Does Geographically Adjusting Poverty Thresholds Improve Poverty Measurement and Program Targeting?

Bruce D. Meyer, University of Chicago, NBER, AEI, and U.S. Census Bureau

Derek Wu, University of Chicago

Brian Curran, University of Chicago

NBER Summer Institute (Urban Economics)

July 29, 2021

THE UNIVERSITY OF CHICAGO
Harris Public Policy | Comprehensive Income Dataset Project

Motivation

- Prices differ greatly across geography
  - Fixed market basket of good (e.g., two-bedroom apartment) costs more in New York City than in rural Arkansas

- Should poverty thresholds therefore be adjusted to reflect geographic differences in cost-of-living? Should the income cutoff for government transfer payments be similarly adjusted?

- Policy implications can be enormous
  - A geographic adjustment would classify fewer (more) people as poor in lower (higher) cost areas
  - OPM (which does not have a geographic adjustment) is used to determine eligibility for government programs, allocate government funds, and guide policies

Geographic Adjustments in Current Policies

- Census Bureau's Supplemental Poverty Measure (SPM) adjusts thresholds for geographic differences in rental prices
  - Many people have proposed geographic adjustments for the Official Poverty Measure (OPM)

Economic Theory Implies a Geographic Adjustments May Be Counterproductive

- Long literature in economics suggests that spatial differences in prices can arise in equilibrium
  - See, e.g., Tiebout (1956), Rosen (1974), Haurin (1980), Roback (1982)

- Thus, spatial variation in housing prices may simply reflect variation in locational desirability (i.e., amenities) and is likely accompanied by changes in wages and other factors

- Spatial variation in prices different from time variation because individuals have some ability to move

- In this setting, Kaplow (1995) and Glaeser (1998) show a full adjustment for local prices may not improve equity and efficiency

Research Points to Econometrically Accounting for Both Prices and Amenities

- Research proposes that one should value amenities and sum up changes in prices and amenities by geography
  - See Roback (1982), Gyourko and Tracy (1991)

- Long literature indicates that this is difficult to implement
  - Recent summary in Greenstone (2017): omitted variables, average v. marginal

- Wages, the generosity of safety net programs, and other government spending are strongly associated with prices

Our Framework

- Assesses desirability of a geographic poverty adjustment by examining how well it identifies most disadvantaged
  - High-level goal is to determine who is disadvantaged
  - Policy use of current measures includes determining most disadvantaged to allocate funds and target programs at geographic and individual level

Summary

- This paper compares ten categories of material well-being measures among those added to and removed from poverty by a geographic adjustment
    - Examines three poverty measures: survey-based SPM and a new Comprehensive Income Poverty Measure (CIPM) that links survey and admin. data to better measure incomes as well as the OPM

- Seventh project to come out of Comprehensive Income Dataset (CID) Project
    - Links most of the major Census surveys to IRS tax records and program data from many federal agencies and states

- Key result: Incorporating a geographic adjustment consistently identifies a **less deprived** population

Data Sources

Survey Data

- Focus on reference year 2010

- 2011 Current Population Survey (CPS ASEC)

- 2008 SIPP Panel
  - Sample from reference month 4 of Wave 6 (spanning April-July 2010)
  - Combine information from Waves 5-8 to calculate annual income for 2010
  - Pull in additional well-being outcomes from Waves 4, 6, and 7

Administrative Data

Income/Well-Being Source	Administrative Source	Unit	Frequency
Earnings	DER (SSA), W-2 (IRS), Form 1040 (IRS)	Individual & Tax Unit	Annual
Asset Income	Form 1040 (IRS)	Tax Unit	Annual
Retirement Income	Form 1099-R (IRS)	Individual	Annual
Social Security	PHUS & MBR (SSA)	Individual	Monthly
SSI	SSR (SSA)	Individual	Monthly
Veterans' Benefits	US VETS (VA)	Individual	Monthly
Taxes (simulated)	Form 1040 (IRS)	Tax Unit	Annual
Housing Assistance	PIC & TRACS (HUD)	Household	Monthly
Permanent Income	Forms 1040, W-2, 1099-R (IRS)	Tax Unit	Annual
Mortality	Numident (SSA)	Individual	Frequent

Linking Survey and Administrative Data

- Link survey and administrative data by Protected Identification Key or PIK
  - PIK rates over 99% in most admin records
  - PIK rates at sharing unit level over 90% in both surveys

Construction of Poverty Measures

Supplemental Poverty Measure (SPM)

- Resource Measure (from survey):
  - Pre-tax money income + in-kind transfers – expenses/taxes
- Resource Sharing Unit:
  - Family members + cohabiting partners, unrelated children under age 15, foster children between ages 15-22
- Poverty Threshold (different base than Census SPM):

$$SPM\ Threshold_{t,ac,sm} = (Base\ Threshold)_t \times \frac{(Equivalence\ Scale\ Factor)_{ac}}{E}$$

$$\times \underbrace{[(Housing\ Share_t \times MRI_{sm}) + (1 - Housing\ Share_t)]}_{Geographic\ Adjustment\ Factor}$$

- t = housing tenure, a = # adults, c = # children, s = state, m = MSA
- E = equivalence scale for two-adult, two-child sharing unit
- MRI = median rent index (median gross rent for 2-bedroom unit in geographic area divided by national median for same unit type)

Comprehensive Income Poverty Measure (CIPM)

- Resource Measure (from survey and admin. data):
  - Pre-tax money income + in-kind transfers + asset flows (from home, car, & other assets) – taxes
  - Note that we can only incorporate asset flows in SIPP

- Resource Sharing Unit: Same as SPM

- Poverty Thresholds: Similar to SPM, except we no longer vary thresholds by housing tenure and different base threshold
  - No longer need to implicitly account for differences in available resources because we explicitly account for flow value of home ownership in resource measure

Additional Methods

- To construct the SPM and CIPM without a geographic adjustment, we simply remove the geographic adjustment factor from the thresholds

- For both the SPM and CIPM (with and without a geographic adjustment), we proportionately adjust thresholds so that the poverty rate is always fixed at 15.1% (equal to OPM in 2010)
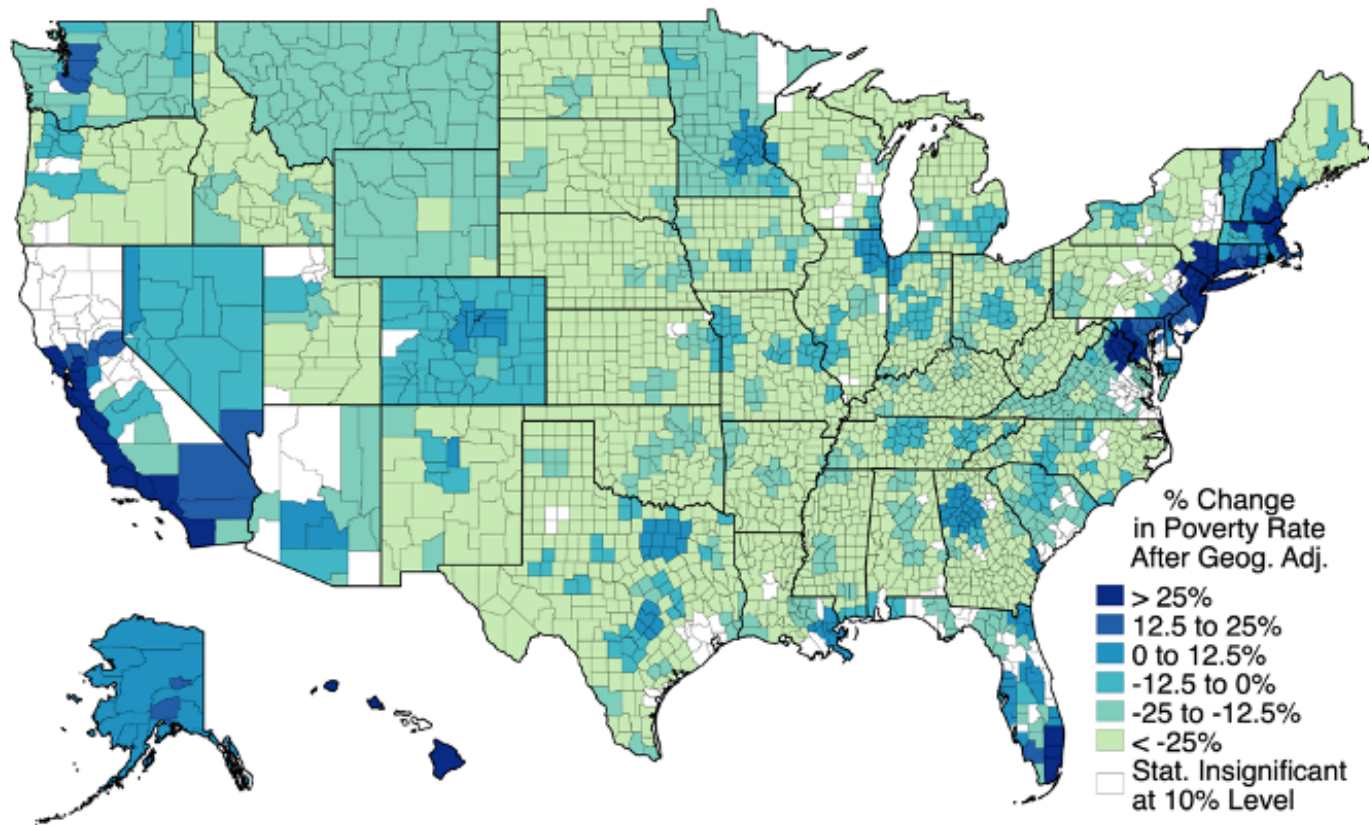
Proportions of OPM Threshold Used to Anchor Poverty Rates at Official Level (15.1%)
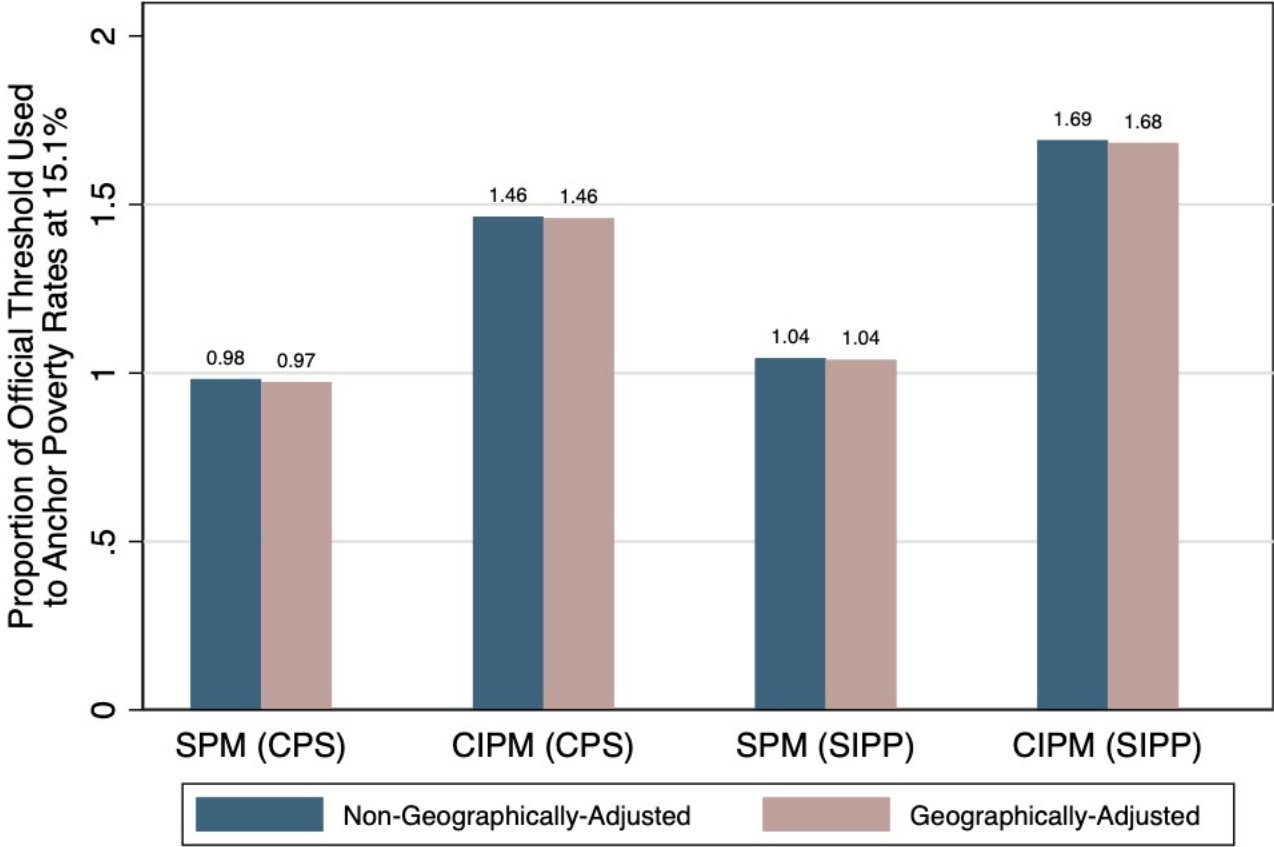
Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Changes in Poverty Rates with a Geographic Adjustment

Percent Change in Poverty Rate After Applying a Geographic Adjustment (by State)

% Change in Poverty Rate After Geog. Adj.

