$0.61	$0.02	$0.86	$0.75	$0.05	$0.30	$0.23	$0.01	11,783	116
Poverty Status											
Less than 60% of lunches are free/reduced price	$0.67	$0.63	$0.03	$0.92	$0.77	$0.07	$0.32*	$0.29	$0.02	8,603	80
60% or more of lunches are free/reduced price	$0.64	$0.60	$0.02	$0.77	$0.65	$0.06	$0.27	$0.20	$0.02	3,180	36
SFA Size											
Small (1-999)	$0.82	$0.80	$0.04	$1.55†††	$1.29	$0.20	$0.42††	$0.38	$0.04	4,743	14
Medium (1,000-4,999)	$0.66	$0.60	$0.05	$0.74	$0.65	$0.06	$0.24	$0.19	$0.02	4,704	35
Large (5,000+)	$0.64	$0.62	$0.02	$0.86	$0.80	$0.06	$0.31	$0.27	$0.02	2,336	67
à la Carte Revenues											
<10 % of Total Revenue	$0.64	$0.55	$0.03	$0.80	$0.75	$0.07	$0.27*	$0.22	$0.01	3,480	27
≥10% of Total Revenue	$0.67	$0.67	$0.02	$0.96	$0.80	$0.07	$0.35	$0.29	$0.02	5,303	63
Production System											
On-Site kitchen only	$0.67	$0.60	$0.03	$0.83	$0.65	$0.07	$0.28	$0.22	$0.02	8,694	64
Base/Central only	$0.70	$0.68	$0.02	$1.05	$0.95	$0.14	$0.33	$0.37	$0.03	1,814	19
Mostly on-site kitchen	$0.62	$0.65	$0.02	$0.80	$0.75	$0.04	$0.35	$0.31	$0.01	347	16
Mostly satellite	$0.61	$0.53	$0.04	$0.84	$0.74	$0.10	$0.26	$0.23	$0.03	928	17

Notes:

[a] Excludes 4 SFAs without breakfast programs; an additional 26 SFAs for which student payments for reimbursable meals could not be separated from à la carte payments are excluded from the breakdown by à la carte revenues.

***, ††† Statistically significant difference at the 1 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

**, †† Statistically significant difference at the 5 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

*, † Statistically significant difference at the 10 percent level relative to the excluded category (t-test) or across all listed categories (chi-squared test), respectively.

Numbers without asterisks (*) or daggers (†) are not statistically significantly different at the 10 percent level relative to the excluded category or across all listed categories.

Exhibit D.45

Full Administrative Labor Costs by Meal Production System

	Administrative Labor Costs as a Percentage of Total Full Labor Costs							
	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	18.4%†	17.0%	1.1%	20.1%	19.0%	1.0%	8,865	65
Base/Central only	23.2	24.6	2.3	22.8	24.6	1.8	2,308	21
Mostly on-site kitchen	21.9	22.3	0.1	22.0	21.0	1.7	347	16
Mostly satellite	20.6	18.9	1.2	19.3	16.5	1.0	1,047	18

Administrative Labor Costs as a Percentage of Total Full Costs

	Unit of Analysis is SFA			Unit of Analysis is NSLP Lunch			SFA Sample Size	
	Mean	Median	Std Err of Mean	Mean	Median	Std Err of Mean	Weighted	Unweighted
Production System								
On-Site kitchen only	8.9%	8.4%	0.5%	9.6%	9.0%	0.5%	8,865	65
Base/Central only	11.6	11.6	1.4	11.5	11.6	1.2	2,308	21
Mostly on-site kitchen	10.1	9.9	0.0	11.0	10.0	1.3	347	16
Mostly satellite	10.3	8.6	0.7	9.7	8.5	0.6	1,047	18

Note:

††† Differences among the four production systems statistically significant at the 1 percent level.
†† Differences among the four production systems statistically significant at the 5 percent level.
† Differences among the four production systems statistically significant at the 10 percent level.
Numbers without daggers (†) are not statistically significantly different at the 10 percent level.

