Local Housing Affordability and Basic Household Needs

Aaron Yelowitz
University of Kentucky
November 2015

Contact info: aaron@uky.edu, www.Yelowitz.com
Introduction

• Key motivation for the official poverty measure and the recently implemented supplemental poverty measure is as an indicator of economic well-being.

• Additionally, official poverty measure is critical for eligibility for government programs.
Introduction

• Official poverty measure has been in use for 50 years
  – Originally developed in 1963-4 by Mollie Orshansky of Social Security Administration based on the economy food plan – the cheapest of 4 plans published by Dept. of Agriculture
  – Dept. of Agriculture’s 1955 Household Food Consumption Survey showed that families of three or more persons spent about 1/3 of their income on food. Thus, used a factor of 3 to compute thresholds
    • Thresholds actually function of (Family Size) x (Farm/Non-farm) x (Head Gender) x (Children) x (Elderly) – 124 bins
    • Thresholds usually published as weighted average of these bins
  – Very few modifications over time
Introduction

• 1995 National Academy of Sciences report (Citro and Michael, eds.) offered a number of recommendations that were ultimately incorporated into the Supplemental Poverty Measure (SPM)
• First SPM thresholds published in 2010 (along with official thresholds)
Introduction

• Key differences with SPM
  – Income: includes government transfers/payments (i.e., SNAP) and taxes (i.e. payroll taxes)
  – Job-related expenses: transportation and childcare
  – Medical costs: Varies based on health status/health insurance coverage
  – Family size/family composition adjustments: Child support/cohabitation

• Most significantly for this study: “The current poverty thresholds do not adjust for geographic differences in the cost-of-living across the nation. ... there are **significant variations across geographic areas in the cost of basic goods and services and, in particular, for housing.**”
Does Cost-of-Living Change Inferences?

- From 2013 SPM thresholds (published 10/14):
  - Large differences in threshold levels for owning without mortgage vs. renters/owners with mortgage

<table>
<thead>
<tr>
<th>Measure</th>
<th>2012</th>
<th>Standard error</th>
<th>2013</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official Poverty Measure</td>
<td>23,283</td>
<td>X</td>
<td>23,624</td>
<td>X</td>
</tr>
<tr>
<td>Supplemental Poverty Measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owners with a mortgage</td>
<td>25,784</td>
<td>368</td>
<td>25,639</td>
<td>289</td>
</tr>
<tr>
<td>Owners without a mortgage</td>
<td>21,400</td>
<td>233</td>
<td>21,397</td>
<td>337</td>
</tr>
<tr>
<td>Renters</td>
<td>25,105</td>
<td>398</td>
<td>25,144</td>
<td>400</td>
</tr>
</tbody>
</table>
Does Cost-of-Living Change Inferences?

- Big increases in poverty rates based on region, mostly due to cost-of-living:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Official**</th>
<th></th>
<th>SPM</th>
<th></th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>All people</td>
<td>313,395</td>
<td>45,748</td>
<td>1,013</td>
<td>14.6</td>
<td>48,671</td>
</tr>
</tbody>
</table>

|                         | 208,717    | 16,127    | 734       | 7.7       | 20,504     | 761       |
| Tenure                  | 136,059    | 7,739     | 479       | 5.7       | 11,267     | 569       |
| Owner                   | 75,999     | 9,254     | 486       | 12.2      | 9,970      | 524       |
| Owner/mortgage          | 101,338    | 28,755    | 876       | 28.4      | 27,434     | 855       |
| Renter                  |            |           |           |           |            |           |
| Region                  |            |           |           |           |            |           |
| Northeast               | 55,556     | 7,134     | 442       | 12.8      | 7,947      | 490       |
| Midwest                 | 66,872     | 8,677     | 432       | 13.0      | 8,351      | 416       |
| South                   | 117,109    | 19,018    | 708       | 16.2      | 18,565     | 705       |
| West                    | 73,849     | 10,919    | 433       | 14.8      | 13,809     | 495       |
Does Cost-of-Living Change Inferences?

• Tyler Cowen’s Time Magazine (October 2013) cover story about Texas notes that migration patterns between California and Texas, especially for low-income families, are consistent with the SPM measuring well-being or opportunity
  – “Texas poverty rate as 18.4% for 2010 and that of California as about 16%. ... once adjustments are made for the different costs of living across the two states, as the federal government does in its Supplemental Poverty Measure, Texas’ poverty rate drops to 16.5% and California’s spikes to a dismal 22.4%. Not surprisingly, it is the lower-income residents who are most likely to leave California.”
Purpose of this Study

- Both the official poverty measure and SPM are meant to be indicators of well-being. SPM will mechanically generate different poverty rates based on large differences in cost-of-living, principally driven by housing costs.
- But, to what extent do housing costs actually matter for measures of well-being, especially for the least fortunate in society?
  - Subjective measures – like happiness – might be higher in high cost-of-living areas, due to amenities like nice weather or interesting culture
  - Objective measures – like meeting basic expenses – would appear more likely to respond to housing costs and thereby justify the core motivation for geographic adjustments in the SPM
Data Used in this Study

• The Survey of Income and Program Participation (SIPP) has been asking extensive **objective well-being questions** since 1992 (for both adults and children) in its topical modules.

