The Impact of Regional Food Cost Differences
on the TFP Recommendations

Ge Zhang\textsuperscript{1}, Wen You\textsuperscript{1}, Andrea Carlson\textsuperscript{2}, and Biing-Hwan Lin\textsuperscript{3}
\textsuperscript{1}Virginia Polytechnic Institute and State University
\textsuperscript{2}Center for Nutrition Policy and Promotion, USDA
\textsuperscript{3}Economic Research Service, USDA

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Food Prices All Over U.S.A.

Food prices are different across regions.
- Examining regional prices of 11 grocery items from year 2004 to year 2007, USDA-ERS shows that comparing to national average prices in Northeast are 8% higher and prices in Midwest are 6% lower.

Food prices are even different within regions.
- Examining three different areas of New York State, the actual food cost ranges from 93% to 111% of the USDA Thrifty Food Plan (TFP) cost (Crockett, Clancy and Bowering, 1992).
- Several other studies have also found that local food cost is higher than the TFP cost (Morrison, 1990; Food Research and Action Center, 1985; Neuhouser, 1988).

Americans Are Eating Out.

Need for FAFH is sizable across all income strata
- Low income households' FAFH share: ~27%
- High income households' FAFH share: >50%
(Stewart and Bisard, 2006)

The USDA Thrifty Food Plan
- Provides annual updates to the maximum allotments for the Supplemental Nutrition Assistance Program (SNAP) benefits
- Provides a nutritious and economical dietary pattern recommendation that is as similar as possible to low-income consumers' diet
- Adapts a national average price for calculation
- Assumes that all foods are prepared at home

The Research Objective
- Uses the average regional prices for each of the four regions (i.e. Northeast, Midwest, South and West) into the expanded TFP_FAFH model.
- Provides insights for designing more effective nutrition intervention programs.

Model

Instead of having 1 model for the entire country, we have 1 model for each region. Similar model structure as the TFP and same data sources were used.

The Framework
- The TFP model outline

- The regional model
- Cost: no larger than TFP amount if possible. Increased by $0.10 at a time if needed until feasible solutions were reached. (using the regional price data)
- Nutrients and adherence constraints are allowed to be met through two sources: FAH + FAFH
- FAFH consumption solution is allowed to be zero

The Data
- The TFP Model
  - 2001-2002 National Health and Nutrition Examination Survey (NHANES)
  - 1997-2005 Dietary Reference Intakes
  - 2005 Dietary Guidelines for Americans
  - 2005 MyPyramid Food Guidance System
  - 2001-2002 Center for Nutrition Policy and Promotion (CNPP) Food Prices Database
- The regional Model
  - Same datasets as the TFP model except price
  - NHANES data provides FAH and FAFH current consumption patterns and nutrient profiles
  - We apply a constant 77% markup to FAFH to generate FAFH price data.

Nutrient Composition
- Both the regional plan and the TFP plan:
  - contain Less fat and adequate most of the micronutrients
  - favorably current low-income consumption patterns

Food Groups consumptions

<table>
<thead>
<tr>
<th>Componenents</th>
<th>MyPyramid</th>
<th>TFP</th>
<th>FAFH</th>
<th>Current</th>
<th>North East</th>
<th>Midwest</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fruit</td>
<td>8.0</td>
<td>8.4</td>
<td>3.9</td>
<td>8.61</td>
<td>8.4</td>
<td>8.62</td>
<td>8.51</td>
<td></td>
</tr>
<tr>
<td>Total grains</td>
<td>25.2</td>
<td>29.4</td>
<td>29.1</td>
<td>29.7</td>
<td>30.2</td>
<td>29.6</td>
<td>29.9</td>
<td></td>
</tr>
<tr>
<td>Diary</td>
<td>11.0</td>
<td>11.7</td>
<td>6.93</td>
<td>11.8</td>
<td>11.6</td>
<td>11.8</td>
<td>11.8</td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td>23.0</td>
<td>24.7</td>
<td>23.0</td>
<td>24.7</td>
<td>26.0</td>
<td>24.7</td>
<td>24.7</td>
<td></td>
</tr>
<tr>
<td>Meat &amp; beans</td>
<td>Total Vegetable</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>Oils</td>
<td>112</td>
<td>120</td>
<td>65</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>Discretionary</td>
<td>1115</td>
<td>1250</td>
<td>3044</td>
<td>1214</td>
<td>1261</td>
<td>1230</td>
<td>1221</td>
<td></td>
</tr>
<tr>
<td>Calories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results

Results are presented for a TFP Reference Family of Four: a male and a female age 20-50 yrs and two children aged 9-11 yrs and 6-8 yrs.

Cost and Adaptability
- Weekly Food Costs for the family of four:

<table>
<thead>
<tr>
<th>TFP_FAFH</th>
<th>Northeast</th>
<th>Midwest</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>112.95</td>
<td>123.54</td>
<td>121.15</td>
<td>124.34</td>
<td>123.54</td>
</tr>
</tbody>
</table>

All the four regional costs are higher than the one calculated using the national average price.

Energy Density (ED) (unit: kcal/g)
Lower ED: low in fat and high in moisture and fiber

<table>
<thead>
<tr>
<th>TFP_FAFH</th>
<th>Northeast</th>
<th>Midwest</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.07</td>
<td>1.05</td>
<td>1.05</td>
<td>1.05</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Findings
- FAFH in moderation and with appropriate portion sizes can be a part of a nutritious yet economical diet
- All the four regional costs are higher than the TFP cost, but are all quite healthy in comparable of the TFP recommendations
- The low-income people’s current consumption patterns are very unhealthy, and needs significant reductions of current FAFH

Adapting the regional food prices into the TFP calculation is important for effective nutrition education interventions