Exhibit D.46

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)
0 - <10%	7.4%	934
10% - <20%	47.2	5,935
20% - <30%	33.7	4,231
30% - <40%	11.4	1,433
40% or more	0.3	34
Total All SFAs	100.0%	12,568
Mean	19.6%	
Median	18.6%	
Std Err of Mean	1.0%	
(Unweighted N)		(120)

Exhibit D.47

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

Administration as a Percent of Total Labor	Percent of SFAs	Total SFAs (weighted)
0 - <5%	9.4%	1,185
5% - <10%	58.0	7,291
10% - <15%	21.0	2,634
15% - <20%	9.8	1,230
20% or more	1.8	229
Total All SFAs	100.0%	12,568
Mean	9.5%	
Median	8.9%	
Std Err of Mean	0.5%	
(Unweighted N)		(120)

Revenues

Exhibit D.48

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

USDA Meal Reimbursements/Total Revenue	Percent of SFAs	Total SFAs (weighted)
0 - <30%	20.3%	2,543
30% - <40%	17.9	2,243
40% - <50%	21.1	2,633
50% - <60%	19.4	2,421
60% - <70%	15.1	1,887
70% or more	6.2	778
Total All SFAs	100.0%	12,504
Mean	45.4%	
Median	45.5%	
Std Err of Mean	1.8%	
(Unweighted N)[a]		(118)

Note:

[a] Excludes 2 SFAs that did not report USDA subsidies separately.

Exhibit D.49

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

USDA Donated Commodities/Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 2%	7.7%	962
2% - < 4%	26.7	3,357
4% - < 6%	33.7	4,238
6% - < 8%	20.8	2,610
8% - <10%	4.9	612
10% - <12%	2.0	246
12% or more	4.3	541
Total All SFAs	100.0%	12,568
Mean	5.2%	
Median	4.9%	
Std Err of Mean	0.4%	
(Unweighted N)		(120)

Exhibit D.50

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

Student Payments/Total Revenue	Percent of SFAs	Total SFAs (weighted)
0 - <20%	39.0%	3,946
20% - <30%	29.9	3,021
30% - <40%	19.8	2,004
40% - <50%	11.4	1,148
50% - <60%	0.0	0
60% or more	0.0	0
Total All SFAs	100.0%	10,120
Mean	24.2%	
Median	25.6%	
Std Err of Mean	1.5%	
(Unweighted N)[a]		(98)

Note:

[a] Excludes 22 SFAs that reported student payments for reimbursable meals and other revenue categories together.

Exhibit D.51

State Funds as a Percentage of Total Revenue: Distribution of SFAs

State Funds/Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 2%	68.5%	8,551
2% - < 4%	13.0	1,622
4% - < 6%	12.7	1,589
6% - < 8%	0.0	3
8% or more	5.8	719
Total All SFAs	100.0%	12,483
Mean	2.4%	
Median	1.3%	
Std Err of Mean	0.3%	
(Unweighted N) [a]		(118)

Note:

[a] Excludes 2 SFAs that reported State funds in other revenue categories.

Exhibit D.52

Local Funds as a Percentage of Total Revenue: Distribution of SFAs

Local Fund/Total Revenue	Percent of SFAs	Total SFAs (weighted)
Less than 2%	67.7%	8,509
2% - < 4%	4.1	520
4% - < 6%	3.1	383
6% - < 8%	0.6	69
8% or more	24.6	3,086
Total All SFAs	100.0%	12,568
Mean	6.4%	
Median	0.0%	
Std Err of Mean	2.0%	
(Unweighted N)		(120)

Exhibit D.53

Revenue from à la Carte Sales as a Percentage of Total Revenue: Distribution of SFAs

à la Carte/Total Revenue	Percent of SFAs	Total SFAs (weighted)
0 - <10%	40.5%	3,807
10% - <20%	30.0	2,821
20% - <30%	15.3	1,438
30% - <40%	8.6	812
40% or more	5.6	523
Total All SFAs	100.0%	9,401
Mean	15.8%	
Median	13.6%	
Std Err of Mean	2.0%	
(Unweighted N)[a]		(93)

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, and 4 SFAs that reported à la carte sales and other non-reimbursable revenues together.

Exhibit D.54

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

Other Cash Revenue/Total Revenue	Percent of SFAs	Total SFAs (weighted)
0 - <1%	78.9%	9,386
1% - < 2%	14.4	1,700
2% - < 3%	5.1	597
3% or more	1.8	208
Total All SFAs	100.0%	11,891
Mean	0.6%	
Median	0.1%	
Std Err of Mean	0.1%	
(Unweighted N)[a]		(115)

Note:

[a] Excludes 5 SFAs that reported other (non-reimbursable) cash revenues together with à la carte revenues.

