A rotten deal for schools? An assessment of states’ success with the National School Lunch Program’s in-kind food benefit

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ABSTRACT

The National School Lunch Program (NSLP) is one of the United States’ largest domestic food aid programs. The NSLP provides states with both cash and commodity foods for school meals. This research assessed the success of the school commodity program by comparing states’ available annual funding to the value of foods that states actually received from 2001 to 2009. Results indicate that an in-kind food funding system is not desirable for schools; states failed to receive entitled commodity food value in most years, resulting in annual funding losses for schools of $35–87 million. Inconsistent funding inhibits schools’ ability to improve meals and, ultimately, child nutrition outcomes. In light of these results, it is recommended that a cash benefit should replace the National School Lunch Program’s commodity food program.

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Introduction

Context and objective

To understand the current unprecedented levels of child and adult overweight and obesity in the United States, researchers are increasingly examining the potential health impact of food and agriculture policies. To investigate such an association is a difficult research undertaking, and the evidence thus far is mixed regarding whether US food policy has a direct impact on population health (Alston et al., 2008; Beghin and Jensen, 2008; Cawley, 2010; Frieden et al., 2010; Wallinga, 2010).

One area of US food policy that has received little attention is the school commodity program, which has been a part of the National School Lunch Program for over 65 years (US Congress, 1946b). Through this program, schools receive foods purchased by the US Department of Agriculture (USDA) to support food prices (US Department of Agriculture Food and Nutrition Service, 2009). The school commodity program thus creates a direct link between US food policy and the meals that children eat at school. Therefore, an investigation of this program is a worthwhile addition to the growing body of research into nutrition and health outcomes linked to food and agriculture policies. Using national data from the USDA from 2001 to 2009, this research aimed to understand whether the in-kind school commodity program is a desirable method to provide federal funding to schools for lunch programs.

In-kind food funding for schools

States receive both cash and in-kind commodity foods from the federal government each year to support local school lunch programs. Commodity foods by law constitute 12% of each state’s federal funding for the NSLP (US Congress, 1946b; US Department of Agriculture Food and Nutrition Service, 2009). The USDA purchases and distributes commodity foods to schools worth more than $1 billion annually (US Department of Agriculture Food and Nutrition Service, 2011a). The USDA’s role in the school lunch program is both procurement agent and nutrition regulator (School Nutrition Association, 2009; US Department of Agriculture Food and Nutrition Service, 2009). Previous research has investigated other situations in which the USDA, by virtue of the unique policy-making circumstances surrounding food and agriculture in the United States, has held similar dual—and potentially conflicting—roles (Nestle, 1993; Wallerstein, 1982).

Several recent studies have analysed the effect of the NSLP’s cash funding, though few studies have considered the impact of the NSLP’s commodity funding (Ghosh and Senauer, 2009; Institute of Medicine, 2009; Neuberger and Namian, 2010; Story et al., 2009). The National School Lunch Act specifies that each state is entitled to receive the same per-lunch value of commodity foods, thus equal commodity funding to states is implicit in the NSLP’s design (US Congress, 1946b). The Act further indicates that state agencies—usually departments of education—should distribute commodity food value equally among school districts, again based on the number of lunches served. In school year 2010–2011, states and school districts were entitled to receive commodity foods valued at $0.20 per lunch served (US Department of Agriculture Food and Nutrition Service, 2011a).

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and Nutrition Service, 2011b). However, commodity foods’ relative importance to schools appears to have declined substantially over the past two decades; schools now commercially procure 85% of the foods used in school meals (Jirka and Sneed, 2007; US Department of Agriculture Food and Nutrition Service, 2007).

The NSLP’s in-kind commodity food funding is more complicated than the cash transfers that the program provides to states. Unlike cash transfers, which ostensibly ensure equal distribution of assigned funding, the objective of fair commodity funding for states is complicated by the logistics of the commodity program’s national in-kind distribution system (Food Research and Action Center, 2008). Therefore, an analysis of the actual benefit obtained by states and schools is necessary to determine whether the intended benefit of commodity foods was realized. However, it appears no previous research has examined whether the school commodity program results in an equal distribution of federal resources for school meals.

