

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 1.
Two Adult, Two Child Poverty Thresholds: 2012 and 2013
 (In dollars)

Measure	2012	Standard error	2013	Standard error
Official Poverty Measure	23,283	X	23,624	X
Supplemental Poverty Measure				
Owners with a mortgage	25,784	368	25,639	289
Owners without a mortgage	21,400	233	21,397	337
Renters	25,105	398	25,144	400

Does Cost-of-Living Change Inferences?

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

Table 2.

Number and Percentage of People in Poverty by Different Poverty Measures: 2013

(Data are based on the CPS ASEC sample of 68,000 addresses.¹ Numbers in thousands, confidence intervals [C.I.] in thousands or percentage points as appropriate. People as of March of the following year. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <ftp://ftp2.census.gov/programs-surveys/cps/techdocs/cpsmar14.pdf>)

Characteristic	Number** (in thousands)	Official**				SPM				Difference	
		Number		Percent		Number		Percent		Number	Percent
		Estimate	90 percent C.I. ¹ (±)	Estimate	90 percent C.I. ¹ (±)	Estimate	90 percent C.I. ¹ (±)	Estimate	90 percent C.I. ¹ (±)		
All people	313,395	45,748	1,013	14.6	0.3	48,671	1,051	15.5	0.3	*2,923	*0.9
Tenure											
Owner	208,717	16,127	734	7.7	0.3	20,504	761	9.8	0.4	*4,377	*2.1
Owner/mortgage	136,059	7,739	479	5.7	0.4	11,267	569	8.3	0.4	*3,528	*2.6
Owner/no mortgage/rent free	75,999	9,254	486	12.2	0.5	9,970	524	13.1	0.6	*716	*0.9
Renter	101,338	28,755	876	28.4	0.7	27,434	855	27.1	0.7	*-1,321	*-1.3
Region											
Northeast	55,566	7,134	442	12.8	0.8	7,947	490	14.3	0.9	*813	*1.5
Midwest	66,872	8,677	432	13.0	0.7	8,351	416	12.5	0.6	-326	-0.5
South	117,109	19,018	708	16.2	0.6	18,565	705	15.9	0.6	-454	-0.4
West	73,849	10,919	433	14.8	0.6	13,809	495	18.7	0.7	*2,890	*3.9

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

- Use 1991, 1992, 1993, 1996 and 2001 SIPP Panels
 - Coverage in the years 1992, 1995, 1998 and 2003
 - 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

(1)
$$BAD_OUTCOME_n = \beta_0 + \beta_1 FMR_{j,t} + \beta_2 EMP/POP_{j,t} + \beta_3 X_n + \delta_j + \delta_t + \varepsilon_n$$

- 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

Dependent variable:	Average Z-Score (good outcomes)	Any Difficulty	>1 Difficulty	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 Telephone Disconnected	Had Gas, Electric, Oil Disconnected	Evicted from House or Apartment
Specification 1: Include FMR, MSA, and YEAR effects (N=55,467) (107 Unique MSAs)												
FMR	-0.031 (0.875)	-0.092 (0.232)	0.001 (0.339)	0.079 (0.122)	-0.039 (0.294)	-0.003 (0.304)	-0.052 (0.189)	0.014 (0.111)	0.005 (0.158)	-0.069 (0.077)	-0.031 (0.110)	0.032 (0.039)
Specification 2: Individual/household characteristics (+Specification 1)												
FMR	-0.136 (1.045)	-0.029 (0.305)	0.041 (0.371)	0.090 (0.136)	0.005 (0.332)	0.015 (0.321)	-0.038 (0.196)	0.052 (0.135)	0.038 (0.189)	-0.071 (0.072)	-0.032 (0.118)	0.031 (0.040)
Specification 3: Include employment/population ratio (+Specification 2)												
FMR	0.040 (1.027)	-0.067 (0.299)	0.002 (0.371)	0.069 (0.123)	-0.015 (0.347)	-0.020 (0.318)	-0.058 (0.202)	0.030 (0.128)	0.008 (0.173)	-0.090 (0.092)	-0.050 (0.110)	0.026 (0.040)
EMP/POP	1.893*** (0.615)	-0.412* (0.232)	-0.424** (0.200)	-0.217*** (0.046)	-0.211 (0.221)	-0.367** (0.145)	-0.213* (0.110)	-0.241** (0.100)	-0.322*** (0.111)	-0.206 (0.176)	-0.193*** (0.065)	-0.049*** (0.015)
Specification 4: Larger MSAs only (+Specification 3)												
MSAs with ≥ 100 households over sample period (N=54,616) (95 Unique MSAs)												
FMR	0.008 (1.029)	-0.049 (0.298)	0.009 (0.373)	0.075 (0.125)	-0.002 (0.348)	-0.012 (0.319)	-0.054 (0.204)	0.036 (0.128)	0.012 (0.172)	-0.087 (0.092)	-0.054 (0.112)	0.028 (0.040)
EMP/POP	1.877*** (0.625)	-0.415* (0.238)	-0.430** (0.205)	-0.220*** (0.046)	-0.220 (0.227)	-0.375** (0.148)	-0.220 (0.113)	-0.231** (0.100)	-0.323*** (0.113)	-0.196 (0.176)	-0.185*** (0.064)	-0.047*** (0.015)
MSAs with ≥ 200 households over sample period (N=49,830) (66 Unique MSAs)												
FMR	0.134 (1.049)	-0.100 (0.307)	-0.015 (0.370)	0.065 (0.127)	-0.049 (0.344)	-0.011 (0.337)	-0.079 (0.206)	-0.021 (0.112)	-0.008 (0.180)	-0.097 (0.088)	-0.059 (0.114)	0.030 (0.041)
EMP/POP	1.699*** (0.616)	-0.309 (0.228)	-0.358* (0.192)	-0.203*** (0.050)	-0.154 (0.217)	-0.325** (0.153)	-0.210* (0.113)	-0.239** (0.102)	-0.270** (0.131)	-0.146 (0.175)	-0.185*** (0.068)	-0.049*** (0.012)
MSAs with ≥ 300 households over sample period (N=45,696) (49 Unique MSAs)												
FMR	0.442 (0.970)	-0.187 (0.320)	-0.079 (0.380)	0.038 (0.135)	-0.095 (0.348)	-0.085 (0.322)	-0.085 (0.207)	-0.077 (0.106)	-0.054 (0.193)	-0.113 (0.088)	-0.086 (0.106)	0.011 (0.031)
EMP/POP	1.577*** (0.613)	-0.378 (0.252)	-0.404* (0.207)	-0.194*** (0.060)	-0.151 (0.233)	-0.329** (0.155)	-0.136 (0.125)	-0.249* (0.143)	-0.235* (0.140)	-0.122 (0.218)	-0.180** (0.071)	-0.049 (0.013)

Empirical Specification

- Interpretations
 - Move from 10th to 90th 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