Revenue and Cost Comparisons

Exhibit D.55

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

Total Revenue/Total Reported Costs	Percent of SFAs	Total SFAs (weighted)
0 - <90%	9.7%	1,217
90% - <95%	11.1	1,391
95% - <100%	20.0	2,508
100% - <105%	37.9	4,766
105% - <110%	13.0	1,629
110% or more	8.4	1,058
Total All SFAs	100.0%	12,568
Mean	100.8%	
Median	101.5%	
Std Err of Mean	1.1%	
(Unweighted N)		(120)

Exhibit D.56

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

Total Reimbursable/Reported Reimbursable	Percent of SFAs	Total SFAs (weighted)
0 - <80%	9.4%	947
80% - <90%	0.9	90
90% - <100%	14.6	1,460
100% - <110%	26.2	2,634
110% - <120%	15.1	1,517
120% - <130%	10.9	1,097
130% or more	22.8	2,292
Total All SFAs	100.0	10,037
Mean	114.8%	
Median	109.3%	
Std Err of Mean	4.0%	
(Unweighted N)[a]		(97)

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together.

Exhibit D.57

Total Revenues from Nonreimbursable Meals as a Percentage of Reported Nonreimbursable Meal Costs: Distribution of SFAs

Total Reimbursable Revenue/Reported Reimbursable	Percent of SFAs	Total SFAs (weighted)
0 - <30%	10.9%	991
30% - <40%	6.4	580
40% - <50%	12.7	1,151
50% - <60%	24.4	2,219
60% - <70%	7.7	703
70% - <80%	5.5	496
80% - <90%	10.8	980
90% - <100%	9.0	822
100% - <110%	3.7	335
110% or more	9.0	822
Total All SFAs	100.0%	9,099
Mean	71.3%	
Median	58.2%	
Std Err of Mean	6.8%	
(Unweighted N)[a]		(93)

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, 2 SFAs with the highest ratios of revenues to costs for nonreimbursable meals, and 2 SFAs with the lowest ratios of revenues to costs for nonreimbursable meals. Extreme values were excluded because they had substantial influence on overall and group means.

Exhibit D.58

Total Revenue as a Percentage of Total Full Costs: Distribution of SFAs

Total Revenue/Total Full Costs	Percent of SFAs	Total SFAs (weighted)
0 - <80%	40.9%	5,134
80% - <85%	21.3	2,672
85% - <90%	13.8	1,737
90% - <95%	16.3	2,044
95% - <100%	5.0	633
100% - <105%	2.8	347
105% - <110%	0.0	0
110% or more	0.0	0
Total All SFAs	100.0%	12,568
Mean	81.6%	
Median	81.1%	
Std Err of Mean	1.4%	
(Unweighted N)		(120)

Exhibit D.59

Total Revenues from Reimbursable Meals as a Percentage of Full Reimbursable Meal Costs: Distribution of SFAs

Total Reimbursable Revenue/ Full Reimbursable	Percent of SFAs	Total SFAs (weighted)
0 - <80%	28.8%	2,888
80% - <90%	23.9	2,400
90% - <100%	20.7	2,081
100% - <110%	8.9	897
110% - <120%	3.0	300
120% - <130%	12.8	1,284
130% or more	1.9	187
Total All SFAs	100.0%	10,037
Mean	91.8%	
Median	88.9%	
Std Err of Mean	3.3%	
(Unweighted N)[a]		(97)

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together.

Exhibit D.60

Total Revenues from Nonreimbursable Meals as a Percentage of Full Nonreimbursable Meal Costs: Distribution of SFAs

Total Nonreimbursable Revenue/ Full Nonreimbursable	Percent of SFAs	Total SFAs (weighted)
0 - <30%	18.2%	1,083
30% - <40%	13.6	1,365
40% - <50%	18.1	1,812
50% - <60%	16.4	1,644
60% - <70%	3.1	311
70% - <80%	13.6	1,366
80% - <90%	4.5	448
90% - <100%	3.1	309
100% - <110%	0.0	0
110% or more	9.5	624
Total All SFAs	100.0%	8,961
Mean	60.6%	
Median	52.7%	
Std Err of Mean	6.0%	
(Unweighted N)[a]		(93)

Note:

[a] Excludes 23 SFAs that reported revenues from reimbursable meals and à la carte sales together, 2 SFAs with the highest ratios of revenues to costs for nonreimbursable meals, and 2 SFAs with the lowest ratios of revenues to costs for nonreimbursable meals. Extreme values were excluded because they had substantial influence on overall and group means.

Appendix E

Glossary

à la Carte Sales: Purchases of individual food items that are not taken as part of a reimbursable meal.