Using data from the USDA, this research examined whether each state received commodity foods worth the state’s assigned annual funding value over the past decade. This research was principally motivated by the fact that schools are under increasing pressure to address child nutrition, generally, and obesity, specifically, even while school food services are struggling to cover costs (Li and Hooker, 2010; School Nutrition Association, 2008; Wharton et al., 2008). Schools’ food service costs are estimated to exceed revenues by nearly 20%, which undermines schools’ ability to make a positive contribution to child health (Bartlett et al., 2008).

Program history and policy significance

Since the first federal commodity donations to schools in the 1930s, the school commodity program has been promoted as a means to support domestic food producers (US Congress, 1946a; US Department of Agriculture Food and Nutrition Service, 2007). But the relative impact of school commodity purchases on the agriculture sector overall appears to be minimal. In 2008, school commodity purchases equaled less than two-fifths of one percent of total US farm receipts (US Department of Agriculture Economic Research Service, 2009; US Department of Agriculture Food and Nutrition Service, 2011a).

Nevertheless, policymakers and American food producers may view school commodities as having an importance that exceeds the relative value of such purchases. Because school commodities are an element of domestic food aid in the United States, these purchases may be used without limits as general support for agriculture prices under the World Trade Organization’s Agreement on Agriculture (Schnepp, 2010). In recognition of the link between school commodities and USDA support for food prices, it has been suggested that eliminating the commodity program could reduce food producers’ current political support for school meals (Food Research and Action Center, 2008).

Prior to the 1970s, the majority of commodity foods purchased by the US government for domestic purposes went to low-income families (US Congress, 2003). However, with the rise of the Food Stamp Program (now the Supplemental Nutrition Assistance Program; a system of food vouchers, rather than in-kind foods), child nutrition programs such as the NSLP received an increasing share of the government’s commodity food purchases. From 2001 to 2009, school commodity purchases constituted 58–73% of annual government food purchases for domestic assistance (Table 1) (US Department of Agriculture Food and Nutrition Service, 2010).

Despite its longevity, the school commodity program has not been without controversy. Investigation of alternatives to the in-kind program was initiated more than three decades ago, resulting in pilot programs of “cash in lieu of commodities” and Commodity Letters of Credit (CLOC)—a voucher system—in 59 school districts (US Congress, 1994). At a congressional hearing in 1994 to decide the future of cash alternatives and CLOC, elected representatives voted to maintain the existing in-kind commodity program for schools. Despite the final ruling that the school commodity program would remain intact—and presumably in recognition that cash alternatives and CLOC had been a success—it was also decided that the pilot districts would be allowed to continue permanently