- > 25%
- 12.5 to 25%
- 0 to 12.5%
- -12.5 to 0%
- -25 to -12.5%
- < -25%
- Stat. Insignificant at 10% Level

Source: 2010-2012 CPS ASEC (Public-Use); Supplemental Poverty Measure

Percent Change in Poverty Rate After Applying a Geographic Adjustment (by CBSA)

% Change in Poverty Rate After Geog. Adj.

- > 25%
- 12.5 to 25%
- 0 to 12.5%
- -12.5 to 0%
- -25 to -12.5%
- < -25%
- Stat. Insignificant at 10% Level

Source: 2010-2012 CPS ASEC (Public-Use); Supplemental Poverty Measure

Poverty Rates with and without a Geographic Adjustment by Sharing Unit Characteristics
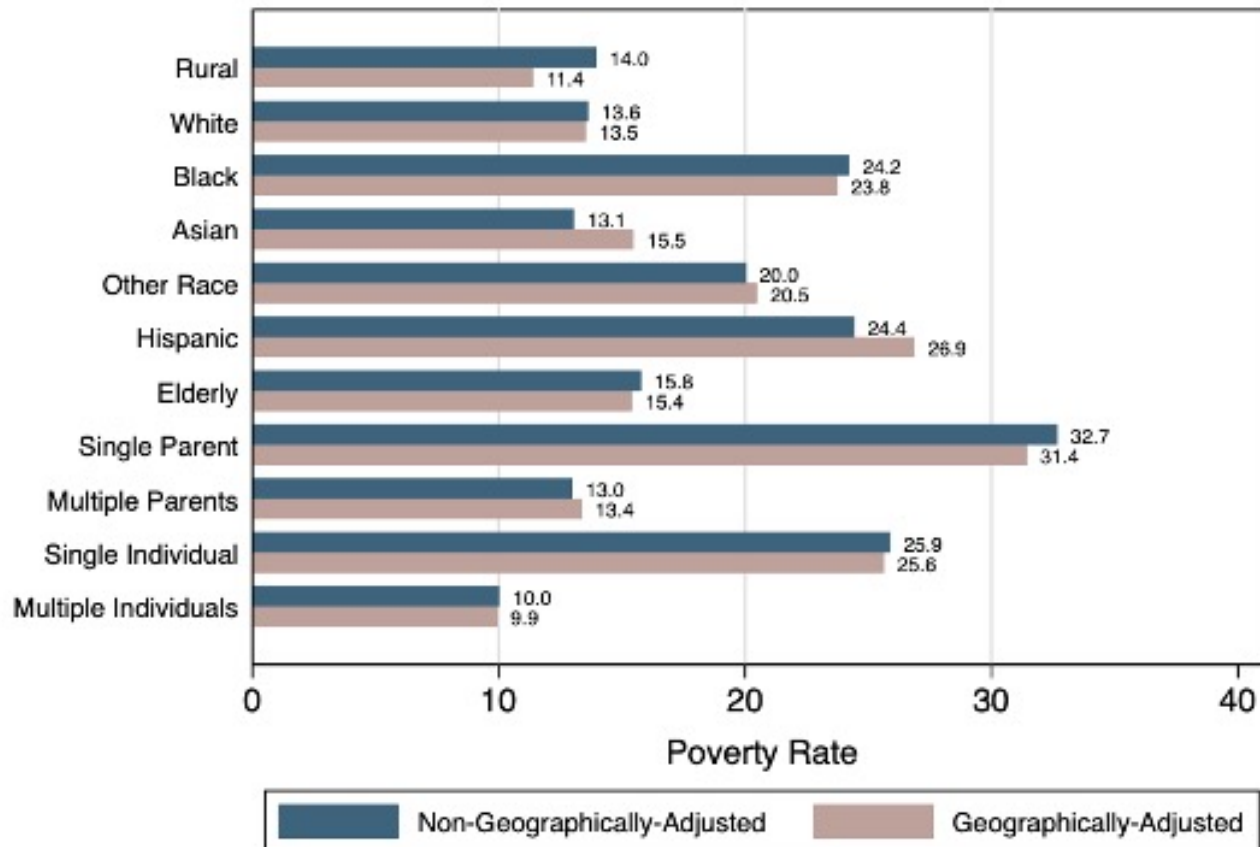
Sources: 2011 CPS ASEC; Supplemental Poverty Measure
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Methods to Compare Well-Being Across Poverty Measures

Measures of Well-Being in CPS & SIPP

- Permanent income
  - Sum of income from tax records for 2008, 2009, 2011, 2012
  - AGI if filed Form 1040
  - Wages from Form W-2 and retirement income from Form 1099-R if did not file Form 1040

- Mortality
  - Indicators for having died by December 31, 2015 and by March 1, 2019

- Years of education (for head of sharing unit)

Measures of Well-Being for SIPP Only

- Health problems
  - Fair/poor health quality, health condition limits/prevents work
- Material hardships
  - Not meeting all essential expenses, not paying full rent, being evicted, not paying full energy bill, energy service disrupted, phone service disconnected, could not see doctor, could not see dentist
- Home quality problems
  - Pests, leaking roof, broken windows, electrical problems, plumbing problems, holes in wall, holes in floor
- Appliance ownership
  - Microwave, dishwasher, air conditioning, television, computer, washing machine, dryer, cell phone
- Assets
  - Net worth, total wealth, total debt, home equity, vehicle equity, other assets
- Food security problems
  - Not enough food, food did not last, meals not balanced, children not eating enough, skipped meals, ate less than one should, did not eat during day
- Public services problems

Regression Specification

- We estimate the following regression:

$$Well\text{-}Being = \alpha + \beta_1 Geog\text{-}Only\ Poor + \beta_2 Always\ Poor + \beta_3 Never\ Poor + \lambda' X + \varepsilon$$

- Reference group = those who are poor without a geographic adjustment but not poor with a geographic adjustment
- Control for age, age-squared, gender, marital status, unit type, and race/ethnicity
- Sample consists of sharing unit heads for most outcomes (weighted using head weights multiplied by sharing unit size)

- Use linear models or probits (with binary outcomes)

- Goal of regression is to compare individuals whose poverty status changes when switching between measures with and without geographic adjustments
  - Relevant coefficient is therefore β_1

THE UNIVERSITY OF CHICAGO
Harris Public Policy

Shares and Counts by Geographic Poverty Category

Poverty Category	CPS			SIPP		
	Weighted Share of Individuals (1)	Sample # of Individuals (2)	Sample # of Sharing Units (3)	Weighted Share of Individuals (4)	Sample # of Individuals (5)	Sample # of Sharing Units (6)
A. Supplemental Poverty Measure (SPM)						
Never Poor	0.8338	173,000	65,000	0.8307	73,000	29,000
Non-Geographic-Only Poor	0.0152	3,100	1,300	0.0183	1,800	750
Geographic-Only Poor	0.0152	3,300	1,200	0.0183	1,500	500
Always Poor	0.1358	26,000	11,500	0.1327	12,000	5,500
B. Comprehensive Income Poverty Measure (CIPM)						
Never Poor	0.8346	163,000	60,500	0.8344	71,500	28,500
Non-Geographic-Only Poor	0.0143	2,800	1,100	0.0146	1,400	550
Geographic-Only Poor	0.0143	2,800	950	0.0146	1,100	400
Always Poor	0.1367	24,000	9,800	0.1365	11,500	4,800

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization numbers CBDRB-FY-ERD002-020 & CBDRB-FY21-ERD002-002

Main Results

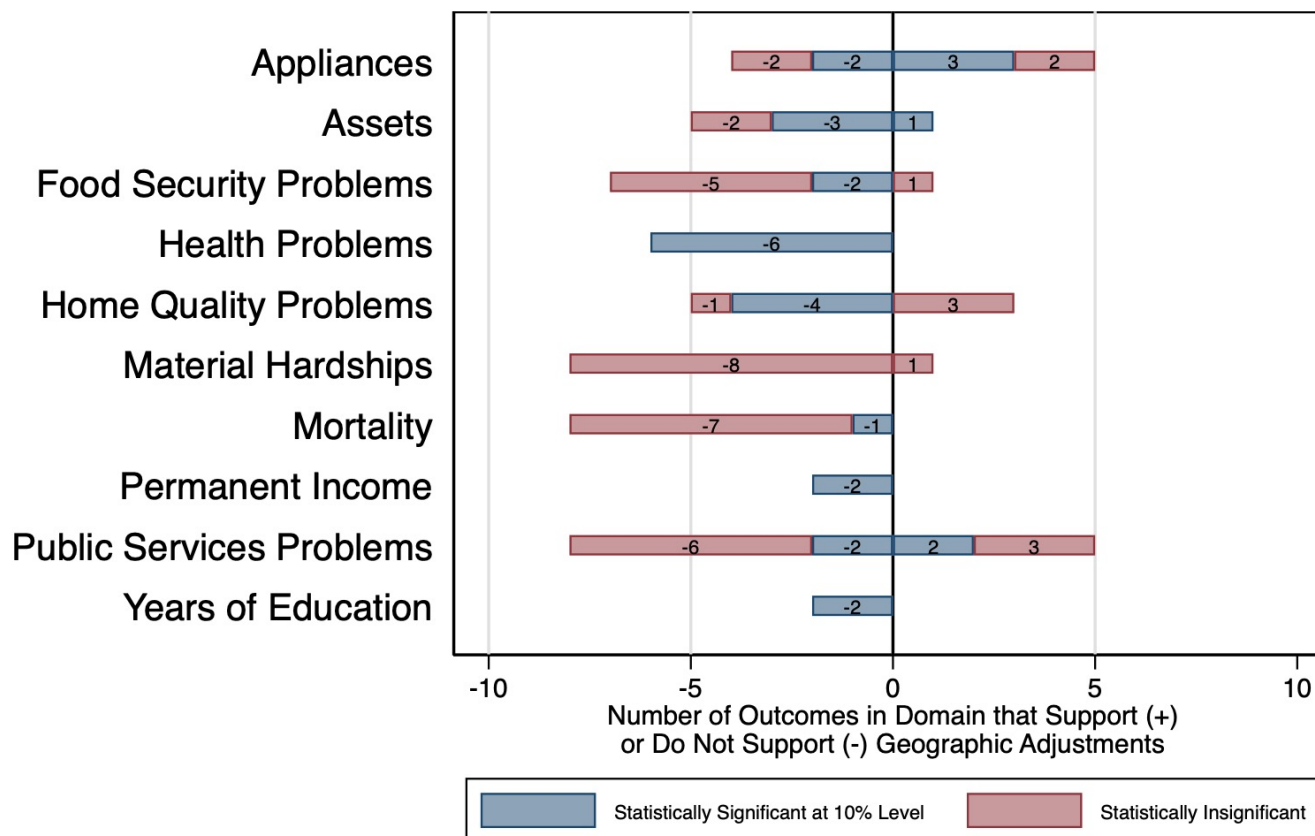# Well-Being of Those Added to Poverty Relative to Those Removed with a Geographic Adjustment, SPM

Well-Being Measures	Point Estimate (1)	Standard Error (2)	Mean for Non-Geog-Only Poor (3)	Overall Mean (4)	Supports Geog Adj? (+/-) (5)
Permanent Income (*CPS*)	28,630***	(6,278)	26,980	98,620	–
Permanent Income (*SIPP*)	17,150***	(3,819)	33,870	92,930	–
Years of Education (*CPS*)	0.4000***	(0.1410)	11.840	13.640	–
Years of Education (*SIPP*)	0.5630***	(0.2270)	12.060	13.700	–
Head Died by 2019 (*CPS*)	-0.0226	(0.0140)	0.124	0.071	–
Head Died by 2019 (*SIPP*)	-0.0259	(0.0165)	0.110	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0603***	(0.0137)	0.226	0.118	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0711***	(0.0148)	0.182	0.103	–
Number of Material Hardships (*SIPP*)	-0.1550	(0.1370)	1.164	0.646	–
Number of Home Quality Problems (*SIPP*)	-0.1230*	(0.0654)	0.370	0.224	–
Number of Appliances (*SIPP*)	-0.1900	(0.1660)	6.207	6.988	+
Net Worth (*SIPP*)	59,580	(45,130)	42,350	272,200	–
Total Wealth (*SIPP*)	96,560**	(44,810)	82,930	384,900	–
Number of Food Security Problems (*SIPP*)	-0.1750	(0.1220)	1.022	0.460	–
Number of Public Service Problems (*SIPP*)	-0.0298	(0.1300)	1.165	0.949	–

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

THE UNIVERSITY OF CHICAGO **Harris** Public Policy | Comprehensive Income Dataset Project

Number of Outcomes for Which a Geographic Adjustment Identifies a More Deprived Population: SPM

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization #s CBDRB-FY20-ERD002-020, CBDRB-FY21-ERD002-002, & CBDRB-FY2021-CES005-016
Note: Mortality, permanent income, education, and health domains available in CPS & SIPP; all other domains available in SIPP only

Well-Being of Those Added to Poverty Relative to Those Removed with a Geographic Adjustment, CIPM

| Well-Being Measures	Point Estimate	Standard Error	Mean for Non-Geog-Only Poor	Overall Mean	Supports Geog Adj? (+/-)
	(1)	(2)	(3)	(4)	(5)
Permanent Income (*CPS*)	24,140***	(5,377)	24,430	98,090	−
Permanent Income (*SIPP*)	17,800***	(3,461)	24,850	92,930	−
Years of Education (*CPS*)	0.5730***	(0.1610)	11.750	13.630	−
Years of Education (*SIPP*)	0.6980**	(0.2850)	11.930	13.700	−
Head Died by 2019 (*CPS*)	-0.0247**	(0.0116)	0.109	0.071	−
Head Died by 2019 (*SIPP*)	0.0209	(0.0220)	0.088	0.080	+
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0603***	(0.0137)	--	--	−
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0711**	(0.0148)	0.181	0.104	−
Number of Material Hardships (*SIPP*)	-0.1830	(0.1510)	1.280	0.645	−
Number of Home Quality Problems (*SIPP*)	-0.1560**	(0.0747)	0.410	0.225	−
Number of Appliances (*SIPP*)	-0.2300	(0.1620)	6.273	6.992	+
Net Worth (*SIPP*)	26,070	(26,820)	6,785	273,500	−
Total Wealth (*SIPP*)	61,530**	(24,980)	29,120	386,300	−
Number of Food Security Problems (*SIPP*)	-0.2110*	(0.1280)	0.948	0.459	−
Number of Public Service Problems (*SIPP*)	-0.0694	(0.1390)	1.332	0.950	−

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization numbers CBDRB-FY-ERD002-020, CBDRB-FY21-ERD002-002, and CBDRB-FY2021-CES005-016.