• Questions on durables, living conditions, crime, community services and **basic needs**
  – Focus on **basic need questions**, since clear link to SPM – higher housing costs make it more difficult to meet those needs, and answers less to those questions also less subjective than other areas.
  – Example: “During the past 12 months, has there been a time when your household did not meet its essential expenses? By essential expenses, I mean things like mortgage or rent payment, utility bills, or important medical care”
Data Used in this Study

  – The publicly-available SIPP has local geographic identifiers (i.e. metro area) through the 2001 panel (and only state identifiers thereafter).

  • Metro areas correspond to the concept of a local housing market (Beck, Scott and Yelowitz, 2012; Yelowitz, Scott, Beck, 2013)
  • Link household well-being measures to market-wide rental costs with HUD’s Fair Market Rents
  • Also link to local economic conditions $\frac{EMP_{MSA,t}}{POP_{MSA,t}}$ using BEA data.
Empirical Specification

• Basic set-up

\[
BAD_{outcome,j} = \beta_0 + \beta_1 FMR_{j,t} + \beta_2 EMP/POP_{j,t} + \beta_3 X_j + \delta_j + \delta_t + \varepsilon
\]

– Control for MSA, year fixed effects; standard errors correct for non-nested 2-way clustering (Cameron, Gelbach and Miller, JBES, 2011)
– Identification comes from within MSA changes in housing affordability (or local economic conditions) over time
– 9 individual outcomes, 3 aggregated outcomes
Empirical Specification

• 9 individual well-being outcomes related to basic needs:
  – Not Enough to Eat
  – Didn't Meet Essential Expenses
  – Didn't Pay Full Gas, Electric, or Oil Bill
  – Didn't Pay Full Rent or Mortgage
  – Needed to See Dentist but Didn't Go
  – Needed to See Doctor but Didn't Go
  – Had phone Disconnected
  – Had Gas, Electric, Oil Disconnected
  – Evicted from Residence
Empirical Specification

• 3 aggregate well-being outcomes:
  – Any difficulty?
  – More than 1 difficulty?
  – Average Z-score summary index
    • Rearrange so higher values of each individual outcome are good, not bad
    • Follow construction from Kling, Liebman and Katz (Econometrica, 2007) and Chetty et al. (QJE, 2011); index has mean=0 and SD=1
Basic Results:
Housing Doesn’t Matter, but Labor Markets Do Matter