Table 1

<table>
<thead>
<tr>
<th>Program</th>
<th>2001</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area Agencies on Aging</strong></td>
<td>$307 (&lt;1%)</td>
<td>$268 (&lt;1%)</td>
<td>$208 (&lt;1%)</td>
<td>$220 (&lt;1%)</td>
<td>$135 (&lt;1%)</td>
<td>$57 (&lt;1%)</td>
<td>$31 (&lt;1%)</td>
<td>$31 (&lt;1%)</td>
</tr>
<tr>
<td>Bureau of Prisons</td>
<td>$130 (&lt;1%)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Child and Adult Care Feeding</td>
<td>$759 (&lt;1%)</td>
<td>$3008 (&lt;1%)</td>
<td>$1937 (&lt;1%)</td>
<td>$3006 (&lt;1%)</td>
<td>$2687 (&lt;1%)</td>
<td>$1682 (&lt;1%)</td>
<td>$2027 (&lt;1%)</td>
<td>$2379 (&lt;1%)</td>
</tr>
<tr>
<td>Program</td>
<td>$6801 (1%)</td>
<td>$16,102 (&lt;1%)</td>
<td>$6044 (&lt;1%)</td>
<td>$9746 (1%)</td>
<td>$3831 (&lt;1%)</td>
<td>$2768 (&lt;1%)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Charitable institutions</td>
<td>$84,496 (&lt;1%)</td>
<td>$88,379 (7%)</td>
<td>$91,255 (7%)</td>
<td>$127,575 (9%)</td>
<td>$151,664 (10%)</td>
<td>$151,780 (11%)</td>
<td>$120,419 (9%)</td>
<td>$115,802 (7%)</td>
</tr>
<tr>
<td><strong>Area Agencies on Aging</strong></td>
<td>$459 (&lt;1%)</td>
<td>$98 (&lt;1%)</td>
<td>$477 (&lt;1%)</td>
<td>$1961 (&lt;1%)</td>
<td>$9338 (1%)</td>
<td>$10,730 (1%)</td>
<td>$7061 (1%)</td>
<td>$7,327 (1%)</td>
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<tr>
<td><strong>Emergency Food Assistance</strong></td>
<td>$339,393 (27%)</td>
<td>$422,889 (30%)</td>
<td>$375,952 (28%)</td>
<td>$366,419 (25%)</td>
<td>$321,855 (21%)</td>
<td>$249,043 (18%)</td>
<td>$181,477 (14%)</td>
<td>$292,491 (18%)</td>
</tr>
<tr>
<td>Program</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Elderly Nutrition Pilot Program</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Food Distribution Program on Indian Reservations</td>
<td>$1,461 (3%)</td>
<td>$42,064 (3%)</td>
<td>$39,668 (3%)</td>
<td>$40,943 (3%)</td>
<td>$62,265 (4%)</td>
<td>$63,313 (5%)</td>
<td>$49,580 (4%)</td>
<td>$52,975 (3%)</td>
</tr>
<tr>
<td>Nutrition Program for the Elderly</td>
<td>$2,424 (&lt;1%)</td>
<td>$3050 (&lt;1%)</td>
<td>$3,117 (&lt;1%)</td>
<td>$3,756 (&lt;1%)</td>
<td>$2,766 (&lt;1%)</td>
<td>$2,612 (&lt;1%)</td>
<td>$2,673 (&lt;1%)</td>
<td>$2,425 (&lt;1%)</td>
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<tr>
<td>Summer Camps</td>
<td>$10 (&lt;1%)</td>
<td>$321 (&lt;1%)</td>
<td>$254 (&lt;1%)</td>
<td>$280 (&lt;1%)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>National School Lunch Program</td>
<td>$774,608 (62%)</td>
<td>$811,949 (58%)</td>
<td>$840,368 (62%)</td>
<td>$920,593 (62%)</td>
<td>$975,464 (63%)</td>
<td>$871,411 (64%)</td>
<td>$977,521 (73%)</td>
<td>$1,133,879 (71%)</td>
</tr>
<tr>
<td>Summer Food Service Program</td>
<td>$1901 (&lt;1%)</td>
<td>$2,126 (&lt;1%)</td>
<td>$1,476 (&lt;1%)</td>
<td>$2,896 (&lt;1%)</td>
<td>$1,760 (&lt;1%)</td>
<td>$1,401 (&lt;1%)</td>
<td>$1,633 (&lt;1%)</td>
<td>$1,193 (&lt;1%)</td>
</tr>
<tr>
<td><strong>Soup Kitchens and Food Banks</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>$19 (&lt;1%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$1,255,831</td>
<td>$1,391,695</td>
<td>$1,361,000</td>
<td>$1,495,286</td>
<td>$1,538,815</td>
<td>$1,363,850</td>
<td>$1,343,689</td>
<td>$1,601,213</td>
</tr>
</tbody>
</table>

Presented as value (% of total annual purchase value).
with cash in lieu and CLOC vouchers. Unfortunately, no research has been conducted to compare economic outcomes in cash and CLOC school districts to districts that receive in-kind commodity foods.