Number of Outcomes for Which a Geographic Adjustment Identifies a More Deprived Population: CIPM
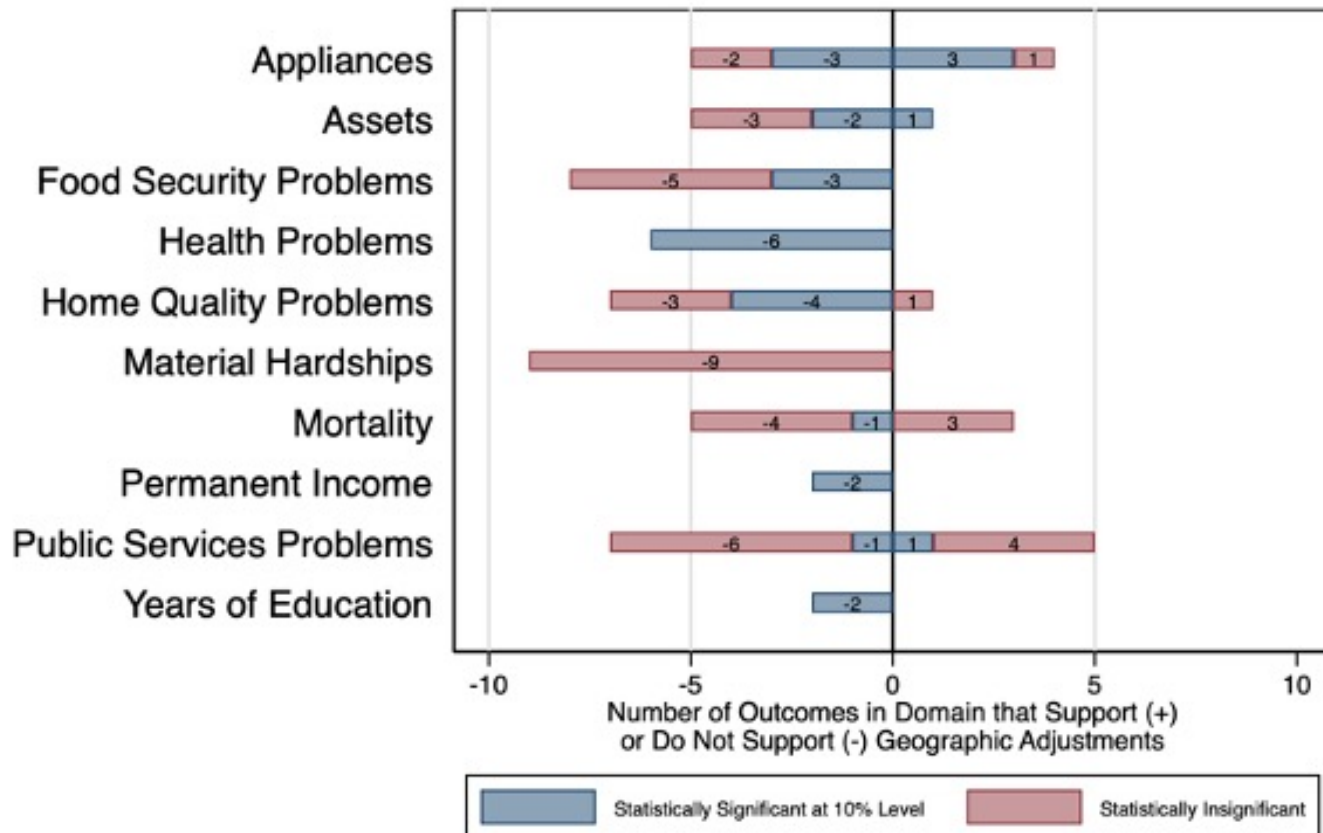
Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization #s CBDRB-FY20-ERD002-020,
CBDRB-FY21-ERD002-002, & CBDRB-FY2021-CES005-016
Note: Mortality, permanent income, education, and health domains available in CPS & SIPP; all other domains available in SIPP only

# Robustness Check: Estimates with a Partial Price Adjustment

Overview

- We now examine the effects of scaling the geographic adjustment factor (towards 1) by fractions from 0.1 to 1.0
  - If areas with higher rents also have higher amenities, then a full adjustment for geographic rent differences would over-adjust thresholds for well-being differences
  - At best, a rough approach to moderate the geographic adjustment factor to account for amenities
- Fewer observations will switch in or out of poverty at lower fractions
- Focus on permanent income and years of education
  - Available in both CPS and SIPP
  - Have substantial variation, allowing for greater statistical power
  - Focus on CIPM, although results using SPM are similar

Effects for Permanent Income by Adjusted Share, CIPM
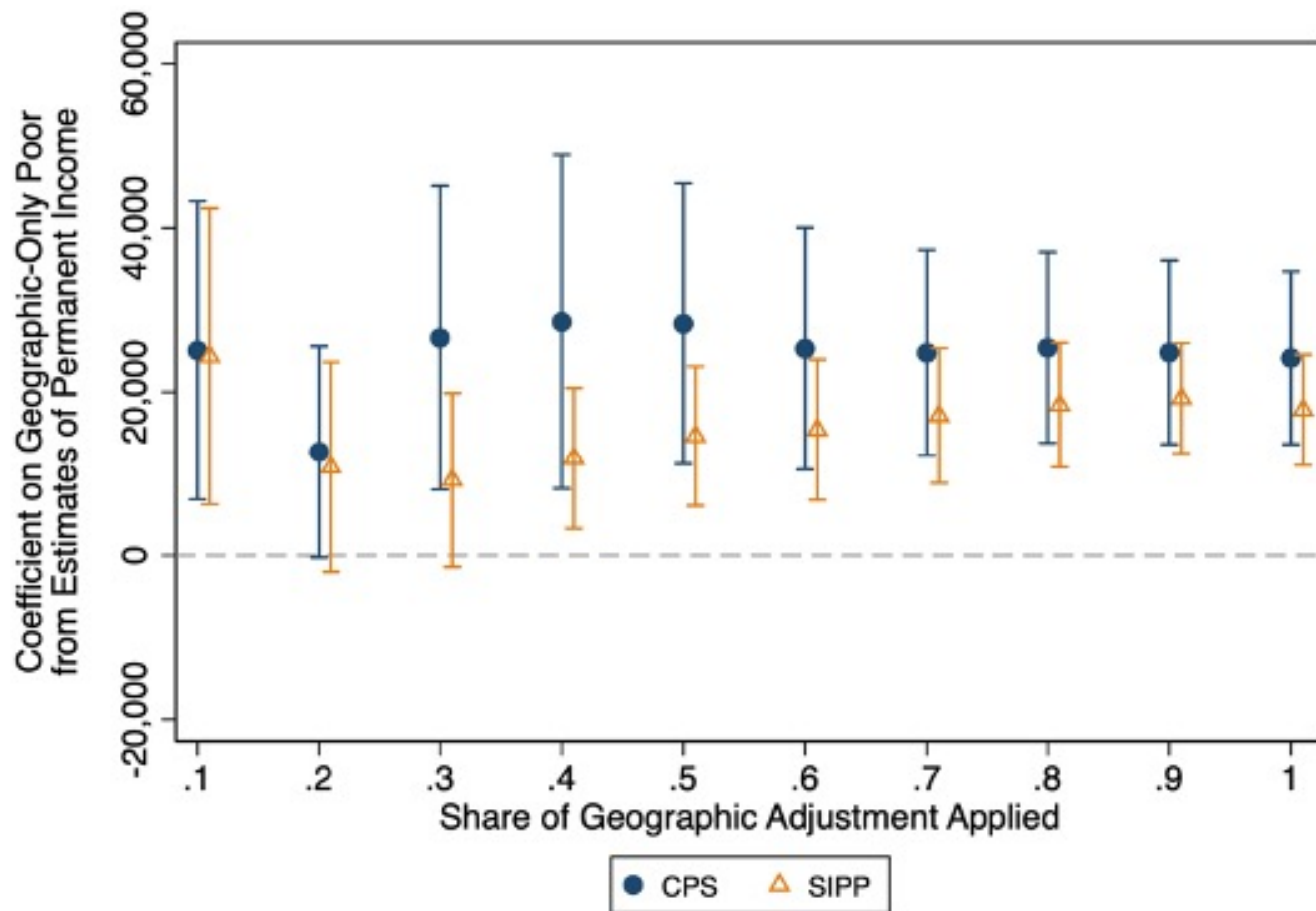
Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

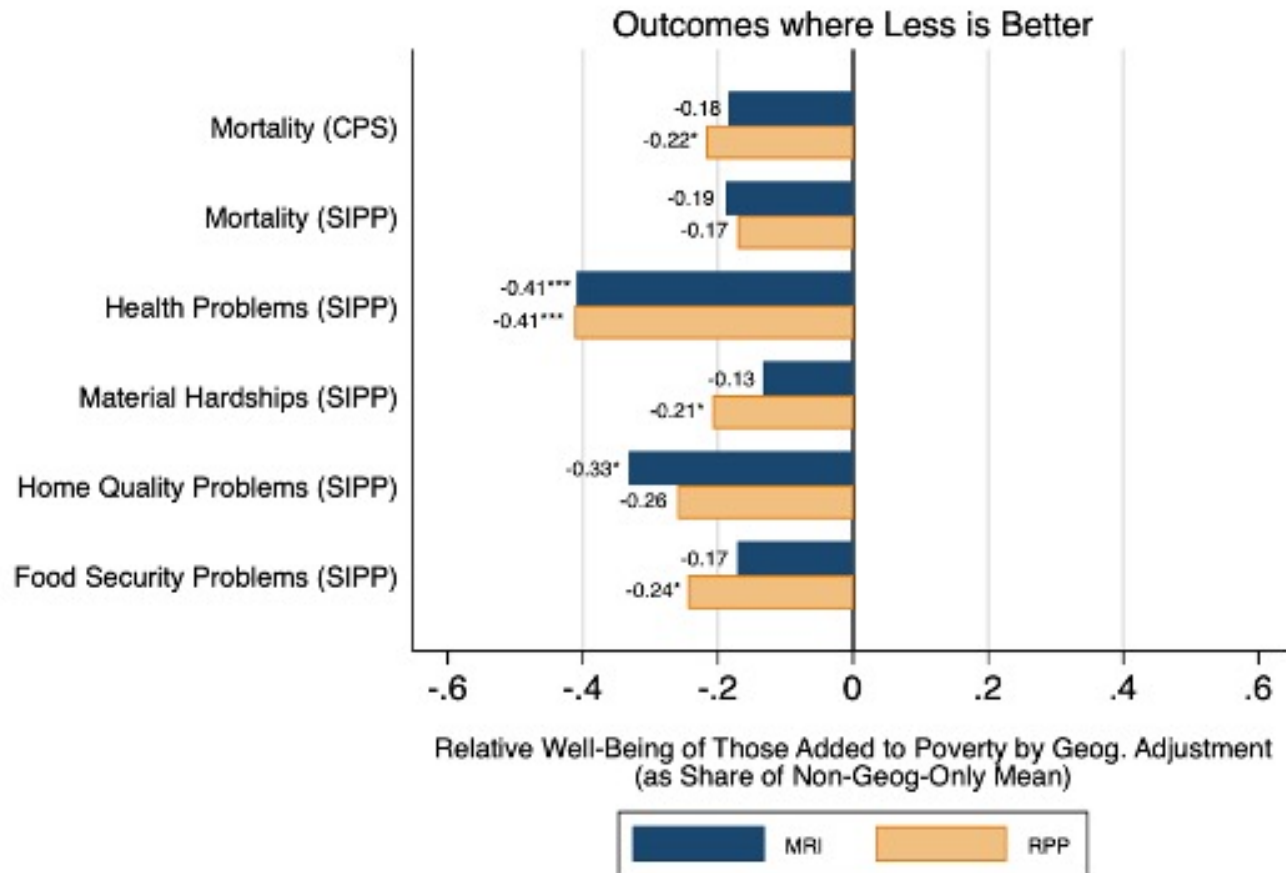# Effects for Years of Education by Adjusted Share, CIPM
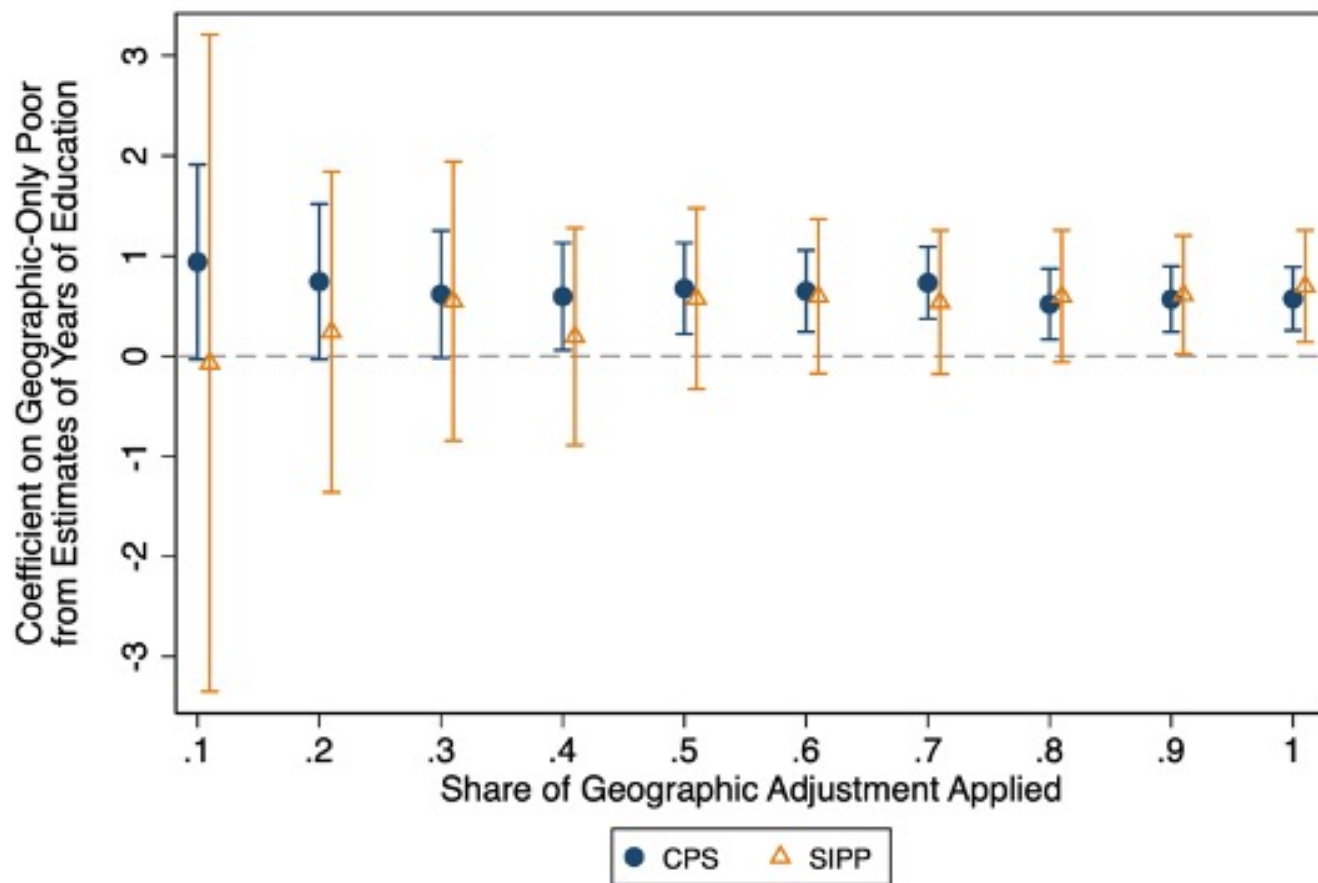
Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

