Trade-offs in Parental Spending on Children: Apparel vs. Education

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Background

Mark Lino (USDA – 2016): In 2013 a family in the Higher Income Level (Income greater than $106,500), spent approximately 24% of their income on children. By contrast, a family in the Lower Income Level (Income less than $61,500) spent 17%.
Literature Review


- Charles (2007): Blacks and Hispanics spend about 30% more on visible goods, after accounting for differences in permanent income. Found that, “This is not really about race in the end. It is simply about what we observe about you and what peer group you belong to.”
Literature Review

- Paulin (2002): Differences in expenditure patterns among families headed by single fathers vs. those headed by single mothers attributable to income, marital status, age.

- Veblen (1899): “Conspicuous consumption of valuable goods is a means of reputability to the gentleman of leisure," and "failure to consume a mark of demerit."
Sample Description

- Pooled sample of 79,843 Consumer Units (CU’s).
  - Each included at least one child under the age of 18 who was the child of the reference person.
  - Used CE Interview Survey data from 2004 to 2015 Public-Use Microdata (PUMD).
- Excluded CU’s with negative income.
# Income Groups

## Figures in 2015 $US

<table>
<thead>
<tr>
<th>Income Quintile</th>
<th>Min</th>
<th>Max</th>
<th>Median</th>
<th>Mean</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quintile 1</td>
<td>($2,618.85)</td>
<td>$7,996.30</td>
<td>$5,954.55</td>
<td>$5,714.20</td>
<td>20135</td>
</tr>
<tr>
<td>Quintile 2</td>
<td>$7,996.58</td>
<td>$11,726.21</td>
<td>$9,857.49</td>
<td>$9,851.92</td>
<td>20134</td>
</tr>
<tr>
<td>Quintile 3</td>
<td>$11,726.32</td>
<td>$16,158.93</td>
<td>$13,778.86</td>
<td>$13,839.23</td>
<td>20134</td>
</tr>
<tr>
<td>Quintile 4</td>
<td>$16,159.12</td>
<td>$22,944.26</td>
<td>$19,036.93</td>
<td>$19,204.70</td>
<td>20134</td>
</tr>
<tr>
<td>Quintile 5</td>
<td>$22,944.38</td>
<td>$385,880.80</td>
<td>$30,028.28</td>
<td>$34,777.28</td>
<td>20134</td>
</tr>
</tbody>
</table>
Expenditure Categories

- Focus on categories that we can reasonably assume are directly attributable to children under 18 years of age.
  - Education
  - Apparel
  - Child care

- Calculated expenditure shares as shares of the total of the above expenditures only.
Expenditure Shares by CU’s Income Quintile

- Quintile 1: 100% Apparel
- Quintile 2: 75% Apparel, 25% Child Care
- Quintile 3: 50% Apparel, 25% Child Care, 25% Education
- Quintile 4: 25% Apparel, 50% Child Care, 25% Education
- Quintile 5: 0% Apparel, 100% Child Care, 100% Education
Expenditure Shares by Education of the Reference Person

- Apparel
- Child Care
- Education

Percentage Share

Education Level

Less than HS

HS Grad

Some College / Associate's

Bachelor's or higher
Expenditure Shares by Race of the Reference Person

Race of the Reference Person

- White
- Black
- Other

Percentage Share

- Apparel
- Child Care
- Education
Distribution of Race of the Reference Person Across Income Quintiles

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quintile 1</td>
<td>Black: 100%</td>
</tr>
<tr>
<td>Quintile 2</td>
<td>Black: 75%</td>
</tr>
<tr>
<td>Quintile 3</td>
<td>Black: 50%</td>
</tr>
<tr>
<td>Quintile 4</td>
<td>Black: 25%</td>
</tr>
<tr>
<td>Quintile 5</td>
<td>Black: 0%</td>
</tr>
</tbody>
</table>
Calculating Elasticities

- **Standard equation**

  \[
  \frac{\Delta \text{Quantity}}{\Delta \text{Income}} = \frac{\partial Q}{\partial I} \times \frac{I}{Q}
  \]

- **Calculating elasticity using a Cragg double-hurdle model**

  - Transform distribution using Box-Cox
  - \( \beta_1 \) = Coefficient on total outlays
  - \( \epsilon_d = \left( \beta_1 \times \frac{\partial I}{\partial Q} \right) \times \left( \frac{I}{PQ} \right) \)
# Elasticities

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>ALL</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>1.725</td>
<td>0.899</td>
<td>1.516</td>
<td>1.25</td>
<td>1.32</td>
<td>1.491</td>
</tr>
<tr>
<td>Child Care</td>
<td>0.198</td>
<td>0.286</td>
<td>0.079</td>
<td>0.121</td>
<td>0.079</td>
<td>0.148</td>
</tr>
<tr>
<td>Apparel</td>
<td>0.279</td>
<td>0.265</td>
<td>0.298</td>
<td>0.252</td>
<td>0.234</td>
<td>0.236</td>
</tr>
</tbody>
</table>
Elasticities by Income Group
Elasticities by Race

- Education
- Child Care
- Apparel

- Black
- Other Group
- White

Elasticity

0.5
1.0
1.5
Summary

Our findings support Omori’s finding that household income and parent’s education affects expenditures on education and books.

We find that non-whites spend more on “visible goods” relative to their total income, as posited by Charles, et al., because of the distribution of races across the income quintiles, but income elasticities of demand are consistent across both racial and income groups.
Contact Information

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