At the 1994 hearing, the USDA’s representative testified in support of the existing in-kind school commodity program. According to testimony, the USDA’s stance on this issue was based primarily on the assumption that individual districts could not match the USDA’s purchasing power, as well as the assumption that school districts would not utilize as much food if the commodity program ceased to be a part of schools’ funding for NSLP lunches (US Congress, 1994). Food industry representatives, including the American Commodity Distribution Association, the National Pork Producers Council, and the National Cattlemen’s Beef Association, also vigorously defended the existing school commodity program at the 1994 hearing. Those organizations asserted that the USDA was “positioned to take advantage of low prices and in the quantity necessary to assist in market stabilization” in a way that schools were not (US Congress, 1994). Further, the organizations warned that the school commodity program was the “backbone of the commodity distribution program”; one industry representative questioned what would happen to the smaller commodity programs if the school commodity program was eliminated (US Congress, 1994).

On the other side of the issue, the American Association of Classified School Employees argued strongly against the school commodity program, stating that “the current distribution pattern routes commodities through state agencies, adding a useless level of bureaucracy between commodity producers and local users of the goods” (US Congress, 1994). The Association further stressed that the USDA had demonstrated an “unbending position” regarding the school commodity program and suggested that the Department should not be in charge of assessing alternatives. Siding with the USDA and industry representatives, the School Nutrition Association positioned itself in favor of the exiting in-kind school commodity program at the 1994 hearing; it seems that the organization favored a cash alternative, rather than the proposed CLOC voucher benefit. However, the organization’s representative also expressed concern that the NSLP might not continue to be administered by the USDA if the in-kind commodity program was abandoned, and concluded that the organization was prepared to work with Congress and the USDA to improve the existing in-kind commodity program. Presently, the School Nutrition Association is campaigning for school districts to receive commodity funding for school breakfasts, in addition to the commodity food value that districts receive for lunches (School Nutrition Association, 2011).

Recent research

The USDA has long asserted that centralized procurement of school commodity foods and subsequent distribution to states results in lower food costs for schools (US Department of Agriculture Food and Nutrition Service, 2007). However, there is little evidence to support this. The most recent research from the USDA on schools’ costs to procure commodity versus commercial foods was published over 10 years ago, and included comparison of only food price (and not other cost elements of school food procurement) for just six commodity foods, though the current list of school commodity foods contains over 200 items (MacDonald et al., 1998; US Department of Agriculture Food Distribution Programs, 2011). That USDA research reported that the six commodity foods investigated were 4% to 38% cheaper than local commercial equivalents.

An analysis from Minnesota is the only other recent research to compare schools’ costs for commodity foods (Peterson, 2009). That research estimated that despite lower initial costs for commodity foods in recent years, schools paid more in labor, transportation and other costs to procure USDA commodities compared to equivalent commercial foods, resulting in greater costs overall for schools to obtain commodities. That study concluded that both food producers and schools would be better off financially if the school commodity program did not exist; food producers would receive higher prices for foods, and schools would pay less overall for foods because slightly higher food prices would be offset by savings gained from eliminating costly supply chain problems. Such findings are limited to Minnesota and would benefit from additional research in other states. Unfortunately, data required to examine school districts’ economic outcomes associated with commodity foods appears to exist only at the state and district levels, which makes a national comparison a difficult research proposition (US Department of Agriculture Food and Nutrition Service, 2010).

Program details

A brief review of the school commodity program’s operations reveals why it may be difficult for the USDA to ensure that states receive full entitled funding for school lunches through an in-kind food program. Four issues are highlighted here: reconciled funding, food price changes, supply issues, and bonus foods.