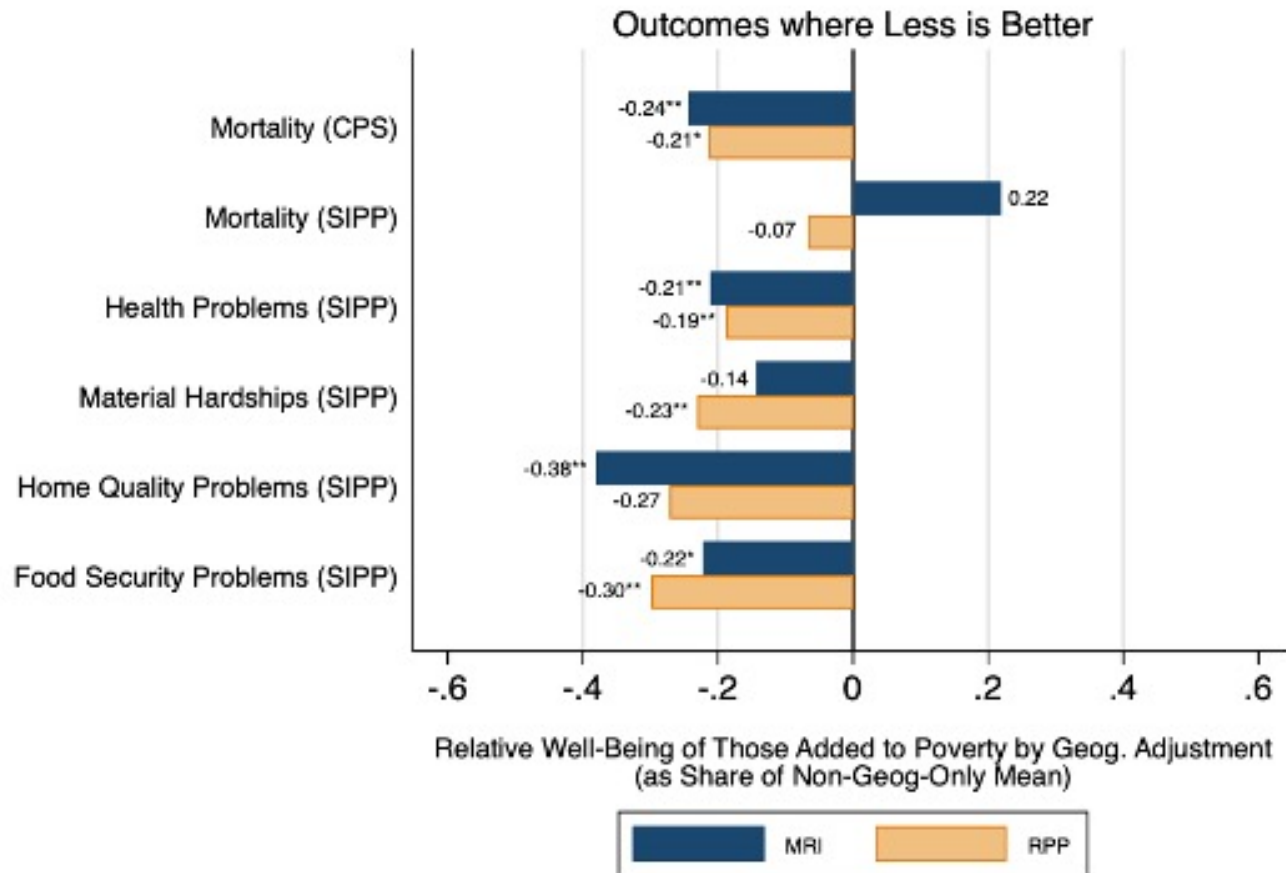# Robustness Check: Estimates Using Regional Price Parities

Overview

- We now examine the robustness of our results to an alternative geographic price index: Regional Price Parities (RPPs)
  - Rather than focusing only on rental costs (as MRI does), RPPs reflect variation in prices across housing, transportation, food, education, recreation, medical, apparel, and other goods

- Replace the original geographic adjustment factor in the poverty thresholds with the RPP
  - Using the RPP-adjusted thresholds, we compute and anchor poverty in the same way as before

- Results using SPM and CIPM
  - Focus on outcomes where "less is better" (e.g., mortality), but broad patterns apply to outcomes where "more is better" (e.g., assets)

Well-Being of Those Added to Poverty Relative to Those Removed by RPP Adjustment, Expressed as Share, SPM

Outcomes where Less is Better

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Well-Being of Those Added to Poverty Relative to Those Removed by RPP Adjustment, Expressed as Share, CIPM

Outcomes where Less is Better

Relative Well-Being of Those Added to Poverty by Geog. Adjustment
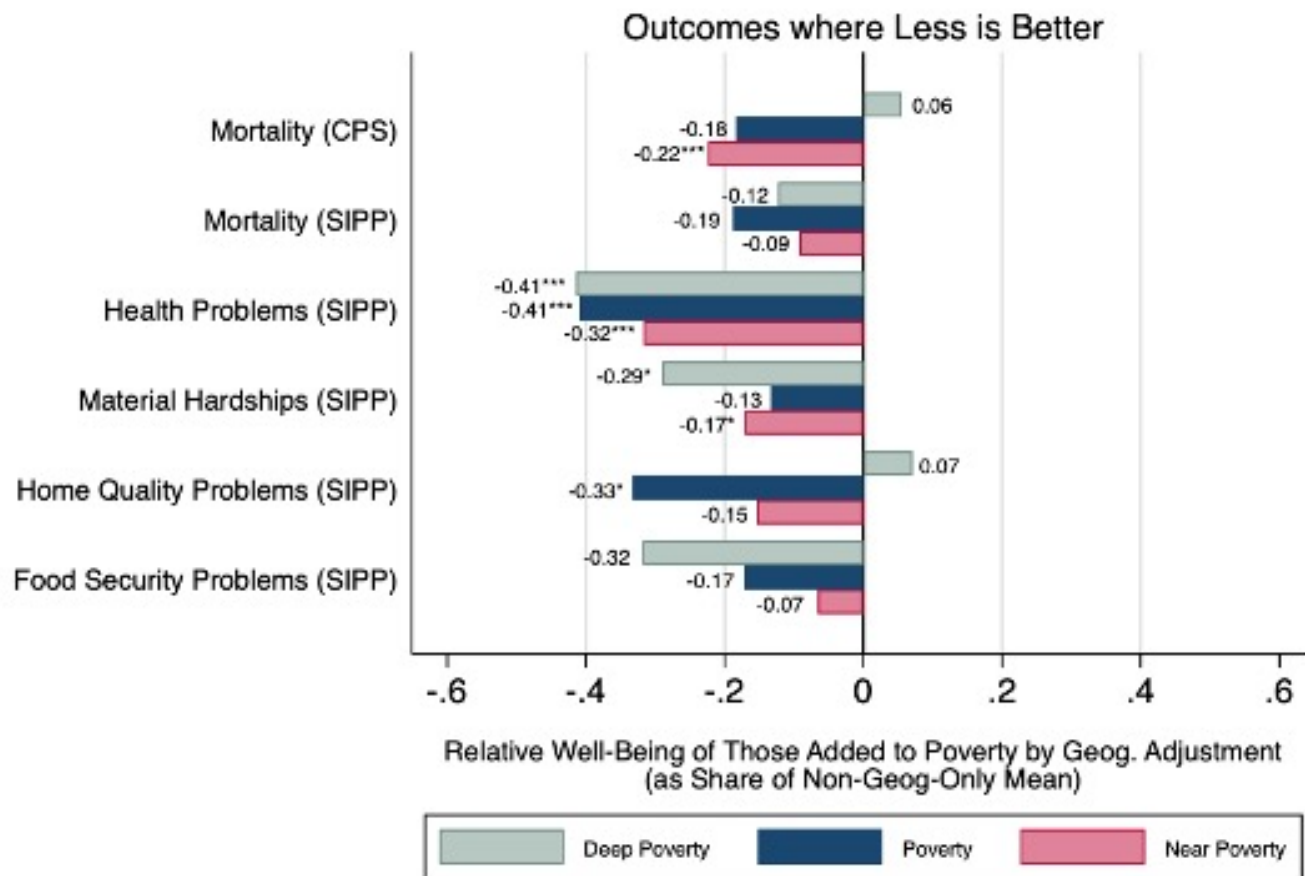(as Share of Non-Geog-Only Mean)