Administrative Cost: This study has broadly defined administrative costs to include labor costs associated with all activities that are not part of Direct Meal Production costs, that is, the activities that are not directly traceable to the production and service of a specific meal. Foodservice administrative costs include administrative tasks performed by central foodservice staff, central school district (non-foodservice) personnel, school-based foodservice staff (kitchen managers), and other school-based staff (such as principals, teachers, and school office staff). As defined for this study, administrative costs also include labor costs associated with other activities such as maintenance of foodservice equipment and warehousing of food and supplies.

Adult Food Sales: Meal purchases made by adults, such as teachers, administrators, and visitors, during regular breakfast, lunch or snack times. This category also includes food sales outside of schools, regardless of whether the consumers are adults (e.g., in senior centers) or children (e.g., in child day care centers).

Break-Even Level: Operating level at which reported costs equal revenues from all sources.

Cash Balances: An SFA's cash balance is the amount of cash retained in the foodservice account.

Direct Meal Production Cost: Direct meal production costs are those directly traceable to producing and serving reimbursable meals and nonreimbursable foods. In this study, the traceable direct meal production costs are food and labor associated with specific meals (breakfast, lunch, or snacks).

Equipment Depreciation: The portion of the cost of durable equipment that is charged to the school food service account in accounting period. Equipment is "durable" if its cost is not fully charged to the school food service account at the time it is acquired, but rather charged as a percentage of cost to for each accounting period over its estimated useful life. Examples include stoves, refrigerators, and vehicles. Once the total cost of a piece of equipment has been charged to the account, the equipment is said to be fully depreciated. If an SFA continues to use equipment that has been fully depreciated, the annual cost of this equipment is zero.

Federal Meal Subsidies: USDA subsidizes school foodservice in two ways. The first is by providing cash reimbursement to SFAs for each eligible lunch, breakfast, or snack served in participating schools (see below). The second is by making commodities available to SFAs for use in meal production. USDA commodities may be used in the preparation of any food item and are not limited to use in the production of reimbursable meals (see below). An SFA's total Federal meal subsidy is the sum of its USDA cash meal reimbursements and the USDA-assigned value of the donated commodities it receives.

Food Cost: Food cost is equal to the value of food used during the accounting period. It is equal to the cost of purchased food plus the USDA-assigned value of donated commodities received minus the change in food inventories.

Foodservice Management Company (FSMC): A commercial enterprise that manages a school foodservice under contract with a school food authority.

Full Cost: The full cost of school foodservice includes the value of all of the resources used by an SFA in support of its operations. This includes both reported costs (those that are charged to the school foodservice account) and unreported costs, which represent the value of resources used by an SFA that are not charged to the school foodservice account (see below).

High-Poverty SFAs: For this study, school districts have been defined as high-poverty SFAs if 60 percent or more of the reimbursable lunches served in SY 2005-06 were served to children who were eligible for free or reduced-price meals.

Indirect Cost: Indirect costs represent the expenses incurred by the school district that are not practical to identify with specific functions or activities (such as foodservice), but are necessary for the general operation of the organization and the conduct of activities it performs. Cost allocation plans or indirect cost rates are used to distribute those costs to benefiting activities. The Office of Management and Budget sets guidelines for which indirect costs are allowable to be allocated to grants and programs receiving Federal funds; individual programs may have additional restrictions.

Indirect Cost Pool: An indirect cost pool is the sum of all allowable indirect costs incurred by a school district or a subset of these costs defined by a cost allocation plan.

Indirect Cost Rate: An indirect cost rate is the ratio of an organization's indirect costs to its direct costs, computed for the purpose of allocating indirect costs to grants and programs operated by the organization. U.S. Department of Education regulates the allocation of indirect costs pool by school districts to its grants and oversees the role of State Education Agencies (SEAs) in setting the methods by which school districts compute and use indirect cost rates. SEAs generally specify the types of indirect and direct costs included in the computation of school district indirect cost rates.

Meal Cost: Meal cost is equal to the sum of direct meal production costs, administrative costs, other direct foodservice costs, and foodservice indirect costs (see definitions of these components elsewhere in this glossary).

Net Cash Resources: An SFA's net cash resources are equal to the cash balance minus payments due, plus accounts receivable. Under USDA regulations, an SFA may not have net cash resources exceeding three months' expenses unless authorized by the State Agency administering the NSLP.

Non-meal Production Costs: Includes administrative costs, other direct foodservice costs, and indirect costs.