Reconciled funding

Beginning in January each year, most states solicit commodity orders from school districts based on estimated values for districts’ commodity food funding in the upcoming school year (US Department of Agriculture Food Distribution Programs, 2009). But commodity funding for states is not finalized until July each year—based on correction of administrative errors, compensation for damaged products that schools might have received, changes to the number of lunches served in the state compared to the previous year, and food price changes—or several months after most school commodity orders have been processed based on the fact that commodity orders commenced in January. Once final commodity funding values are established, states often, but not always, have the opportunity to place orders for school commodity foods if reconciliation results in additional funding.

One illustration of the problems posed by this system is a situation in which districts in a state serve substantially more lunches than anticipated in a given school year. In such a situation, the USDA would likely have delivered foods to the state that were worth less than the state’s entitled commodity funding value. For example, if it was anticipated that a state’s school districts would serve 50,000 lunches, the state would be eligible for 50,000 × $0.20 = $10,000 in commodity food value for the upcoming school year (based on the 2010–2011 reimbursement rate) and the state agency would place commodity orders accordingly. However, if the state’s school districts instead served 60,000 lunches, the state would receive a reconciled funding value of 10,000 × $0.20 = +$2000 in July and would need to place commodity food orders late in the ordering period commensurate with that increased funding. If, instead, the number of lunches served was less than anticipated, the state would be in debt to the USDA once commodity funding was reconciled.

Food prices

Food prices may change throughout the school year, which makes it difficult for the USDA to ensure that the delivered value of commodity foods for each state is equal to 12% of the state’s total NSLP funding, as mandated by the National School Lunch Act. If
food prices fall during the year, the USDA may need to assign additional commodity funding to states even if ordering has closed for the year. Take, for example, a situation in which the USDA needs to provide $100,000 in commodity food value to a particular state. If the Department anticipated that it would spend $100,000 to obtain the school commodity foods that the state requested, but ended up securing a cheaper purchase contract for $90,000 because food prices had dropped, the USDA would still owe the state $10,000 in commodity food value for that year.

Supply issues

The commodity program is subject to supply problems based on the logistical challenges of national-level food procurement and distribution to all states, as well as the issues highlighted here with respect to reconciled funding and food price changes. The only available research on the topic of supply consistency for school commodity foods is from Minnesota (Peterson, 2009). That research indicated that it was common for school districts to receive a substantially different number of commodity food cases compared to school district orders and for commodity foods to arrive later than scheduled.

Ostensibly to compensate for the difficulties imposed by reconciled funds, food price changes, and supply issues, the USDA “rolls over” states’ unused school commodity funding balances each year (US Department of Agriculture Food and Nutrition Service, 2010). While this may be regarded as a fair solution, a rollover system cannot immediately correct deficits in funding that may have significant current consequences for school food services. For example, if reconciled funding, food price changes, and supply issues resulted in a state’s receipt of only 80% of its entitlement to $100,000 in commodity foods, school districts in the state would need to find an extra $20,000 to purchase foods in the deficit year while awaiting the following year’s rollover funding.

Bonus commodity foods

States’ entitled commodity funding value (in 2010–2011, $0.20 per lunch served) is distinct from any “bonus” foods that the USDA may make available for schools during the year, which are based on a data request to the USDA. The USDA uses an electronic system to track states’ school commodity orders, which contain information back to 2001. Available data indicated each state’s annual commodity funding value. Details of the calculations that were used to assess whether differences in entitlement food value received? In other words, if states received more entitlement commodity food value than they should have while other states received less, did bonus foods ameliorate that difference?

Data on states’ commodity funding and commodity orders were obtained through a data request to the USDA. The USDA uses an electronic system to track states’ school commodity orders, which contains information back to 2001. Available data indicated each state’s annual commodity funding value, the value of entitlement and bonus foods delivered to each state, and each state’s unused commodity funding that was rolled over for use in the following year. Details of the calculations that were used to assess whether each state received its entitled school commodity food value are reported in Table 2.