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

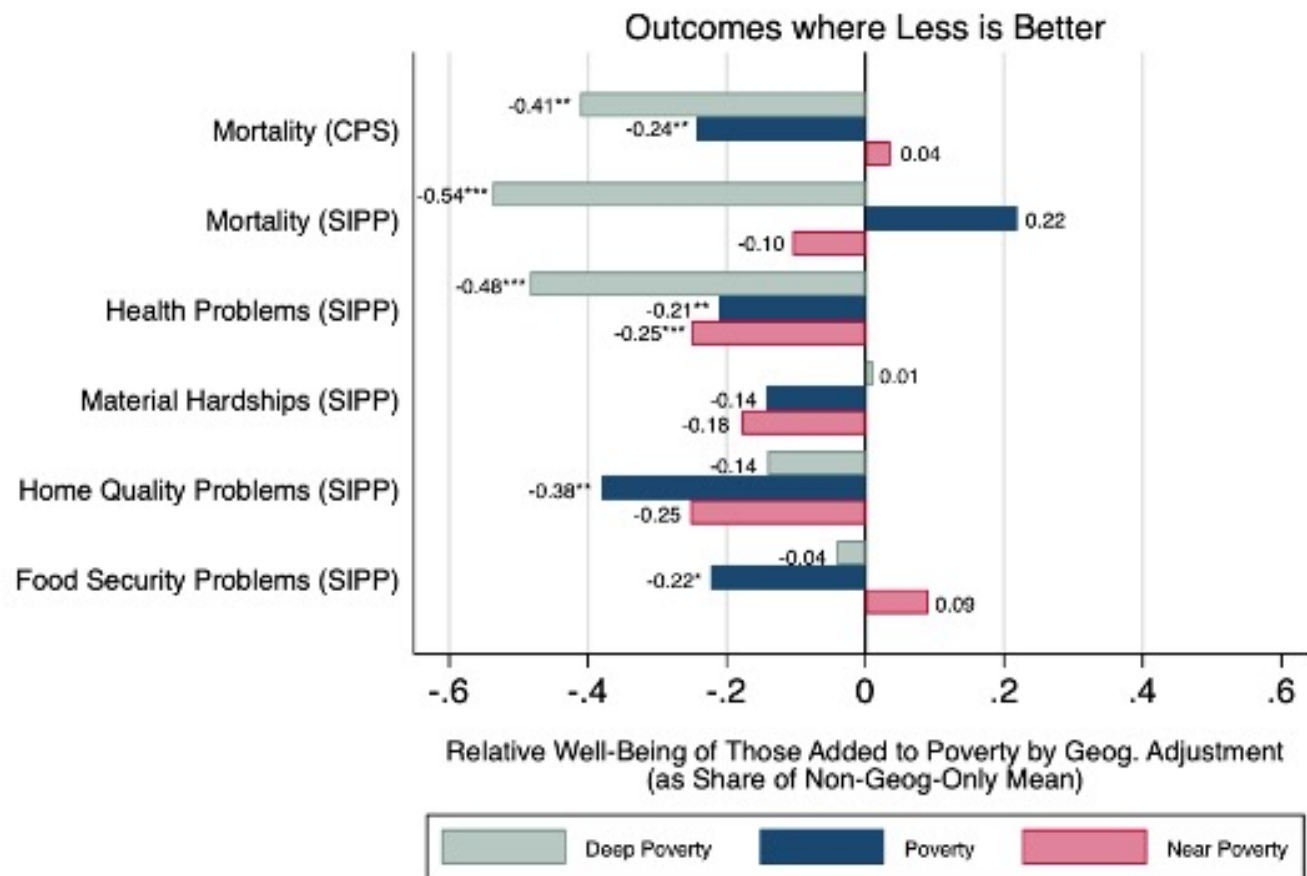# Robustness Check: Estimates for Deep and Near Poverty

Overview

- Finally, we examine the effects of a geographic adjustment (relying again on MRI) on the deprivation of those in deep poverty and near poverty
  - Deep poverty = having incomes below 50% of poverty line
  - Near poverty = having incomes below 150% of poverty line

- Anchor deep poverty rates to 6.7% and near poverty rates to 24.6%
  - Based on rates calculated in the CPS (using survey-reported pre-tax money income and official thresholds) for 2010

- Show results using SPM and CIPM
  - Focus on outcomes where "less is better" (e.g., mortality), but broad patterns apply to outcomes where "more is better" (e.g., assets)

Well-Being of Those Added to Deep/Near Poverty Relative to Those Removed by Geographic Adjustments, Expressed as Share, SPM

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Well-Being of Those Added to Deep/Near Poverty Relative to Those Removed by Geographic Adjustments, Expressed as Share, CIPM

Outcomes where Less is Better

Relative Well-Being of Those Added to Poverty by Geog. Adjustment
(as Share of Non-Geog-Only Mean)

Deep Poverty   Poverty   Near Poverty

Explanations for Results

State and Local Spending Per Capita

Elasticities of Per Capita State Spending with Respect to Price Indices, 2012 Data

Outcome	Elasticity of Outcome with Respect to MRI (1)	Elasticity of Outcome with Respect to RPP (2)
State and Local Spending		
Welfare	1.200**	1.256**
K-12 Education	1.206**	1.363***
Higher Education	-1.04	-0.852
All Education	0.671**	0.840***
Health and Hospitals	-0.591	-0.668
Police	1.800***	1.901***
Environment, Housing	1.773***	1.937***
Other Spending	3.716***	3.871***
Observations	51	51
Unit of Analysis	State	State

Notes: This table shows the coefficients from regressions of the natural log of per capita spending on the natural log of local prices, calculated using both the MRI and the RPP. We obtain per capita state-level spending for fiscal year 2012 from Gordon et al. (2012). Both the MRI and RPP are calculated for calendar year 2012. In column (1), we use $0.618 + 0.382*MRI$ as the price index in order to make the results comparable. 0.382 is the housing share of total expenditures in the Consumer Expenditure Survey (CE). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Wage and Non-Wage Income Sources

Elasticities of Wage and Non-Wage Income with Respect to Price Indices, 2010 CPS Income Data

Outcome	Elasticity of Outcome with Respect to MRI (1)	Elasticity of Outcome with Respect to RPP (2)
Hourly Wage	0.874***	1.072***
Social Security Retirement and Survivors Income Per Person 62+	0.160	0.199*
Social Security Retirement Income Per Person 62+	0.296**	0.396***
Social Security Disability Income Per Capita	-2.173***	-2.151***
Retirement Income Per Person 60+	1.369***	1.381***
Survey SNAP Per Capita	-2.461***	-2.972***
Housing Assistance Per Capita	3.643***	3.304***
SSI Per Capita	-0.252	-0.452
Observations	341	341
Unit of Analysis	CBSA	CBSA

Notes: This table shows the coefficients from regressions of the natural log of various income sources on the natural log of local prices calculated using either the MRI or the RPP. For wages, we use the 2011 CPS ASEC, for individuals ages 18-64 with a high school degree or less and weight the average using survey weights. We calculate per capita outcomes as the weighted total of an outcome divided by the weighted population. Housing assistance is drawn from the Census Bureau's SPM Research File. Both the MRI and RPP are calculated for calendar year 2010. In column (1), we use $0.618 + 0.382*MRI$ as the price index to make the results comparable where 0.382 is the housing share of consumption found using the Consumer Expenditure Survey (CE). *** $p < 0.01$, ** $p < 0.05$, * $p<0.1$.

THE UNIVERSITY OF CHICAGO Harris Public Policy

Conclusions

Summary of Results

- We find that those classified as poor with a geographic adjustment appear to be less deprived than those classified as poor without a geographic adjustment
  - Urban v. rural distinction appears be key between groups

- Results are strikingly consistent across a variety of settings and specifications:
  - 8 out of 10 broad domains of well-being, none point in opposite direction
  - Three poverty measures (SPM, CIPM, OPM) in two separate surveys (CPS and SIPP)
  - Partial adjustments that scale the geographic adjustment factor by different weights (to crudely account for amenities)
  - Regional Price Parities as alternative index
  - Deep and near poverty
  - Regressions with fewer or regional/rural controls

Broader Implications and Next Steps

- Results are directly relevant to efforts that seek to incorporate geographic cost-of-living differences into official poverty measures
    - Proposed by many stakeholders
    - Would transform face of poverty and have potentially enormous ramifications for allocation of anti-poverty funding
- Also relevant to geographic benefit level variation
- In future work, one could:
    - Use more years of data (to increase statistical power and examine generalizability to other time periods)
    - Bring in other indicators of well-being (e.g., mobility)
- Key contribution of this paper: identifying and using wide array of well-being outcomes in survey and admin data to evaluate modifications to poverty measure
    - Can use these outcomes to validate other changes to poverty measure and assess targeting of government programs

Thank you!

bdmeyer@uchicago.edu
derekwu@uchicago.edu
brian.s.curran@gmail.com

Appendix Materials

Plan

- **Empirical Evidence**
  - Refers to other parts of the larger research project that I will only briefly explain

- **Explanations for our results**
  - Correlations of local characteristics with prices

- **Theory**
  - Simple model due to Glaeser (2011) suggests ambiguous result
  - Hard to incorporate key empirical features in simple model

Relative Well-Being of Those Added to Poverty with a RPP Adjustment (Relative to Those Removed), SPM

Well-Being Measures	Point Estimate	Standard Error	Mean for Non-Geog Poor	Overall Mean	Supports Geog Adj? (+/-)
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Permanent Income (*CPS*)	26,230***	(7,985)	27,380	98,090	–
Permanent Income (*SIPP*)	17,310***	(4,074)	34,050	92,930	–
Years of Education (*CPS*)	0.4720***	(0.1650)	11.900	13.640	–
Years of Education (*SIPP*)	0.6370***	(0.2360)	12.090	13.700	–
Head Died by 2019 (*CPS*)	-0.0266	(0.0164)	0.130	0.071	–
Head Died by 2019 (*SIPP*)	-0.0229	(0.0185)	0.121	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0558***	(0.0153)	--	0.118	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0729***	(0.0149)	0.189	0.103	–
Number of Material Hardships (*SIPP*)	-0.2410*	(0.1320)	1.157	0.646	–
Number of Home Quality Problems (*SIPP*)	-0.0908	(0.0641)	0.349	0.224	–
Number of Appliances (*SIPP*)	-0.3240**	(0.1460)	6.271	6.988	+
Net Worth (*SIPP*)	66,600	(46,610)	36,170	272,200	–
Total Wealth (*SIPP*)	97,360**	(46,300)	74,900	384,900	–
Number of Food Security Problems (*SIPP*)	-0.2430*	(0.1260)	0.992	0.460	–
Number of Public Service Problems (*SIPP*)	-0.0078	(0.1430)	--	0.949	–

*** p<0.01, ** p<0.05, * p<0.1

THE UNIVERSITY OF CHICAGO **Harris** Public Policy | Comprehensive Income Dataset Project

Relative Well-Being of Those Added to Poverty with a RPP Adjustment (Relative to Those Removed), CIPM

Well-Being Measures	Point Estimate	Standard Error	Mean for Non-Geog Poor	Overall Mean	Supports Geog Adj? (+/-)
	(1)	(2)	(3)	(4)	(5)
Permanent Income (*CPS*)	22,160***	(5,632)	24,860	98,090	–
Permanent Income (*SIPP*)	15,030***	(3,426)	24,990	92,930	–
Years of Education (*CPS*)	0.7800***	(0.1430)	11.730	13.630	–
Years of Education (*SIPP*)	0.4950*	(0.2930)	11.930	13.700	–
Head Died by 2019 (*CPS*)	-0.0197*	(0.0112)	0.100	0.071	–
Head Died by 2019 (*SIPP*)	-0.0085	(0.0188)	0.097	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0648***	(0.0149)	--	--	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0361**	(0.0151)	0.182	0.104	–
Number of Material Hardships (*SIPP*)	-0.2930**	(0.1390)	1.270	0.645	–
Number of Home Quality Problems (*SIPP*)	-0.1090	(0.0718)	0.401	0.225	–
Number of Appliances (*SIPP*)	-0.3590**	(0.1530)	6.256	6.992	+
Net Worth (*SIPP*)	21,380	(23,390)	4,734	273,500	–
Total Wealth (*SIPP*)	58,590***	(21,630)	26,340	386,300	–
Number of Food Security Problems (*SIPP*)	-0.2910**	(0.1130)	0.975	0.459	–
Number of Public Service Problems (*SIPP*)	-0.0810	(0.1540)	--	0.950	–

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization numbers CBDRB-FY-ERD002-020, CBDRB-FY21-ERD002-002, and CBDRB-FY2021-CES005-016.

Relative Well-Being of Those Added to Deep Poverty with a Geog. Adjustment (Relative to Those Removed), SPM

Well-Being Measures	Point Estimate	Standard Error	Mean for Non-Geog Poor	Overall Mean	Supports Geog Adj? (+/-)
	(1)	(2)	(3)	(4)	(5)
Permanent Income (*CPS*)	19,270***	(6,748)	27,840	98,620	–
Permanent Income (*SIPP*)	7,228	(7,340)	29,770	92,930	–
Years of Education (*CPS*)	1.2130***	(0.2600)	11.420	13.640	–
Years of Education (*SIPP*)	0.7400**	(0.3700)	11.530	13.700	–
Head Died by 2019 (*CPS*)	0.0076	(0.0294)	0.108	0.071	+
Head Died by 2019 (*SIPP*)	-0.0058	(0.0399)	0.131	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0527**	(0.0212)	--	0.118	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0793***	(0.0265)	0.194	0.103	–
Number of Material Hardships (*SIPP*)	-0.4430*	(0.2330)	1.528	0.646	–
Number of Home Quality Problems (*SIPP*)	0.0338	(0.1440)	0.475	0.224	+
Number of Appliances (*SIPP*)	-0.3480*	(0.2050)	6.053	6.988	+
Net Worth (*SIPP*)	25,060	(53,190)	33,290	272,200	–
Total Wealth (*SIPP*)	27,860	(48,670)	92,390	384,900	–
Number of Food Security Problems (*SIPP*)	-0.3270	(0.2350)	1.027	0.460	–
Number of Public Service Problems (*SIPP*)	-0.2920	(0.2230)	--	0.949	–

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Relative Well-Being of Those Added to Deep Poverty with a Geog. Adjustment (Relative to Those Removed), CIPM

Well-Being Measures	Point Estimate (1)	Standard Error (2)	Mean for Non-Geog Poor (3)	Overall Mean (4)	Supports Geog Adj? (+/-) (5)
Permanent Income (*CPS*)	22,260***	(6,690)	19,050	98,090	–
Permanent Income (*SIPP*)	21,230***	(6,977)	17,080	92,930	–
Years of Education (*CPS*)	0.4280*	(0.2490)	11.700	13.630	–
Years of Education (*SIPP*)	0.3410	(0.3760)	11.560	13.700	–
Head Died by 2019 (*CPS*)	-0.0491**	(0.0210)	0.123	0.071	–
Head Died by 2019 (*SIPP*)	-0.0912***	(0.0325)	0.163	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0851***	(0.0229)	--	--	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.1010***	(0.0224)	0.211	0.104	–
Number of Material Hardships (*SIPP*)	0.0152	(0.2390)	1.393	0.645	+
Number of Home Quality Problems (*SIPP*)	-0.0610	(0.1090)	0.433	0.225	–
Number of Appliances (*SIPP*)	0.1630	(0.2850)	5.709	6.992	–
Net Worth (*SIPP*)	6,253	(34,910)	-1,445	273,500	–
Total Wealth (*SIPP*)	41,220	(33,480)	22,160	386,300	–
Number of Food Security Problems (*SIPP*)	-0.0473	(0.2610)	1.152	0.459	–
Number of Public Service Problems (*SIPP*)	-0.0046	(0.2340)	--	0.950	–

