Using Scanner Data
To Answer Food Policy Questions

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Food Purchases by WIC Households: Use of Scanner Data

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Using Scanner Data to Answer Food Policy Questions – June 2011
Questions addressed

• How reliable is the WIC “participation” information?
  • Special Supplemental Nutrition Program for Women, Infants and Children
• Are we able to identify acquisition of WIC-approved foods?
• Does WIC affect food acquisition of eligible households?
  • Do participants and non-participants differ in their purchases of WIC approved foods?
WIC household purchases

• WIC participating households receive vouchers for “purchase” of WIC-approved foods
• The “voucher” (or EBT equivalent) allows the acquisition of the qualifying amount of the food
AC Nielsen HomeScan Data

• Panelists scan all products with a bar-code regardless of payment method
• For an “ACNielsen” retailer
  • No price entry prompt
  • “Price” from the retailer data
• Method of payment for entire purchase
  • Last panelist entry prompt
  • Cash, check, credit/debit and other
  • No individual item prompt
Data

• ACNielsen HomeScan data – 2006, 2007
• Demographic and Dairy files
• Included households with purchases in 10 of the 12 months in a given year
• Focus on purchases of WIC-approved foods: milk, cheese and eggs
## WIC Reporting Households

<table>
<thead>
<tr>
<th>WIC - Current</th>
<th>Nielsen 2006</th>
<th>Nielsen 2007</th>
<th>NHANES 2007-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIC report</td>
<td>248 (0.66%)</td>
<td>747 (1.18%)</td>
<td>1,731 (17.1%)</td>
</tr>
<tr>
<td>Blank/ Missing</td>
<td>37,546 (99.3%)</td>
<td>62,603 (98.8%)</td>
<td>8,418 (82.9%)</td>
</tr>
</tbody>
</table>
## WIC Eligible Households

<table>
<thead>
<tr>
<th>Low Income Households (&lt;200% PIR)</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIC reporting</td>
<td>139</td>
<td>398</td>
</tr>
<tr>
<td></td>
<td>(6.5%)</td>
<td>(8.5%)</td>
</tr>
<tr>
<td>Blank/Missing</td>
<td>2014</td>
<td>4276</td>
</tr>
<tr>
<td></td>
<td>(93.5%)</td>
<td>(91.5%)</td>
</tr>
<tr>
<td>Total WIC eligible</td>
<td>2153</td>
<td>4674</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Eligible: Children age 1 through 4 years; Female age 14-44 years; low income. Purchases: 10 of 12 months Dairy purchase.
## Monthly Milk Expenditures

<table>
<thead>
<tr>
<th>Variable</th>
<th>2006 WIC</th>
<th>2006 Not WIC</th>
<th>2007 WIC</th>
<th>2007 Not WIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expend (§)</td>
<td>12.7</td>
<td>10.4</td>
<td>15.8</td>
<td>12.0</td>
</tr>
<tr>
<td>Quantity (oz)</td>
<td>551.0</td>
<td>476.3</td>
<td>602.3</td>
<td>480.4</td>
</tr>
<tr>
<td>Income (§)</td>
<td>26,726</td>
<td>26,631</td>
<td>27,061</td>
<td>28,392</td>
</tr>
<tr>
<td>PIR</td>
<td>119</td>
<td>134</td>
<td>121</td>
<td>135</td>
</tr>
<tr>
<td>HH size</td>
<td>4.7</td>
<td>3.9</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>No. Obs.</td>
<td>139</td>
<td>2014</td>
<td>398</td>
<td>4276</td>
</tr>
</tbody>
</table>
Beverage Purchases

• Question: Does WIC affect beverage purchases?
• Analytic Sample:
  • Pooled 2006 & 2007 WIC households
    • 574 WIC households (25%)
    • 1751 random sample of non-WIC (75%)
    • Excluded second year of duplicated households (128)
• Beverages: Soda, 100% Juice, Milk, Other
Estimation Methods

• Households with zero purchases
  • Soda: 234 (10.1%)  Milk:  34 (1.6%)
  • Juice: 342 (15.6%)  Other: 245 (11.2%)
• Estimation methods
  • Censored single equation AIDS model
• Variables: unit values/prices; total beverages expenditures; household size
Summary of Results: Beverage Purchases & WIC

<table>
<thead>
<tr>
<th>Beverage</th>
<th>WIC</th>
<th>Household Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soda</td>
<td>negative</td>
<td>negative</td>
</tr>
<tr>
<td>Juice</td>
<td>positive</td>
<td>positive</td>
</tr>
<tr>
<td>Milk</td>
<td>positive</td>
<td>positive</td>
</tr>
<tr>
<td>Other drinks</td>
<td>negative</td>
<td>negative</td>
</tr>
</tbody>
</table>

Model: Censored AIDS with household size; $\alpha = 0.10$
Conclusions

- WIC participation during year is underreported, although likely is imprecise
  - Issue: Current vs. any time?
  - Eligibility: We chose narrow screens
- Scanner data allow detailed identification of WIC foods
  - Use of WIC voucher can not be identified
  - Use of detailed state regulations may be required
Conclusions

• Does WIC affect food acquisition of eligible households?
  • WIC households purchase
    • Less soda and other drinks
    • More juice and milk
  • Preliminary evidence supports use of scanner data for analysis of WIC purchases
    • Caveats on identifying WIC households
Acknowledgments

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• USDA Economic Research Service