### Table 2

<table>
<thead>
<tr>
<th>Measure for each state, s in each observed year, y</th>
<th>Calculation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted annual entitlement, (e_s)</td>
<td>Entitlement available, (e_s) − entitlement rollover, (e_{s,y−1})</td>
<td>Total available entitlement in state “y” for year “y” reported in the USDA data included both new entitlement and unused funds “rolled over” from the previous year (which could be positive or negative). An “adjusted annual entitlement” value was calculated to demonstrate only states’ new annual entitlement funding.</td>
</tr>
<tr>
<td>Total value of entitlement foods received, (d_s)</td>
<td>Value of entitlement foods received, (d_s) + value of DOD fresh foods received, (d_s)</td>
<td>States received two types of entitlement commodity foods, those classified simply as “entitlement”, and those delivered under the “DOD Fresh” program. The total value of entitlement foods received by each state was assessed as the value of entitlement foods plus DOD Fresh foods received.</td>
</tr>
<tr>
<td>Unused fund, (u_s)</td>
<td>Adjusted annual entitlement, (e_s) − total value entitlement foods received, (d_s)</td>
<td>The total value of unused food funds—where a positive value indicated that assigned commodity food value was not received and a negative value indicated that a state received more food value than it was entitled to—was calculated as the state’s adjusted annual entitlement minus the total value of entitlement foods the state received.</td>
</tr>
</tbody>
</table>
| Total value of commodities received, \(c_s\) | Value of bonus foods received, \(c_s\) + total value entitlement foods received, \(d_s\) | The value of bonus foods received by states was reported in the USDA data. The total value of entitlement and bonus foods received by states was assessed as the total value of entitlement foods plus bonus foods received.
Results

Value of commodity foods received compared to available funding, all states

From 2001 to 2009, the value of entitlement commodity foods that states received each year from the USDA was less than the value the states should have received, with the exception of 2008 (Table 3). That year, high food price rises or a decreased number of NSLP lunches served are perhaps the reason that the USDA delivered an excess of $168,000 worth of entitlement commodity foods across all states (School Nutrition Association, 2008; Trostle, 2008). With the exception of 2008, states failed to receive between 3% and 10% of annual commodity funding, representing funding losses for schools of $35–87 million annually. Although states collectively failed to obtain entitlement commodities equal to annual funding for most years, the value of bonus foods distributed by the USDA pushed the total value of school commodities that states received for most years, the value of bonus foods distributed by the USDA pushed the total value of school commodities that states received over assigned funding values for five of the nine years observed. The value of bonus foods delivered to states annually varied from $8 to $184 million (Table 3).

Value of commodity foods received compared to available funding by state

Table 4 reports cumulative available commodity funding for each state from 2001 to 2009, as well as entitlement food value received, annual unused commodity funds, and bonus food value received. Over the observed period, not one state received exactly its entitled value of commodity foods. Individual states received entitlement foods worth 98% (Montana) to 102% (Missouri) of assigned funding value, representing a cumulative funding loss of $533,000 and a funding surplus of $3.4 million, respectively, over the observed period (not adjusted for inflation). Bonus foods exacerbated the uneven distribution of commodity food value among states by increasing the range between the lowest and highest commodity value received as a percentage of entitled funding. While entitlement commodity value received as a percentage of available funding ranged from 98% to 102%, total commodity value received— including bonus foods—ranged from 104% (Washington, DC) to nearly 120% (Nebraska).

Value of commodity foods received compared to available funding by state by year

The total commodity food value received by individual states for school lunches over the full observed period in Table 4 could not reveal annual fluctuations in commodity funding that individual states may have experienced from 2001 to 2009. Fig. 1, therefore, reports the annual maximum and minimum of unused entitlement commodity funds (excluding bonus foods) for each state annually. Negative balances indicate that a state received more than its assigned value of entitlement commodity foods, while positive balances indicate that a state received less than it should have in terms of entitlement commodity foods. In absolute terms, individual states failed to obtain between $122,056 (North Dakota, 2006) and over $27 million (California, 2001) worth of entitlement commodity foods annually, while other states received annual excesses of $7000 (Montana, 2001) to $6 million (California, 2008) worth of entitlement foods. Annual data by state revealed that 18 states received less than 80% of commodity funding value as entitlement foods at least once from 2001 to 2009, while 37 states received entitlement foods worth more than the state’s commodity funding at least once. Hawaii, Maine, Missouri, Nebraska, Vermont, and Wyoming fared the best among all states, each receiving entitlement foods valued in excess of assigned commodity funding at least 4 of the 9 years observed. (Annual data for each state not demonstrated.)