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Relative Well-Being of Those Added to Near Poverty with a Geog. Adjustment (Relative to Those Removed), SPM

Well-Being Measures	Point Estimate	Standard Error	Mean for Non-Geog Poor	Overall Mean	Supports Geog Adj? (+/-)
	(1)	(2)	(3)	(4)	(5)
Permanent Income (*CPS*)	20,610***	(3,398)	37,170	98,620	–
Permanent Income (*SIPP*)	10,880*	(6,327)	37,990	92,930	–
Years of Education (*CPS*)	0.3530***	(0.1080)	12.420	13.630	–
Years of Education (*SIPP*)	0.6350***	(0.1740)	12.450	13.700	–
Head Died by 2019 (*CPS*)	-0.0253***	(0.0092)	0.108	0.071	–
Head Died by 2019 (*SIPP*)	-0.0124	(0.0150)	0.098	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0384***	(0.0098)	--	0.118	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0481***	(0.0123)	0.163	0.103	–
Number of Material Hardships (*SIPP*)	-0.1710*	(0.1010)	1.000	0.646	–
Number of Home Quality Problems (*SIPP*)	-0.0412	(0.0389)	0.268	0.224	–
Number of Appliances (*SIPP*)	-0.1950*	(0.1060)	6.526	6.988	+
Net Worth (*SIPP*)	57,870**	(23,640)	33,660	272,200	–
Total Wealth (*SIPP*)	100,400***	(25,630)	85,080	384,900	–
Number of Food Security Problems (*SIPP*)	-0.0401	(0.0732)	0.611	0.460	–
Number of Public Service Problems (*SIPP*)	-0.0114	(0.1200)	--	0.949	–

*** p<0.01, ** p<0.05, * p<0.1

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization numbers CBDRB-FY-ERD002-020, CBDRB-FY21-ERD002-002, and CBDRB-FY2021-CES005-016.

Relative Well-Being of Those Added to Near Poverty with a Geog. Adjustment (Relative to Those Removed), CIPM
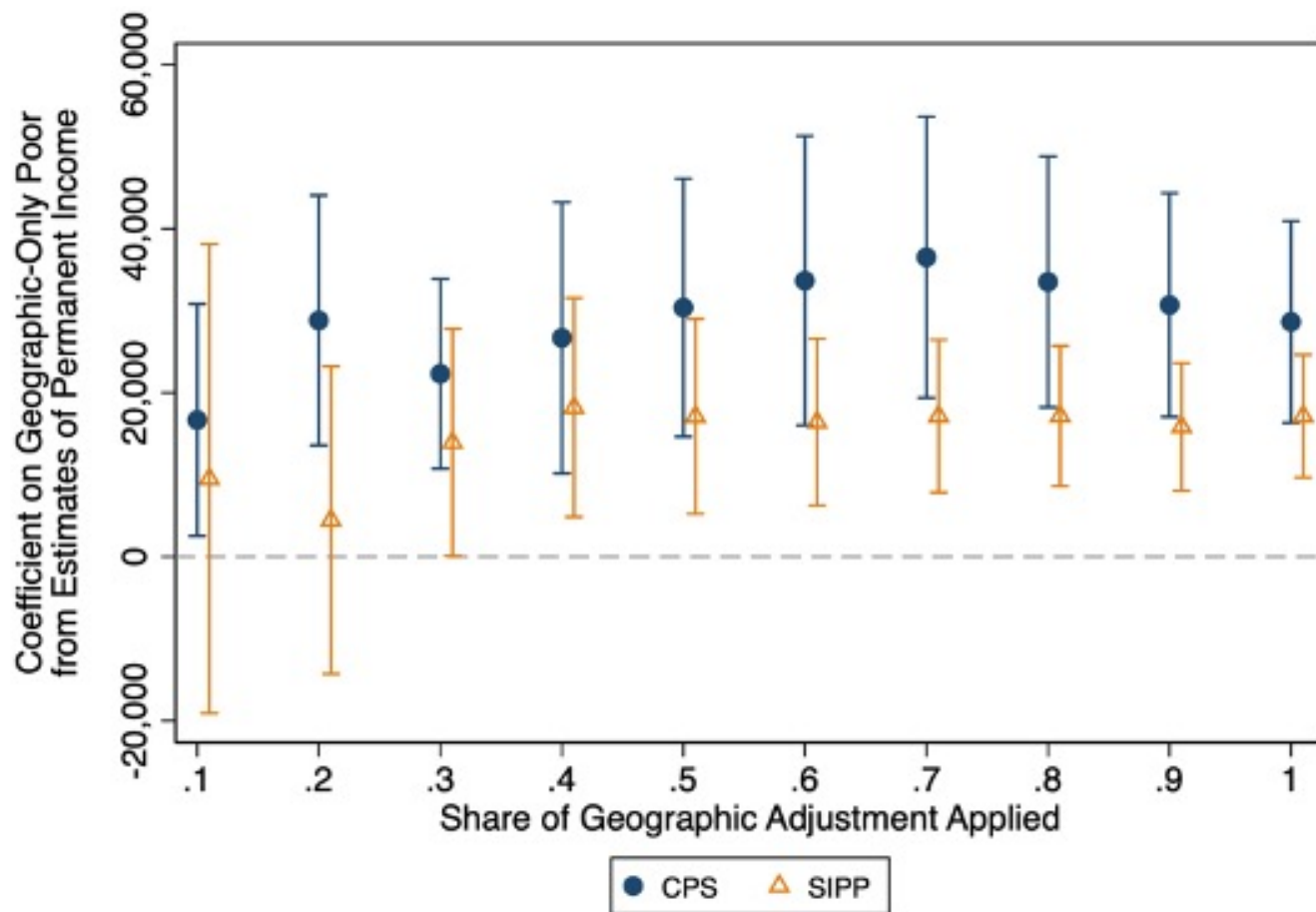
Well-Being Measures	Point Estimate (1)	Standard Error (2)	Mean for Non-Geog Poor (3)	Overall Mean (4)	Supports Geog Adj? (+/-) (5)
Permanent Income (*CPS*)	14,220***	(2,792)	33,340	98,090	–
Permanent Income (*SIPP*)	15,220***	(2,709)	35,940	92,930	–
Years of Education (*CPS*)	0.3830**	(0.1550)	12.390	13.630	–
Years of Education (*SIPP*)	0.2970	(0.2180)	12.520	13.700	–
Head Died by 2019 (*CPS*)	-0.0014	(0.0106)	0.088	0.071	–
Head Died by 2019 (*SIPP*)	-0.0116	(0.0138)	0.083	0.080	–
Ind. Has Poor/Fair Health Quality (*CPS*)	-0.0164	(0.0112)	--	--	–
Ind. Has Poor/Fair Health Quality (*SIPP*)	-0.0317**	(0.0121)	0.139	0.104	–
Number of Material Hardships (*SIPP*)	-0.1930	(0.1180)	1.084	0.645	–
Number of Home Quality Problems (*SIPP*)	-0.0822	(0.0592)	0.326	0.225	–
Number of Appliances (*SIPP*)	-0.3360***	(0.1050)	6.599	6.992	+
Net Worth (*SIPP*)	46,460*	(26,100)	7,414	273,500	–
Total Wealth (*SIPP*)	77,120***	(23,380)	48,800	386,300	–
Number of Food Security Problems (*SIPP*)	0.0656	(0.1230)	0.719	0.459	+
Number of Public Service Problems (*SIPP*)	0.0546	(0.1400)	--	0.950	+