Nonprofit: School foodservice is considered nonprofit when it is operated primarily for the benefit of enrolled children, and when all revenue accruing to the foodservice is used solely to operate or improve foodservice. An SFA must operate nonprofit school foodservice to be eligible for Federal meal subsidies.

Other Direct Foodservice Costs: Other direct foodservice costs are those costs that are identified as part of foodservice operations but are not identified as either direct meal production costs or administrative costs. In this study, the other direct foodservice costs for an SFA may include such items as supplies, costs of facilities, contracted services, and equipment depreciation.

Recovery of Indirect Costs: A school district is said to recover indirect costs when funds are actually transferred from the foodservice account into the district's general fund. In contrast, this study considered indirect costs to be "reported" if the school district calculated the cost and entered it as an expense in its financial statement for the school foodservice account, regardless of whether the full amount of the indirect cost was actually recovered. [Note to reviewers: we will not use the word "charging" in our discussion of indirect costs.]

Reimbursable Meals: Meals served to children that meet USDA requirements for the NSLP and SBP are eligible for reimbursement under these programs. At the time of this study, a reimbursable lunch had to provide, on average over the school week, one-third of the Recommended Dietary Allowances (RDAs) for energy and specific nutrients (protein, calcium, iron, vitamin A and vitamin C). Similarly, reimbursable school breakfasts are intended, on average, to provide one-fourth of these RDAs.

Reimbursement Rates: SFAs receive Federal funds for reimbursable meals based on a sliding scale that is tied to the poverty status of children served. The "free" rate applies to meals served to children certified as having a family income at or below 130 percent of the federal poverty level (FPL), and children taking such meals are not charged for the meal. The "reduced-price" rate (which is lower) applies to meals served to children certified has having a family income more than 130 percent and less than or equal to 185 percent of the FPL ; students taking such meals may be charged up to a specified "reduced-price" amount for the meals taken. The lowest rate—the "paid" rate—applies to all other reimbursable meals. Students may be required to pay the full price of such meals as determined by the SFA. Under special provisions of the NSLP and SBP, schools may serve meals at no charge to all students, but the school earns reimbursements based on the numbers of meals served to students qualifying for the free, reduced-price, and paid rates. SFAs serving 60 percent or more of their reimbursable lunches as free or reduced-price meals receive an additional $.02 more over the base rate for each lunch served. (See "Severe Need Schools" below for more information on SBP reimbursement rates.)

Reported Cost: Reported costs include only those costs that are charged to the nonprofit school foodservice account. Reported costs may include all or part of the SFA's direct meal production costs, administrative costs, other direct foodservice costs, and indirect costs. As SFAs often use resources for which the costs are not charged to the school foodservice account, reported costs may be less than the full costs of foodservice operations (see above).

School Foodservice Account: SFAs are required to accrue all revenue from school foodservice to a separate (or identifiable) nonprofit school foodservice account, and all funds in this account must be used to support the school foodservice. SFAs are not required to maintain separate

accounts for the Federal lunch, breakfast, snack or other programs within the nonprofit school foodservice account. (See definition of "nonprofit" above.)

School-Based Administrative Labor: School-based administrative labor includes the time spent by staff housed in individual schools (as defined below) on activities in support of foodservice other than preparing and serving meals, supervising students and collecting payments during meals, or cleaning up during or immediately after meals. As noted above, this is a broad definition of administrative labor.

School-Based Labor: School-based labor includes the time spent on foodservice activities (including meal production and administration) by staff housed in individual schools. School-based staff includes foodservice employees based in a school and other staff working primarily in a school. School-based labor may be charged to the foodservice account (and therefore included in reported costs) or not charged to the foodservice account (and therefore an unreported cost).

School-Based Meal Production Labor: Time spent by school-based staff (as defined above) on preparing and serving meals, supervising students and collecting payments during meals, or cleaning up during or immediately after meals.

Severe Need Schools: Individual schools in which 40 percent or more of the lunches served in the second preceding school year were claimed at the free or reduced-price rate are considered to be severe need schools. In SY 2005-06, SFAs received an additional $0.24 for each free and reduced-price breakfast served in severe need schools.

Student Payments for Reimbursable Meals: Student payments for reimbursable meals include the amounts paid for such meals by students in the reduced-price and paid income eligibility categories.

Unit of Analysis: The objective of this study is to estimate the mean cost of producing reimbursable breakfasts and reimbursable lunches. The unit of analysis is the denominator used to calculate these means. The study used two units of analysis: 1) the SFA, and 2) the individual meal. In the first case, the mean is the average cost per SFAs (regardless of the number of meals produced by an SFA). In the second case, the mean is the average across the total number of meals served in all SFAs (this gives more weight to the cost per meal in larger SFAs).