Discussion

This research aimed to understand whether the NSLP’s in-kind school commodity program achieved an equal and efficient distribution of federal resources for school meals. Based on a review of USDA data, it appears that the in-kind food program is not a desirable funding method.

The commodity program performed well at the national level from 2001 to 2009—delivering a cumulative 99.5% of commodity funding value to states as entitlement foods—though a closer analysis revealed both annual disparities and disparities among states. The USDA delivered excess annual commodity value to many states in the observed period, while other states received less than assigned funding. For many states, bonus foods compensated for commodity funding value that the states had not obtained as entitlement foods. However, this is problematic for at least three reasons. Bonus foods are not an assured part of schools’ funding and there was wide variation in the value of bonus foods available to schools over the years examined for this assessment. The number of bonus foods offered annually compared to entitlement foods is usually small (as described in the Introduction), which means schools have little choice among bonus foods. Finally, while the National School Lunch Act mandates an equal distribution of entitlement foods among school districts, there is no such requirement for bonus foods (US Congress, 1946b).

Table 3
School commodity funding outcomes, all states. Source: USDA Commodity Food Network data.

<table>
<thead>
<tr>
<th>School year</th>
<th>Annual entitlement commodity funding</th>
<th>Value of entitlement foods delivered</th>
<th>Unused entitlement funds</th>
<th>Value received as% of available entitlement funding (%)</th>
<th>Value of bonus foods delivered</th>
<th>Total value of commodity foods (entitlement + bonus) delivered as% of entitled funding (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>$771,091,245</td>
<td>$704,578,144</td>
<td>$66,513,101</td>
<td>91.4</td>
<td>$56,375,980</td>
<td>98.7</td>
</tr>
<tr>
<td>2002</td>
<td>$760,215,062</td>
<td>$721,193,601</td>
<td>$39,025,461</td>
<td>94.9</td>
<td>$76,951,172</td>
<td>105.0</td>
</tr>
<tr>
<td>2003</td>
<td>$837,255,146</td>
<td>$750,400,163</td>
<td>$86,854,983</td>
<td>93.6</td>
<td>$78,024,261</td>
<td>98.9</td>
</tr>
<tr>
<td>2004</td>
<td>$837,756,214</td>
<td>$762,192,011</td>
<td>$75,564,203</td>
<td>91.0</td>
<td>$144,847,302</td>
<td>108.3</td>
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<tr>
<td>2005</td>
<td>$848,270,631</td>
<td>$775,612,839</td>
<td>$72,657,792</td>
<td>91.4</td>
<td>$183,556,458</td>
<td>113.1</td>
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<tr>
<td>2006</td>
<td>$867,944,326</td>
<td>$825,331,241</td>
<td>$42,413,085</td>
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<td>100.0</td>
<td>$17,183,522</td>
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<td>2009</td>
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<td>$1,005,289,397</td>
<td>$3,843,505</td>
<td>96.7</td>
<td>$147,021,510</td>
<td>110.8</td>
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</table>

Note: Includes all states and Washington, DC. Annual available entitlement is less than Table 1 NSLP annual total because non-states (such as Puerto Rico and Virgin Islands) are not included here.