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

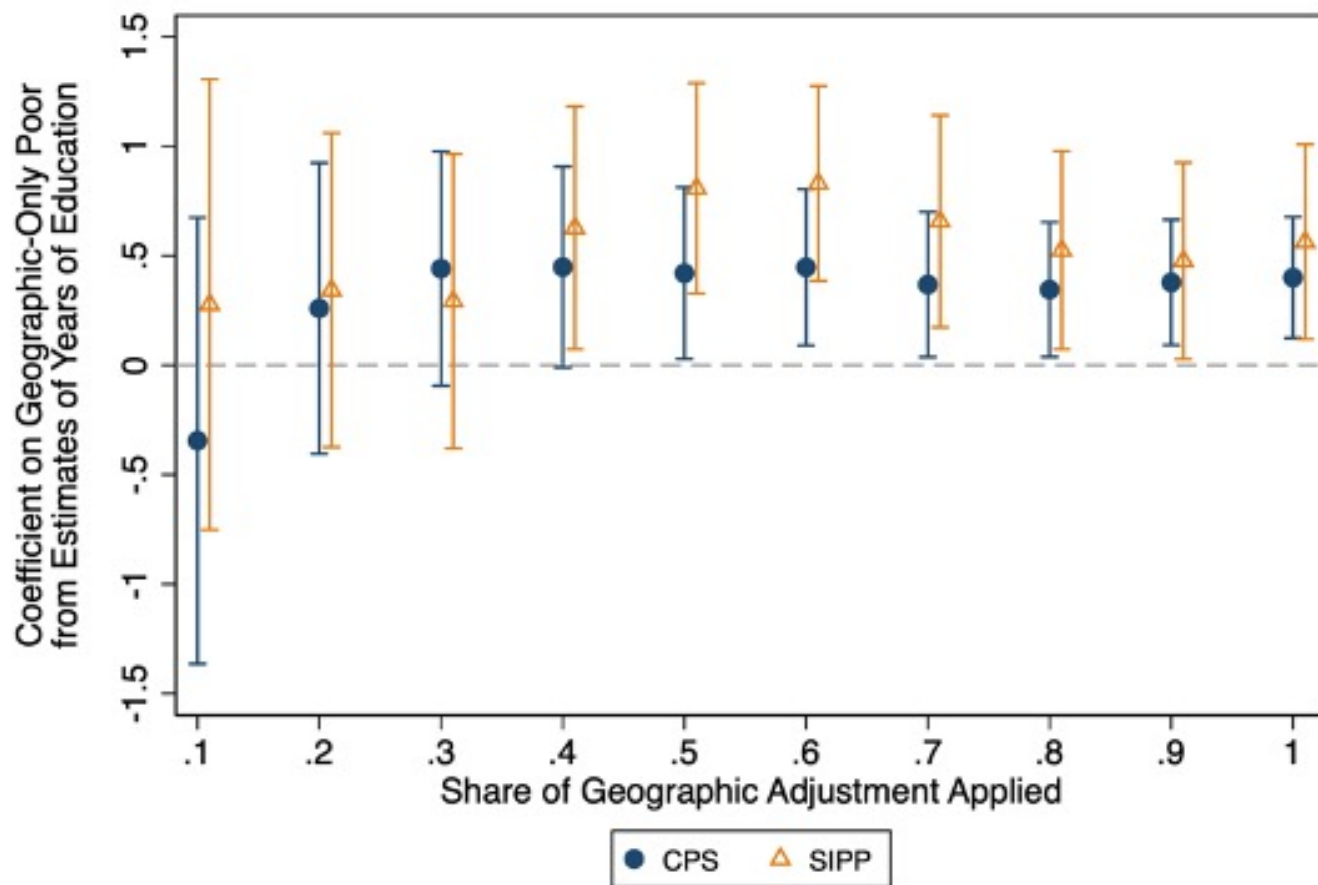Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization numbers CBDRB-FY-ERD002-020, CBDRB-FY21-ERD002-002, and CBDRB-FY2021-CES005-016.
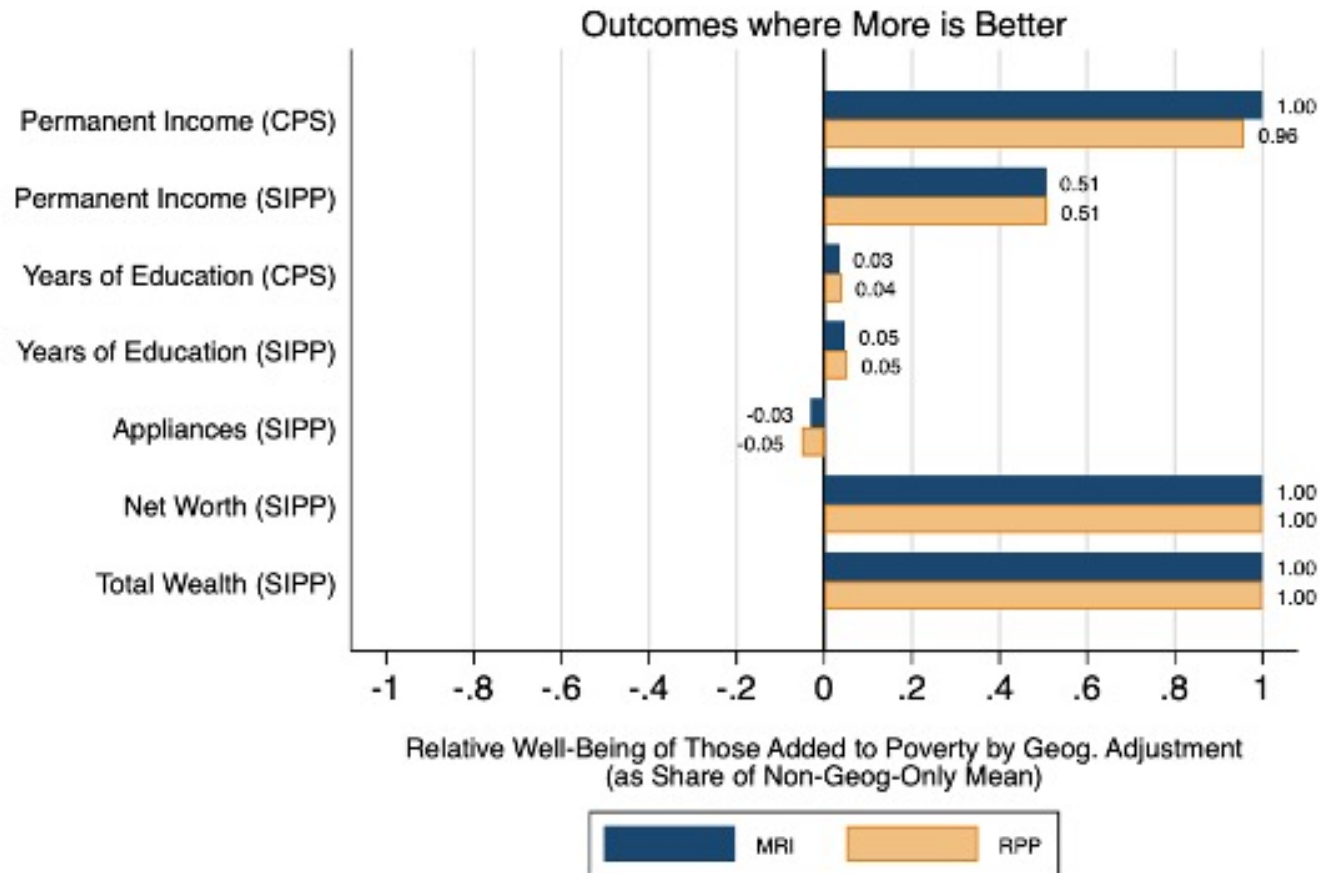
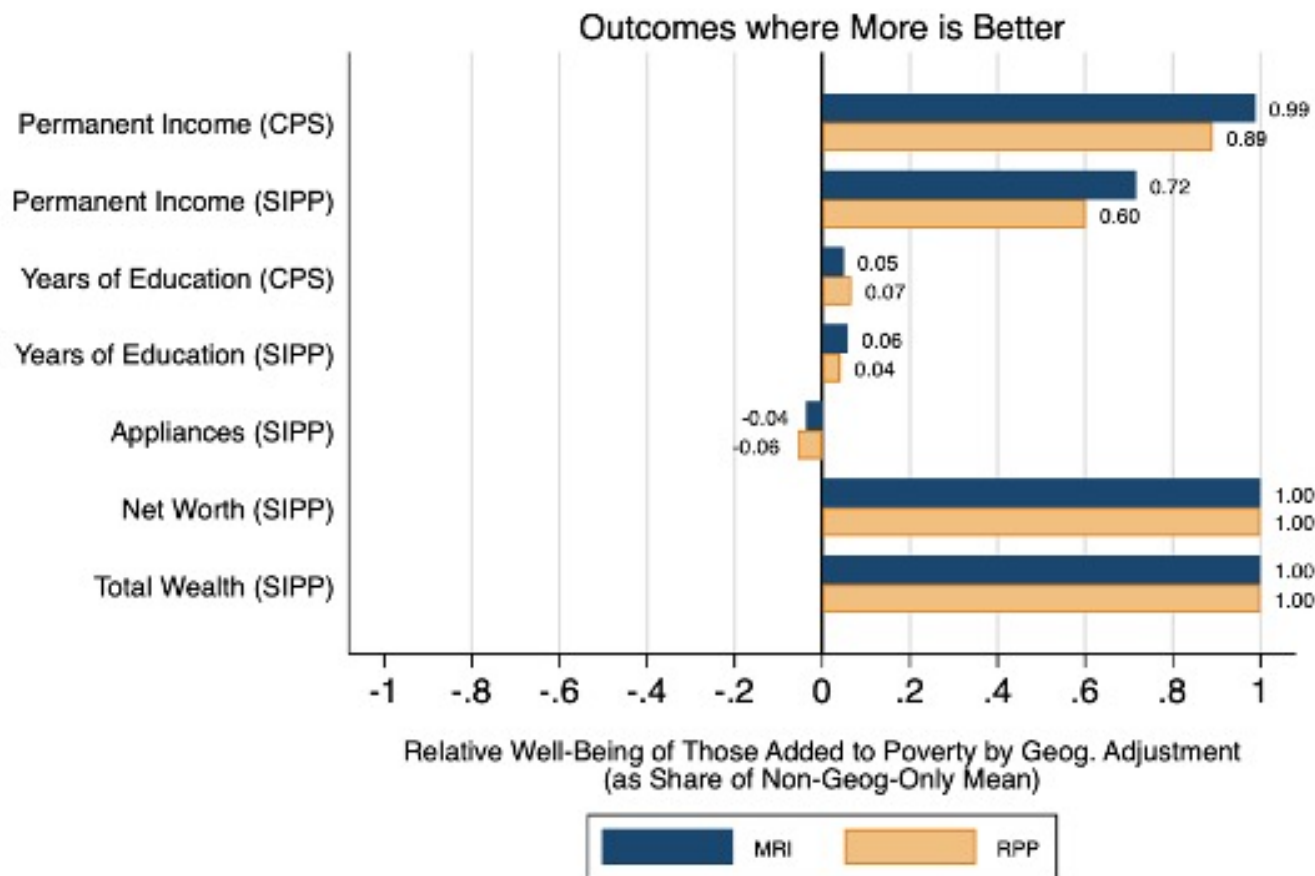# Effects for Permanent Income by Adjusted Share, SPM

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Effects for Years of Education by Adjusted Share, SPM

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Well-Being of Those Added to Poverty Relative to Those Removed by RPP Adjustment, Expressed as Share, SPM

Outcomes where More is Better

Relative Well-Being of Those Added to Poverty by Geog. Adjustment
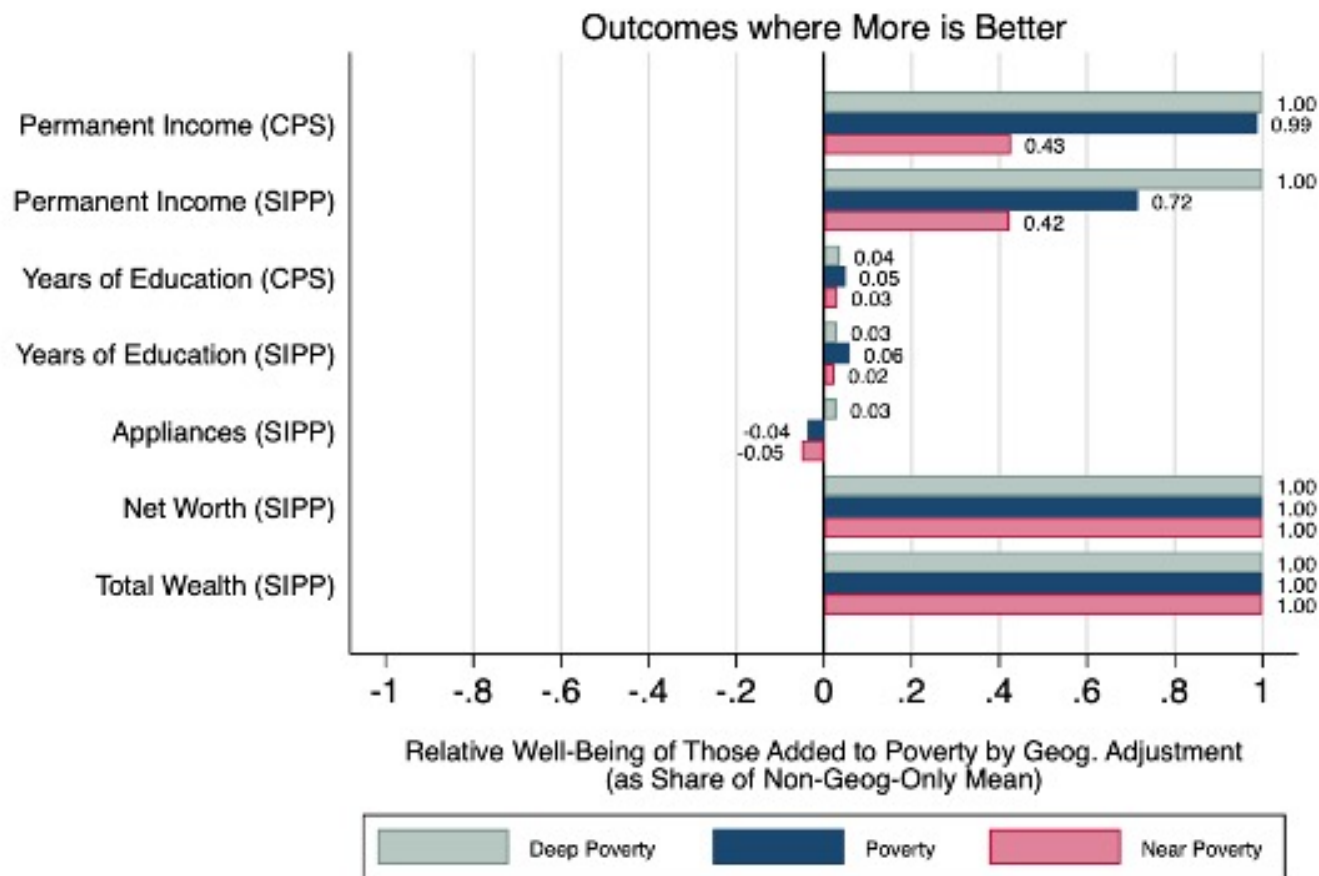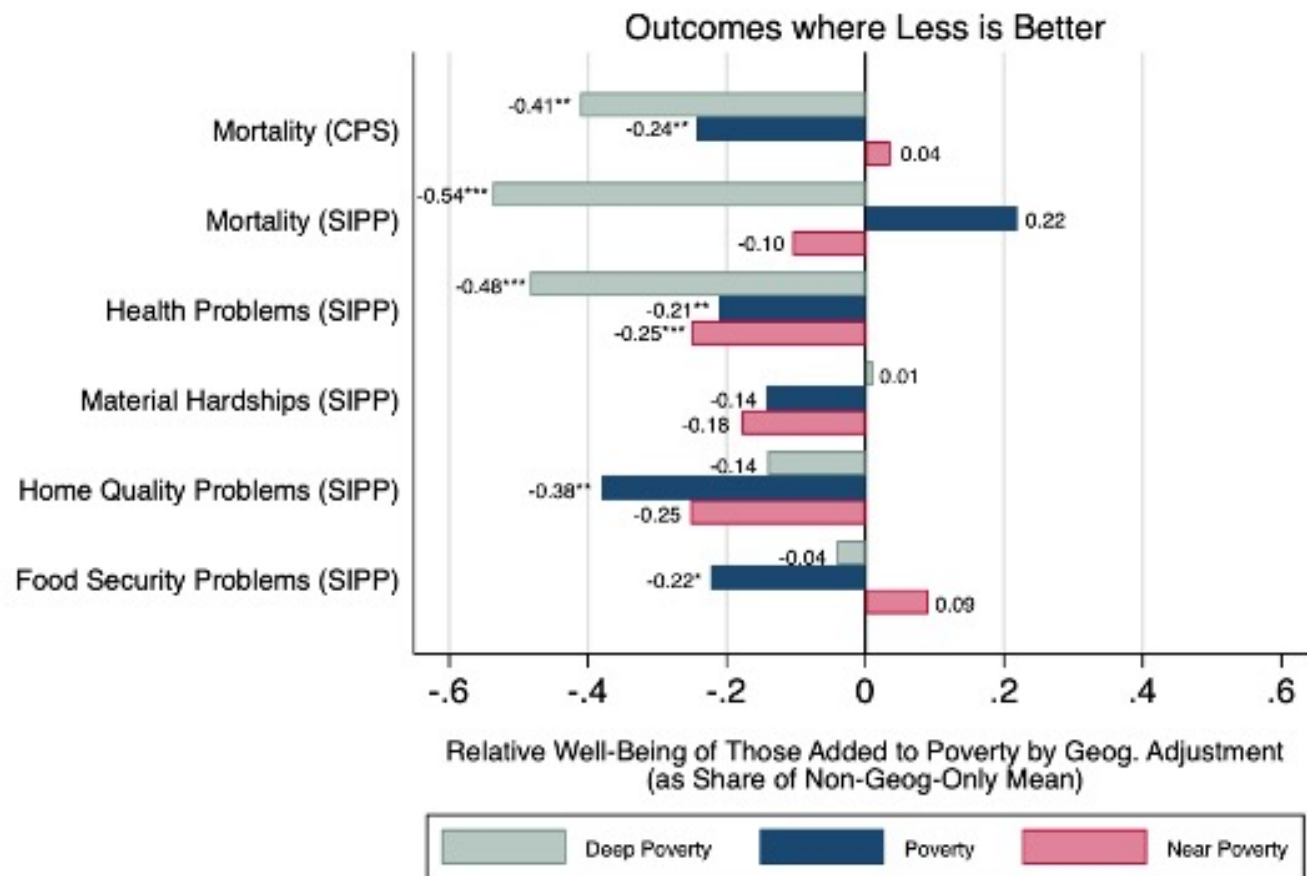(as Share of Non-Geog-Only Mean)

