Nutrition Standards in the National School Lunch Program and USDA Commodities
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Objective
To examine changes, at the national and State level, in the types of foods obtained through the Department of Defense (DoD) procurement system overseen by the DoD Defense Logistics Agency of Philadelphia.

Overview
In 2012, the U.S. Department of Agriculture (USDA) updated nutrition standards used in the National School Lunch Program (NSLP). A major change was an increase in the types and quantities of fruits and vegetables required to be offered.

- Standards apply to the 100,000 public and private nonprofit schools participating in the NSLP in FY2012 and serving about 30 million lunches per day (USDA, ERS, 2012).
- States have an incentive to comply because USDA reimburses them for the cost of meals served through the NSLP.
- AMS-purchased and DoD fresh food
- AMS-purchased Foods: AMS buys bulk food commodities including a wide range of foods such as meats, poultry, cheese, pasta, and rice, as well as fruits and vegetables
- AMS-purchased foods used in the National School Lunch Program rose sharply after the change in meal nutrition standards as the worth of DoD Fresh Foods tripled.

Types of reimbursements
- Per meal cash reimbursements for all meals served in the NSLP. Rates vary on the basis of students’ household incomes with higher rates provided for meals served to students from low-income households.
- Entitlement funds for acquisition of food commodities provided by USDA Foods Program. Funds are provided on the basis of number of lunches served, at same level for all lunches, regardless of student income status.


Background
States are granted USDA entitlement funds based on the number of lunches served and quantities of fruits and vegetables used in school meals. Fresh fruit and vegetables from USDA Foods are acquired through the NSLP.

In 2012, the U.S. Department of Agriculture (USDA) updated nutrition standards used in the National School Lunch Program (NSLP). All other food is obtained through the NSLP.

- Nutrition Standards in the National School Lunch Program rose sharply after the change in school meal nutrition standards. Fresh fruit and vegetables from USDA Foods are acquired through the NSLP.

 AMS Fruits Entitlement funds = AMS-Purchased Foods + DoD Fresh Foods

Nationwide, after change in school meal nutrition standards, more of available USDA Foods funds were spent on DoD Fresh Foods. The value of USDA Foods used in the National School Lunch Program rose sharply after the change in school meal nutrition standards as the worth of DoD Fresh Foods tripled.

Research Question:
What factors drove greater use of DoD Fresh by some States?

The Empirical Model:
The impact of change in nutrient standards on use of DoD Fresh fruit and vegetables.

\[ \text{Entitlement value of DoD Fresh and AMS-purchased foods over 2007-17 for five States with lowest and highest use of DoD Fresh and AMS-purchased foods over 2007-17.} \]

Econometrics: there is dynamic panel bias. Therefore we use a dynamic panel estimator in a fixed effects model.

How to Interpret the Results
- Negative sign: Decrease in use of entitlement funds for acquisition of DoD Fresh fruit and vegetables.
- Positive sign: Increase in use of entitlement funds for acquisition of DoD Fresh fruit and vegetables.

Findings Indicate
- Use of both USDA, AMS-purchased foods and DoD Fresh growing at a faster rate.

Results
Estimates of association between the change in NSLP nutrition standards and use of DoD Fresh Foods per lunch at the State level over 2003-17 are examined using a dynamic panel estimator in a fixed effects model.

Table 1
Share of DoD Fresh over 2007-17 using fixed effects and “within-group” estimator

<table>
<thead>
<tr>
<th>State</th>
<th>Top 5</th>
<th>Bottom 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Change in nutrition standards</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Trend*after nutrition standards change</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Top quintile (D)</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Top quintile*after nutrition standards change</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Top quintile interacted with trend, after nutrition standards change</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Source: USDA, Economic Research Service calculations based on a fixed effect estimator.

How to Interpret the Results
- Negative sign: Decrease in use of entitlement funds for acquisition of DoD Fresh fruit and vegetables.
- Positive sign: Increase in use of entitlement funds for acquisition of DoD Fresh fruit and vegetables.

Findings Indicate
- Use of both USDA, AMS-purchased foods and DoD Fresh growing at a faster rate.

- There was a sharp increase in the trend in the use of entitlement funds to purchase DoD Fresh Foods in vegetables after nutrition standards update.
- Interaction effects indicate that by 2017, the change in standards led to a $0.08 per lunch increase in acquisition of DoD Fresh fruit and vegetables.
- The highest users of DoD Fresh before 2007 increased their use more than other States. The lowest users did not change significantly.

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