Introduction

• Determining whether someone is poor is conceptually simple
  – Poor are those individuals whose economic resources are insufficient to meet a socially determined level of need

• Determining the level of need is complicated, choices
  – What needs
  – Whose needs
  – How to set
  – How to update

• Each choice involves subjective judgment
  – True of resources but less so
    • Once decisions for threshold are made
    • Measure of resources that is consistent conceptually follows
National Academy of Sciences Recommendations

• 2.1-2.4 A poverty threshold with which to initiate a new series of official U.S. poverty statistics should be derived from Consumer Expenditure Survey [CE] data for a reference family of four persons (two adults and two children)

  – Basic bundle – food, clothing, shelter, utilities (FCSU)
  – Percentage of median expenditures
  – Multiplier for other needs
  – Updating to reflect real growth in consumption

• 3.1 Adjustments

_The NAS recommended a Procedure._
Concepts Used to Define Thresholds

- **Spending**
  - How much does one need to spend to meet basic needs?

  *But* ... for some needs, such as housing, spending does not equal consumption (e.g., subsidized, own)

- **Consumption**
  - How much does it costs, or what is the consumption value, to meet basic needs?
Caution....

- For a more complete consumption based threshold, would also need data on ...
  - School breakfast, school lunch, WIC
  - Energy assistance
  - Clothing assistance
  - Goods and services received as gifts ("net" value of gifts)

- And some comparable values would be added to resources for consistency
Thresholds Defined in Terms of...

• Spending
  – All spending (Official poverty threshold)
  – FCSU without principal payments (CE-defined)
  – FCSU with principal payments (OOP)

• Spending and Consumption
  – Expenditures with adjusted for select consumption
    (e.g., rental equivalence for owner-occupants, market
    value of subsidized and rent-control housing)
Research on Shelter in Thresholds

- CE-Defined and “rent” of owner-occupied housing
  - Johnson, Shipp, and Garner (1997)
  - Short, Garner, Johnson, and Doyle (1999 Census report)
  - Garner and Short (2001)

- OOP
  - Garner (2005) and Short (2005)
  - Garner and Short (forthcoming Review of Income and Wealth)

- All of the above
  - Garner (2009 - ASA, Brookings)

- Plus renter subsidies in thresholds
  - Garner and Rozaklis (1999, 2001)
  - Betson (2009 - Brookings)
Previous Threshold Specifications

(NAS) BLS Threshold = \[\frac{(1.15 \times 0.78 \times \text{Median}) + (1.25 \times 0.83 \times \text{Median})}{2}\]  \hspace{1cm} (1)

- Update by changes in median FCSU each year
- Assumption: percentages of the median are held constant at the values that were used by the Panel for the 1992 thresholds

\[\text{MAP Threshold} = 1.20 \times 33^{\text{rd}} \text{ percentile}\] \hspace{1cm} (2)

- Update by changes in 33\textsuperscript{rd} percentile of FCSU expenditures each year
- Assumption: 33\textsuperscript{rd} percentile changes each year
# NAS and MAP Thresholds

<table>
<thead>
<tr>
<th>Reference Unit</th>
<th>Official</th>
<th>NAS (BLS-Census)</th>
<th>MAP* (Garner 2009b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All reference families</td>
<td>$23,244</td>
<td>$23,465</td>
<td>$25,680</td>
</tr>
<tr>
<td>Owners with mortgages and renters-market rent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owners without mortgages (and renters no rent paid)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*purchase similar quality shelter*
Purposes of This Study

• Continue and extend our examination of the sensitivity of poverty thresholds to the definition of shelter

• Examine the impact of different updating mechanisms

• Study the change in the real value of the thresholds over time

• Examine the impact of basing the thresholds on the behavior of reference families only or on all consumer units
Motivation

• Shelter accounts for the largest single share of the threshold; share increasing
  – 31.3 % in 1996
  – 35.6 % in 2005 (shelter + utilities ~ 50%)

• In none of the previous research has the MAP legislation updating mechanism been used

• Real value of thresholds over time has not been examined since the Panel’s report

• Relative small sample of reference families
  – in 2005: ~ 9000 reference families (8.45 % household types or 14 % of U.S. population)
What We Don’t Do

- Suggest a specific choice as optimal
- Present consistent measure of resources
- Present differences in the choices in terms of the percentage of people who are poor
FCSU Threshold: Spending

• **CE-Defined**
  - Food (includes Food Stamps value)
  - Clothing
  - Utilities (includes telephone)
  - For renters, shelter expenditures
  - For homeowners, non-vacation shelter expenditures that include
    • Mortgage interest payments
    • Prepayment penalties
    • Property taxes
    • Maintenance, repairs, insurance and other related expenditures

• **Out-of-pocket**
  - CE-defined + mortgage principal repayments
Potential Problems with Shelter Spending and Possible Solutions

• **Homeowners without a Mortgage**
  – Drop from the determination of OOP FCSU
  – Adjust the OOP FCSU amount for Homeowners without a mortgage to reflect the OOP FCSU amount they would have had a mortgage payment

• **Renters with Subsidized Rental Payments**
  – Drop from the determination of OOP FCSU
  – Impute a rental payment that they would have made if they were not subsidized