Table 3
Impact of Housing and Labor Markets on Meeting Basic Needs

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Average Z-Score (good outcomes)</th>
<th>Any Difficulty</th>
<th>&gt;1 Difficulty</th>
<th>Not Enough to Eat</th>
<th>Didn’t Meet Essential Expenses</th>
<th>Didn’t Pay Full Gas, Electric, or Oil Bill</th>
<th>Didn’t Pay Full Rent or Mortgage</th>
<th>Needed to See Dentist but Didn’t Go</th>
<th>Needed to See Doctor but Didn’t Go</th>
<th>Had Telephone Disconnected</th>
<th>Had Gas, Electric, Oil Disconnected</th>
<th>Evicted from House or Apartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specification 1: Include FMR, MSA, and YEAR effects (N=55,467) (107 Unique MSAs)</td>
<td>FMR</td>
<td>-0.031</td>
<td>(0.875)</td>
<td>-0.092</td>
<td>(0.232)</td>
<td>0.001</td>
<td>(0.339)</td>
<td>0.079</td>
<td>(0.122)</td>
<td>-0.039</td>
<td>(0.294)</td>
<td>-0.003</td>
</tr>
<tr>
<td></td>
<td>EMP/POP</td>
<td>1.893***</td>
<td>(0.615)</td>
<td>-0.412*</td>
<td>(0.232)</td>
<td>-0.424**</td>
<td>(0.200)</td>
<td>-0.090</td>
<td>(0.136)</td>
<td>0.005</td>
<td>(0.322)</td>
<td>0.015</td>
</tr>
<tr>
<td>Specification 2: Individual/household characteristics (+Specification 1)</td>
<td>FMR</td>
<td>-0.136</td>
<td>(1.045)</td>
<td>-0.029</td>
<td>(0.305)</td>
<td>0.041</td>
<td>(0.371)</td>
<td>0.090</td>
<td>(0.136)</td>
<td>0.005</td>
<td>(0.332)</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>EMP/POP</td>
<td>1.893***</td>
<td>(0.615)</td>
<td>-0.412*</td>
<td>(0.232)</td>
<td>-0.424**</td>
<td>(0.200)</td>
<td>-0.090</td>
<td>(0.136)</td>
<td>0.005</td>
<td>(0.322)</td>
<td>0.015</td>
</tr>
<tr>
<td>Specification 3: Include employment/population ratio (+Specification 2)</td>
<td>FMR</td>
<td>0.040</td>
<td>(1.027)</td>
<td>-0.067</td>
<td>(0.299)</td>
<td>0.002</td>
<td>(0.371)</td>
<td>0.069</td>
<td>(0.123)</td>
<td>-0.015</td>
<td>(0.347)</td>
<td>-0.020</td>
</tr>
<tr>
<td></td>
<td>EMP/POP</td>
<td>1.893***</td>
<td>(0.615)</td>
<td>-0.412*</td>
<td>(0.232)</td>
<td>-0.424**</td>
<td>(0.200)</td>
<td>-0.090</td>
<td>(0.136)</td>
<td>0.005</td>
<td>(0.322)</td>
<td>0.015</td>
</tr>
<tr>
<td>Specification 4: Larger MSAs only (+Specification 3)</td>
<td>MSAs with ≥100 households over sample period (N=54,616) (95 Unique MSAs)</td>
<td>FMR</td>
<td>0.008</td>
<td>(1.029)</td>
<td>-0.049</td>
<td>(0.298)</td>
<td>0.009</td>
<td>(0.373)</td>
<td>0.075</td>
<td>(0.125)</td>
<td>-0.002</td>
<td>(0.348)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMP/POP</td>
<td>1.877***</td>
<td>(0.625)</td>
<td>-0.415*</td>
<td>(0.238)</td>
<td>-0.430**</td>
<td>(0.205)</td>
<td>-0.220***</td>
<td>(0.046)</td>
<td>-0.220</td>
<td>(0.227)</td>
</tr>
<tr>
<td>MSAs with ≥200 households over sample period(N=49,830) (66 Unique MSAs)</td>
<td>FMR</td>
<td>0.134</td>
<td>(1.049)</td>
<td>-0.100</td>
<td>(0.307)</td>
<td>-0.015</td>
<td>(0.370)</td>
<td>0.065</td>
<td>(0.127)</td>
<td>-0.049</td>
<td>(0.344)</td>
<td>-0.011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMP/POP</td>
<td>1.699***</td>
<td>(0.616)</td>
<td>-0.309</td>
<td>(0.228)</td>
<td>-0.358*</td>
<td>(0.192)</td>
<td>-0.203***</td>
<td>(0.050)</td>
<td>-0.154</td>
<td>(0.217)</td>
</tr>
<tr>
<td>MSAs with ≥300 households over sample period(N=45,696) (49 Unique MSAs)</td>
<td>FMR</td>
<td>0.442</td>
<td>(0.970)</td>
<td>-0.187</td>
<td>(0.320)</td>
<td>-0.079</td>
<td>(0.380)</td>
<td>0.038</td>
<td>(0.135)</td>
<td>-0.095</td>
<td>(0.348)</td>
<td>-0.085</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMP/POP</td>
<td>1.577***</td>
<td>(0.613)</td>
<td>-0.378</td>
<td>(0.252)</td>
<td>-0.404*</td>
<td>(0.207)</td>
<td>-0.194***</td>
<td>(0.060)</td>
<td>-0.151</td>
<td>(0.233)</td>
</tr>
</tbody>
</table>
Empirical Specification

• Interpretations
  – Move from 10\textsuperscript{th} to 90\textsuperscript{th} percentile in monthly rents (FMR) ($477/month in constant 2003 dollars).
    • In none of the specifications do housing costs matter.
    • Economically small effects on meeting basic needs.
    • Implied change in basic needs <0.5 percentage points, from baseline rates that are often greater than 10%.
  – Moving from the 10th to 90th percentile in EMP/POP (11 percentage point change in the ratio)
    • Increase in the average Z-score index of 0.21 standard deviations.
    • Across many specifications, better labor market conditions translate into higher likelihood of meeting basic needs.
Empirical Specification

• Results/non-results appear consistent across many specifications
  – Larger MSAs only
  – MSAs with wide swings (>20%) in real FMRs over time
  – Renters/near-poor
    • Renters particularly important: higher rents/housing costs would have wealth effects for owners (Bostic, Gabriel, Painter, 2009). Yet within-MSA changes in market rents do not affect well-being of renters or those under 200% FPL
Conclusions

• One of the key motivations for the SPM – and largest reasons for divergence from official measure – is geographic cost-of-living considerations
  – Housing is unquestionably the most significant driver of these differences.
  – Across wide range of specifications, no apparent effect of housing costs on meeting basic needs. May call into question a key motivation for SPM.

• Why no effect?
  – Perhaps behavioral responses like doubling-up, living with parents, low quality units/neighborhoods within metro area, borrowing/dissaving