Unreported Cost: The value of any resource used by an SFA in support of its foodservice operations that is not charged to the nonprofit school foodservice account is an unreported cost. Unreported costs may include direct meal production costs, administrative costs, other direct foodservice costs, and indirect costs. The difference between an SFA's full cost and its reported cost is its unreported cost.

Appendix F

Data Collection Instruments

Data collection activities involved the use of 13 different forms and survey instruments. Exhibit F.1 shows the instruments used along with the method used to collect the data and the respondents. Brief descriptions of each instrument follow the exhibit. Copies of all survey instruments are available in a separate volume.

Phase 1 Instruments

1. ***State Child Nutrition Director Questionnaire.*** The State Child Nutrition (CN) Director was contacted to determine whether the State had standard food service expense reports and, if so, the forms and instructions for these reports were obtained. This interview determined whether the CN agency had data on the cost of foods purchased through statewide or regional purchasing agreements, and, if so, identified the types of foods and the contacts for price information. The CN Director identified the contacts for information on SFA financial reporting requirements, monitoring of SFA food service cash balances, commodity distribution data, audits of food service financial statements, and the State Education Finance Officer Questionnaire.

2. ***Daily Menu Record.*** The Daily Menu Record was used to organize food production data for the Target Week. On each day of the Target Week, the data collector obtained a list of the actual food items served for breakfast, lunch, and snacks at the selected school, and reviewed these with the school food service manager. One Daily Menu Record was completed for each meal. The data collector used the Daily Menu Record to record necessary information on each food item, including food name, description, and brand names or codes needed to ensure proper linking of food item to items on district purchasing list; whether the item could be included as part of a reimbursable meal; whether the item was a donated commodity; whether a recipe form was completed for the item; the serving size; the number of servings produced; and the number of servings left over. Food left over is defined as food that may be used again. Food that is left at the end of the meal but discarded is considered wasted rather than left over.

3. ***Recipe Form***. For each meal, recipes were obtained for all multi-component foods (foods prepared by combining two or more ingredients). Recipes were obtained from school food service managers or other designated staff. Data collectors used the Recipe Form to record needed information or attached a hard copy of the school's recipe with hand-written edits as needed. The completed form or edited, attached recipes provided the following information for each ingredient: food name, description, and brand names or codes needed to ensure proper linking of ingredient to items on district purchasing list; the total amount used; whether the ingredient was a donated commodity; and whether the ingredient is associated with another recipe (e.g., tuna salad in a tuna salad sandwich).

Exhibit F.1

Data Collection Instruments

Instrument	Method of Data Collection	Respondents
Phase 1		
1. State Child Nutrition Director Questionnaire	Telephone interview	State CN Director
2. Daily Menu Record	Record review and discussion	School Food Service Manager
3. Recipe Form	Record review and discussion	Food Service Manager and SFA Director
4. Menu Record for Self-serve and Made-to-Order Bars	Record review and observation	School Food Service Manager
5. Inventory of Commercially Pre-packaged Nonreimbursable Foods	Record review and observation	School Food Service Manager
6. Meal Observation Form	Observation	None
7. Daily Meal Counts Form	Record review and discussion	School Food Service Manager
8. School Food Service/Kitchen Manager Interview • Cafeteria/Kitchen Staff Roster • Daily Staff Allocation Grid	Pre-mailed form, in-person interview	School Food Service Manager
9. SFA Director Staffing and Operations Interview • Central Food Service Paid Staff Roster • Central Food Service Staff Allocation Grid • Support Function Summary Grid • Supplemental Questions • Obtain Food Price Lists and USDA Commodity Records	Pre-mailed forms, in-person interview, record abstraction	SFA Director and/or Business Manager
10. State Education Agency (SEA) Finance Officer Questionnaire	Telephone interview	SEA Finance Officer
Phase 2		
11. SFA Cost Interview Preparation Forms • SFA Expense Statement • SFA Revenue Statement • Supplemental Information Form	Mail out, mail back; existing reports can be submitted in lieu of expense and revenue statements.	SFA Director and/or Business Manager
12. SFA Cost Interview Guide • Food Service Expense Statement Review • Off-Budget District Staff Roster • Off-Budget District Staff Allocation Grid • School District Indirect Cost Review Supplement • Utilities and Equipment Supplement • Food Service Revenue Statement and Cash Balance Review	Record review and in-person discussion	SFA Director and/or Business Manager; additional individuals may be identified by SFA Director and/or Business Manager
13. School Principal Cost Interview	Pre-mailed form, telephone interview	School Principal