* Includes rollover funding from the previous year.
Most states use electronic systems to solicit commodity food or-
commodity foods received. No previous research had been published on this topic, which prevented further investigation of this concept. Further, the USDA data did not indicate states' ordering or administrative procedures related to commodity foods; therefore, further investigation of this issue would require data from state agencies or school districts. Available USDA data also did not indicate how commodity foods were distributed among school districts within states. Given the disparities in school commodity food funding among states that were revealed by this research, it would be useful to know whether such disparati
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The overall limitation of this research was a lack of relevant litera-
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causes and consequences of the funding discrepancies identified through this analysis of USDA data. Additional research could further inform a policy discussion; such a discussion is, at this point, necessarily based on interpretation of the results presented here and a review of literature that is related, but does not directly address, the issue of in-kind commodity foods as funding school meals.

Policy options and future research

Based on this analysis, there are four options to improve schools’ funding for the National School Lunch Program by changing the existing in-kind commodity food program.

First, it seems that states and school districts should have an opportunity to “cash out” unused commodity funding balances...
annually, rather than having balances rolled into the following school year. The existing rollover system for school commodity funding may be regarded as the best option, given the complexities of the in-kind food program. However, based on the analysis presented here, the rollover mechanism did not prevent substantial annual funding fluctuations for school food services in some states, nor did it prevent some states from receiving more than their share of commodity food value in some years while other states lost out. Despite the potential merits of a “cash out” option for schools, such a change would likely require a major overhaul of the current school commodity program. The USDA would presumably need to “recall” funds from those states and school districts which had, likely through no fault of their own, received excess food value in a given year so that the USDA could “cash out” the districts that had failed to receive their full entitled food value.

The second option for policy change is to replace the in-kind commodity program with a food voucher program for schools. While at present there is no research on economic outcomes for the limited number of school districts that receive Commodity Letters of Credit vouchers—rather than in-kind commodity foods—it seems that a voucher system could offer advantages over the existing in-kind system. Therefore, a reasonable next step would be to investigate the motivations for food producers’ apparent support of the school commodity program with increased cash funding for schools. Instead, those with particularly effective managers or those in close proximity to the state warehouses that initially receive USDA commodity deliveries—may benefit disproportionately from bonus foods. Therefore, any decision to increase the availability of bonus foods for schools would benefit from further assessment of the fairness of bonus foods as funding for school meals.

Conclusions

This analysis provided evidence that states had very different success in obtaining entitled commodity food value under the existing in-kind system for school commodity foods. The results of this research indicated that the NSLP school commodity program is not efficient, given that many states did not receive full funding in recent years, nor, arguably, should the program be regarded as fair, given that some states clearly benefited financially from the program (by receiving excess commodity food value in some years) while other states did not, even if such disparities do not appear to have been systematic.

Both schools and food producers are unquestionably worse off under a system that fails to purchase and deliver the annual assigned value of school commodity foods; according to this research, that is what is currently occurring under the school commodity program. It appears no recent research has directly investigated the motivations for food producers’ apparent support of the school commodity program. This issue seems to merit investigation, given that the results of this research and a recent cost analysis of commodity versus commercial food procurement have suggested that food producers would benefit from replacing the current in-kind commodity food program with an additional cash benefit for schools (Peterson, 2009). Given that schools currently request commodity foods, it does not seem reasonable to assume that schools would utilize less food for school lunches in the absence of the commodity program. Moreover, this issue could be put to rest relatively quickly through an empirical assessment to compare food purchases among school districts that receive cash in lieu of commodities or CLOC vouchers to in-kind commodity school districts.

At present just 4–7% of school offers lunches to students that meet all of the USDA’s nutrition requirements (Gordon et al., 2007). To improve the quality of school meals, schools require funding for staff training, and new cooking and food processing equipment (School Nutrition Association, 2008). Annual funding fluctuations like those demonstrated here for commodity foods, therefore, may have a negative impact not only on schools’ financial outcomes, but also school nutrition outcomes. Although the school commodity program is intended to provide a convenient method to support domestic agriculture while contributing to child health, this research has provided evidence that a national in-kind food program is not a desirable method to fund school meals.

References

Food Research and Action Center, 2008. Commodity Foods and the Nutritional Quality of the National School Lunch Program: Historical Role, Current Options, and Future Potential. Washington, DC.