• **Owners and renters treated differently**
  – Include market value of meeting shelter needs
  – Imputed market rent for subsidized housing, rental equivalence for owners
Adjustment to FCSU: Homeowners without a Mortgage

\[ \ln(\text{FCSU/Spending on other goods}) = 13.0333 - 1.6825 \ln(\text{Intot}) + 0.0480 \ln(\text{Intot})^2 - 0.7065 \text{ No Mortgage} \]
Imputed Rents for Subsidized Housing

• Regression of log rent (*sample: all renters*)
• Regressors
  – Housing unit characteristics
  – Subsidy unit dummy
  – Income
  – Interaction of subsidy dummy with income
• 5 regressions
Shelter Definitions Examined for this Study

<table>
<thead>
<tr>
<th>Chart legend names:</th>
<th>CE-Defined</th>
<th>OOP Drop</th>
<th>OOP Adjust</th>
<th>Housing Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homeowners:</strong></td>
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<tr>
<td>Add Mortgage Principal</td>
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<td>X</td>
<td></td>
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<tr>
<td>Drop Homeowners without Mortgages</td>
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<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Adjust FCSU of Homeowners without Mortgages</td>
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<tr>
<td>Use Rental Equivalence</td>
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<tr>
<td><strong>Renters:</strong></td>
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<tr>
<td>Drop Subsidized Renters</td>
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<tr>
<td>Impute Rents to Subsidized Renters</td>
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<td>X</td>
<td>X</td>
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</table>

Resources: 0 0 + + +
Threshold Specification: This Study

• **Determining the FCSU threshold**
  – *MAP Threshold* = 1.20 * 33rd percentile

• **Update by**
  – Changes in median FCSU holding 33rd percentile constant
    • Approximately = Panel’s and BLS’s 78% and 83% of median
  – Changes in 33rd percentile each year
    • = recalculating the threshold each year
Changes in Real Consumption Over Time

- 12-quarter based threshold
- Estimate rolling quarter to quarter thresholds
- In December 2006 $\$$

1. 2004Q1 – 2006Q4
2. 2004Q2 – 2007Q1 2006 Annual Threshold
3. 2004Q3 – 2007Q2
4. 2004Q4 – 2007Q3
5. 2005Q1 – 2007Q4
6. 2005Q2 – 2008Q1 2007 Annual Threshold
7. 2005Q3 – 2008Q2
8. 2005Q4 – 2008Q3
9. 2006Q1 – 2008Q4
10. 2006Q2 – 2009Q1 2008 Annual Threshold
Estimation Sample

- Reference families
  - Two adults with two children

- All consumer units
  - Apply 3-parameter equivalence scale
  - Calculate threshold for reference family
Thresholds in Current and Real $$ Updated by Median: Reference Families

U.S. Dollars

- FCSU (web)
- OOP (Dec. 2006$)
- FCSU-CE (web)
- CE (Dec. 2006$)
- Official
Thresholds Based on 33rd Percentile Updated by Median: Reference Families Only

in December 2006
Thresholds Based on 33\textsuperscript{rd} Percentile Updated by Median: Reference Families Only

![Graph showing thresholds over time from 2006 to 2008.](image-url)
Thresholds Based on 33rd Percentile Updated by Median: Reference Families Only

in December 2006$
Thresholds Using 33rd Percentile Updated by Median or 33rd Percentile

Sample: Reference Families Only

Reference Family Thresholds in December 2006

Reference Family Thresholds in December 2006
Thresholds Using 33rd Percentile
Updated by Median or 33rd Percentile

Sample: All Consumer Units

Updated by Median

Re-estimated

Reference Family Thresholds in December 2006

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tbody>
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<td>2</td>
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</tr>
<tr>
<td>4</td>
<td>$29,000</td>
<td>$30,000</td>
<td>$31,000</td>
</tr>
</tbody>
</table>
Ratio of 33rd Percentile to Median

Reference Families Only (based on December 2006$)
Summary

• Definition of shelter spending or consumption has a significant impact on the level of threshold
  – OOP and OOP versions < housing consumption

• Dropping homeowners and subsidized renters from OOP lead to higher estimates of OOP spending on FCSU than
  – OOP alone
  – OOP with adjustments

• During the time period studied
  – Modest growth in real level of needs
  – Most of the growth occurred prior to 2007, since that time, real level of need constant
Summary (cont.)

• NAS recommendation that once thresholds are set they should be updated to reflect changes in median spending on FCSU lead to
  – Lower growth rates than updating the threshold continually to reflect changes in the 33rd percentile.

• Using the full CE sample, adjusting for differences in spending by use of the equivalence scale, versus consumer units with 2 adults and 2 children lead to
  – Lower initial levels of OOP spending on FCSU but higher rates of growth
  – Higher initial estimates of FCSU needs based on housing consumption but lower growth rates
Food for Thought

• What needs?
  – FCSU
  – Others (e.g., medical care, child care)

• What “costs” to meet?
  – Spending needs
  – Consumption needs

• Whose shelter needs?
  – Homeowners and renters as are
  – Homeowners the same
  – Renters the same
  – All homeowners and renters the same

• Who is the reference unit for threshold determination?
  – Two adults with two children
  – All consumer units
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