4. ***Menu Record for Self-serve and Made-to-Order Bars.*** The Menu Record for Self-serve and Made-to-Order Bars was used to describe ingredients included on salad bars, deli bars, theme bars, and condiment bars where students served themselves or staff prepared individualized servings based on student requests. The record provided information on the total amount of food used on the bar the total number of servings produced/taken, and whether items from the bar could be included in a reimbursable meal. The record was completed for each meal during the Target Week when a self-serve or made-to-order bar was available. For each item, the following information were obtained: food name, description, and brand names or codes needed to ensure proper linking of ingredient to items on district purchasing list; portion size, if item is pre-portioned (e.g., packets of saltine crackers); whether the item was a donated commodity; whether a recipe form was completed for the item; the total amount put out at the beginning of meal; the total amount added during the meal period (if any); and the total amount left over at the end of the meal (using the definition noted above); and the total number of servings produced by or taken from the bar. Data collectors assisted food service personnel in maintaining the records needed to complete the form. In most cases, this involved weighing and/or measuring serving vessels (e.g., crocks on a salad bar or serving pans on a deli bar) before and after the meal period, as well as any amounts added. Every self-serve and made-to-order bar was listed as an item on the associated Menu Record. Data on the number of servings produced by/taken from the bar were recorded there as well as on the Menu Record for Self-Serve and Made-to-Order Bars.

5. ***Inventory of Commercially Pre-packaged Nonreimbursable Foods.*** This form was used to record the change in inventory of commercially pre-packaged foods that were not offered as part of a reimbursable meal. This included foods that were offered on reimbursable food lines (but must be paid for à la carte), as well as foods offered on à la carte-only lines, in vending machines, and in other locations such as snack bars or mobile carts. In each location where an inventory was maintained within the sampled schools, the starting inventory was completed on the first day of the Target Week and included the following information for each food: food name, description, and brand name or code needed to ensure proper linking of food item to items on district purchasing list; bulk packaging and individual package sizes; number of bulk packages; and number of individual packages not in unopened bulk packages. On a daily basis, the number of units delivered was recorded. The inventory was repeated at the end of the Target Week. Depending on the location and stocking arrangements, individual inventory forms were completed by food service personnel or data collectors.

6. ***Meal Observation Form***. The Meal Observation Form was used to record the foods included in the meals taken by a random sample of students. These data were used to determine the distribution of reimbursable and à la carte items served. Data collectors conducted observations for each meal offered each day of the Target Week. Prior to the meal, the data collector listed all food items, including à la carte foods, in the left-hand column. As each student passed the observation point (normally the cash register), the observer checked off all items on the tray. During analysis, reimbursable meals were identified from the combination of items.

7. ***Daily Meal Counts Form.*** The Daily Meal Counts Form was used to record the number of reimbursable lunches, breakfasts, and snacks served in each school during the Target Week. In addition, the dollar amount of nonreimbursable cafeteria sales were recorded. (Cafeteria cash register totals were the basis for the nonreimbursable sales, so vending machine sales and sales in other venues were not be included.) These data were obtained from the school food service manager at each school on each day of the Target Week.

8. ***School Food Service/Kitchen Manager Interview***. The interview with the school food service manager provided data to distribute direct labor costs across the food service functions. This interview was conducted in person during the field period and included the following components:

   - The Cafeteria/Kitchen Staff Roster was mailed and completed in advance, and reviewed during the interview. The roster listed staff members along with their wage rates, and hours worked, and their status (regular, temporary, contractor).
   - The Daily Staff Allocation Grid was used to collect information on the distribution of staff time on a daily basis for a standard week. The data collector guided the respondent to complete one or more grids to represent the different staff schedules.

9. ***SFA Director Staffing and Operations Preparation Forms and Interview.*** This interview included the completion of the Central Food Service Staff Roster, the Central Food Service Staff Allocation Grid, the Support Function Summary Grid, and supplemental questions. The forms were mailed prior to the site visit, and the interview was conducted on-site by study staff with the SFA director.

   - The Central Food Service Staff Roster was used to identify all service staff that were not based in individual schools (including staff shared with other departments), but that had time charged to the food service account. Employment costs information collected for each category included the number of staff, the average wage or salary, and the hours worked. The percent of time spent on all food service tasks was identified, chiefly for shared staff.
   - The Central Food Service Staff Allocation Grid was used to collect professional estimates of the time distribution by function for central food service paid staff. Many of these staff were single-function (e.g., accountants, who only perform administrative tasks). This grid sometimes required contacts with several SFA and/or district officials (such as the district business manager, warehouse manager, etc.), so that the estimate for each staff category was as reliable as possible.
   - The Support Function Summary Grid was used to identify the support functions performed by the paid food service staff and those that were performed by other personnel of the school district or other organizations. This information was used to describe food service administration and to prepare for the Phase 2 interviews.
   - The Phase 1 Supplemental SFA Interview Questions was used to collect information on food service operations not included in other forms, including: use of owned vs. leased space and equipment; purchasing and pricing policies; types of food service operations not observed during the study period; use of technology; and the schedule for unaudited and audited financial statements.

- The data collector obtained price lists or invoices for all foods purchased by the SFA, and USDA commodity distribution forms indicating the USDA-assigned value of commodities used by the SFA.

10. ***State Education Finance Officer Questionnaire.*** This questionnaire was used to interview the State official responsible for financial accounting and reporting by local education agencies (LEAs). During the interview, the respondent provided general information on indirect cost allocation, including the State's role in setting LEA indirect cost rates and the adjustment procedures for LEA indirect cost rates.

Phase 2 Instruments

11. ***SFA Cost Interview Preparation Forms***. These forms were sent to the SFA Director, completed by the SFA Director, and returned prior to the Phase 3 SFA Director Cost Interview (described below). The purpose was to obtain information needed to prepare for the interview. The SFA Director was asked to provide the SFA's statement of food service expenses and revenues for the 2005-2006 school year. If the SFA did not have a separate statement (i.e., these data are integrated in the school district's overall financial statement), the SFA director was asked to complete the SFA Expense Statement and the SFA Revenue Statement. The SFA Director was also be asked to complete the Supplemental Information form to provide data on end of the year inventory value for purchased food and donated commodities, and counts of reimbursable breakfasts, lunches, and snacks.

12. ***SFA Cost Interview Guide.*** The SFA director and/or business manager were interviewed in-person to collect data on cost reporting, unreported costs, indirect cost allocation and charges, revenues, and cash balances. The components of the SFA Cost Interview Guide are described below.

    - Food Service Expense Statement Review Guide. Before the site visit, the data collector obtained the SFA's expense report and transferred the reported costs to the standard expense statement. The reported costs were verified during the visit, since they may have been revised in the interim. While on-site, the data collector reviewed the SFA's expense statement with the SFA Director and/or business manager to identify whether each category of potential expenses were included in reported costs, included in unreported indirect costs, or represented unreported direct costs.

    - Off-Budget District Staff Roster. The data collector reviewed the Support Function Summary Grid and identified support functions that were not charged directly to the school food service account and not included in the school district's indirect cost rate. For these functions, the data collector obtained the titles, number of staff, salary/wage rate, paid hours, percent of time spent on food service support, and status (regular, temporary, contract).

    - Off-Budget District Staff Allocation Grid. The Off-Budget District Staff Allocation Grid was used to collect professional estimates of the time distribution by function for staff listed on the Off-Budget Staff Roster. Many of these staff were single-function (e.g., secretaries, who only perform "administrative" tasks). This grid was completed with the same respondents as the Off-Budget District Staff Roster. Personnel other than the SFA Director or business manager sometimes interviewed to obtain time estimates for some

off-budget staff, if the SFA director or business manager could not provide the data. To assist interviewers and respondents, a Process Grid was used to gather data on the time spent on specific support tasks by off-budget personnel.
School District Indirect Cost Review Supplement. This instrument was used to identify the composition of indirect costs and school district practices for allocating and charging these costs to food service and other school district operations.

- Utilities and Equipment Supplement. The questions on this instrument were used to obtain estimates of utility and equipment costs for those SFAs that did not report them.
- Food Service Revenue Statement and Cash Balance Review. This instrument was used to convert the SFA's revenue statement for the 2005-06 school year into a standard format to facilitate cross-site comparisons. The instrument was completed by study staff during a review of the SFA's revenues with the SFA Director and/or business manager. Additional data on end of year cash balances was collected.

13. ***School Principal Cost Interview.*** This interview was used to identify the food service tasks performed by off-budget staff in schools and determine the amount of time spent on those tasks. The instrument was administered to the principal (or designee) in each of the sample schools.