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Well-Being of Those Added to Poverty Relative to Those Removed by RPP Adjustment, Expressed as Share, CIPM

Outcomes where More is Better

Permanent Income (CPS): 0.99 (MRI), 0.89 (RPP)
Permanent Income (SIPP): 0.72 (MRI), 0.60 (RPP)
Years of Education (CPS): 0.05 (MRI), 0.07 (RPP)
Years of Education (SIPP): 0.06 (MRI), 0.04 (RPP)
Appliances (SIPP): -0.04 (MRI), -0.06 (RPP)
Net Worth (SIPP): 1.00 (MRI), 1.00 (RPP)
Total Wealth (SIPP): 1.00 (MRI), 1.00 (RPP)

Relative Well-Being of Those Added to Poverty by Geog. Adjustment
(as Share of Non-Geog-Only Mean)

MRI | RPP

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Well-Being of Those Added to Deep/Near Poverty Relative to Those Removed by Geographic Adjustments, Expressed as Share, SPM

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Well-Being of Those Added to Deep/Near Poverty Relative to Those Removed by Geographic Adjustments, Expressed as Share, CIPM

Outcomes where Less is Better

Relative Well-Being of Those Added to Poverty by Geog. Adjustment
(as Share of Non-Geog-Only Mean)

Deep Poverty   Poverty   Near Poverty

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Discl. Review Board, authorization #s CBDRB-FY20-ERD002-020 & CBDRB-FY21-ERD002-002

Association Between Prices, Wages, and Spending
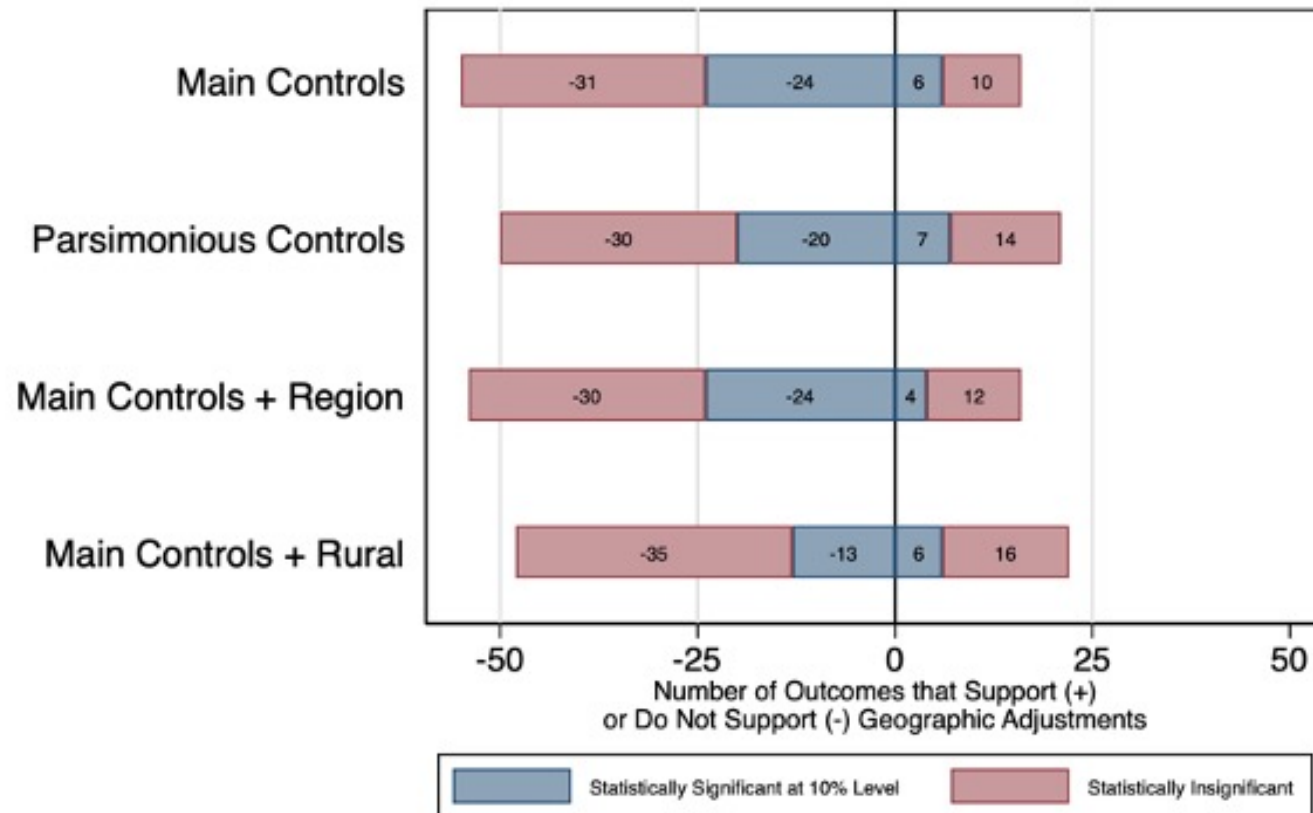
- Summarize elasticity table

Association Between Prices and Non-Wage Income

- Using linked survey/admin data construct the following dependent variables at the CBSA level and State
    - Use survey sample to entirely construct the variables, i.e. sum up weighted benefits in survey and divide by weighted population in survey

- Social Security retirement and survivors per person 62+

- DI per capita

- Retirement income per person 60+

- SNAP per capita

- Housing Assistance from SPM research file per capita

- SSI per capita

- Using the CPS, regress these variables on our two price measures
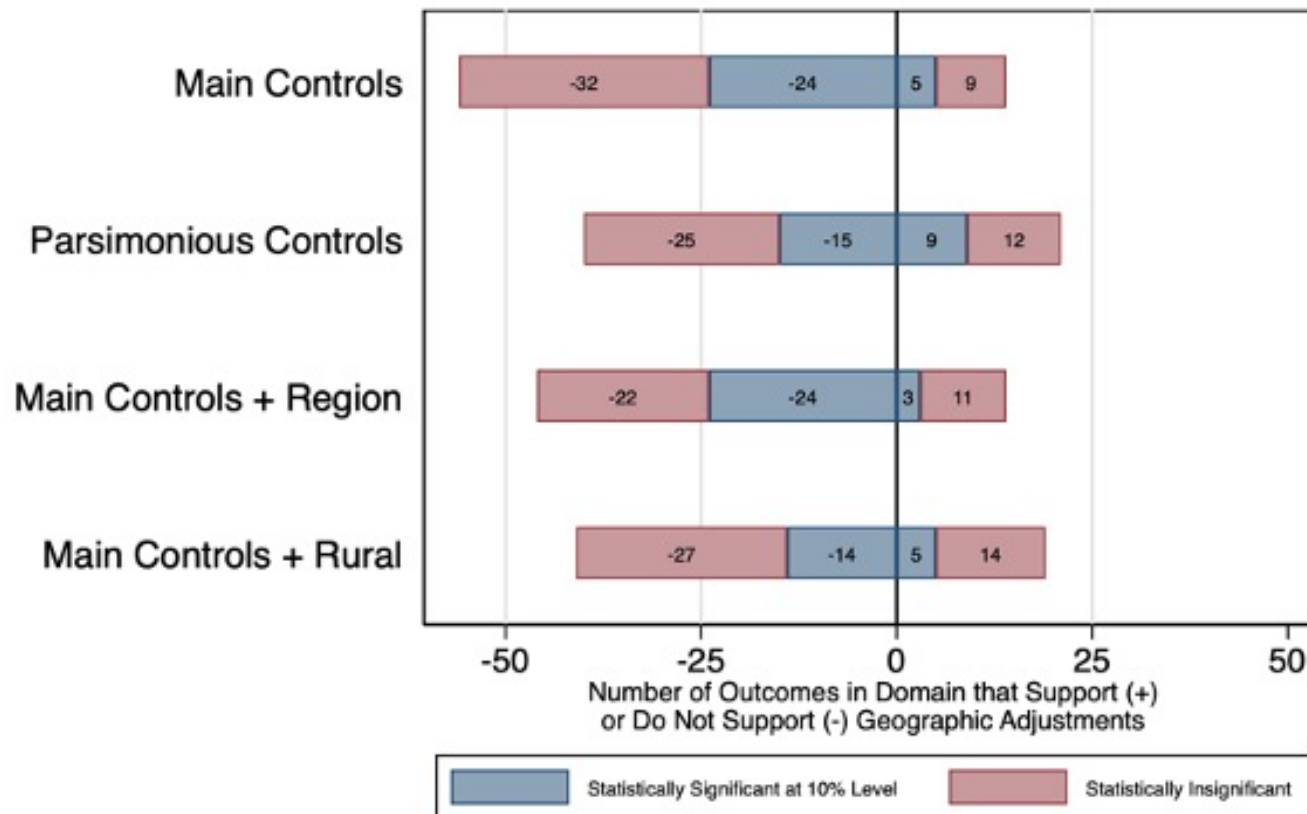
Literature and Our Contributions

- Previous studies have examined how geographic adjustments to poverty correlate with:
    - State-level material deprivation (Renwick 2018, 2019)
    - Mortality in Canada (Baker, Currie, & Schwandt 2019)
    - Education and private health ins. (Meyer & Sullivan 2012)

- Our paper makes several contributions:
    - Examines a wider and more substantive array of well-being measures across multiple surveys and admin. data
    - Produces results using a more accurate and comprehensive poverty measure built from linked survey and admin. data
    - Compares different poverty measures on equal footing by equalizing shares of individuals in poverty under alternative measures

Number of Outcomes for Which a Geographic Adjustments Identifies a More Deprived Population: SPM (by Model) – Version 1
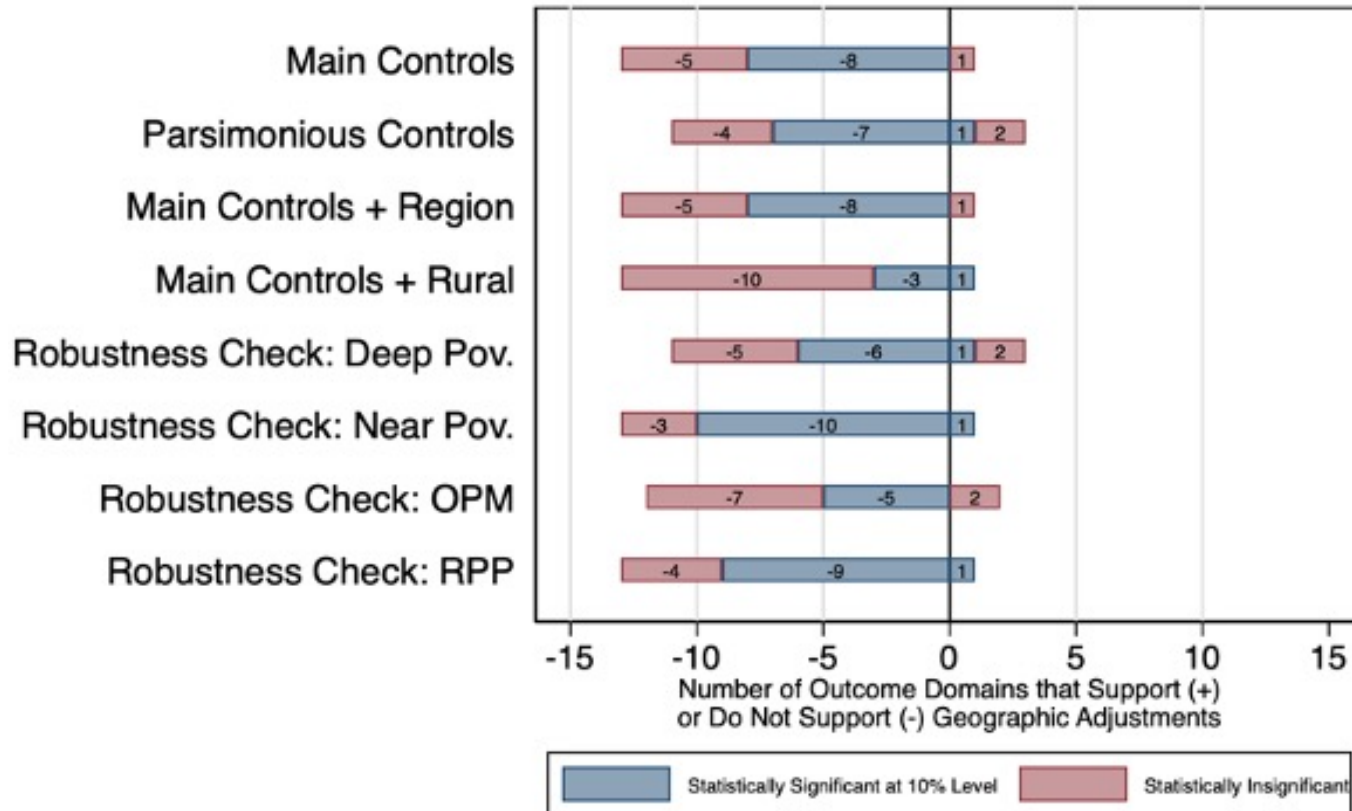

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization #s CBDRB-FY20-ERD002-020, CBDRB-FY21-ERD002-002, & CBDRB-FY2021-CES005-016
Note: Outcome domains include mortality, permanent income, education, and health problems (in CPS & SIPP), and appliances, assets, food security problems, home quality problems, material hardships, & public services problems (in SIPP only)

Number of Outcomes for Which a Geographic Adjustments Identifies a More Deprived Population: CIPM (by Model) – Version 1
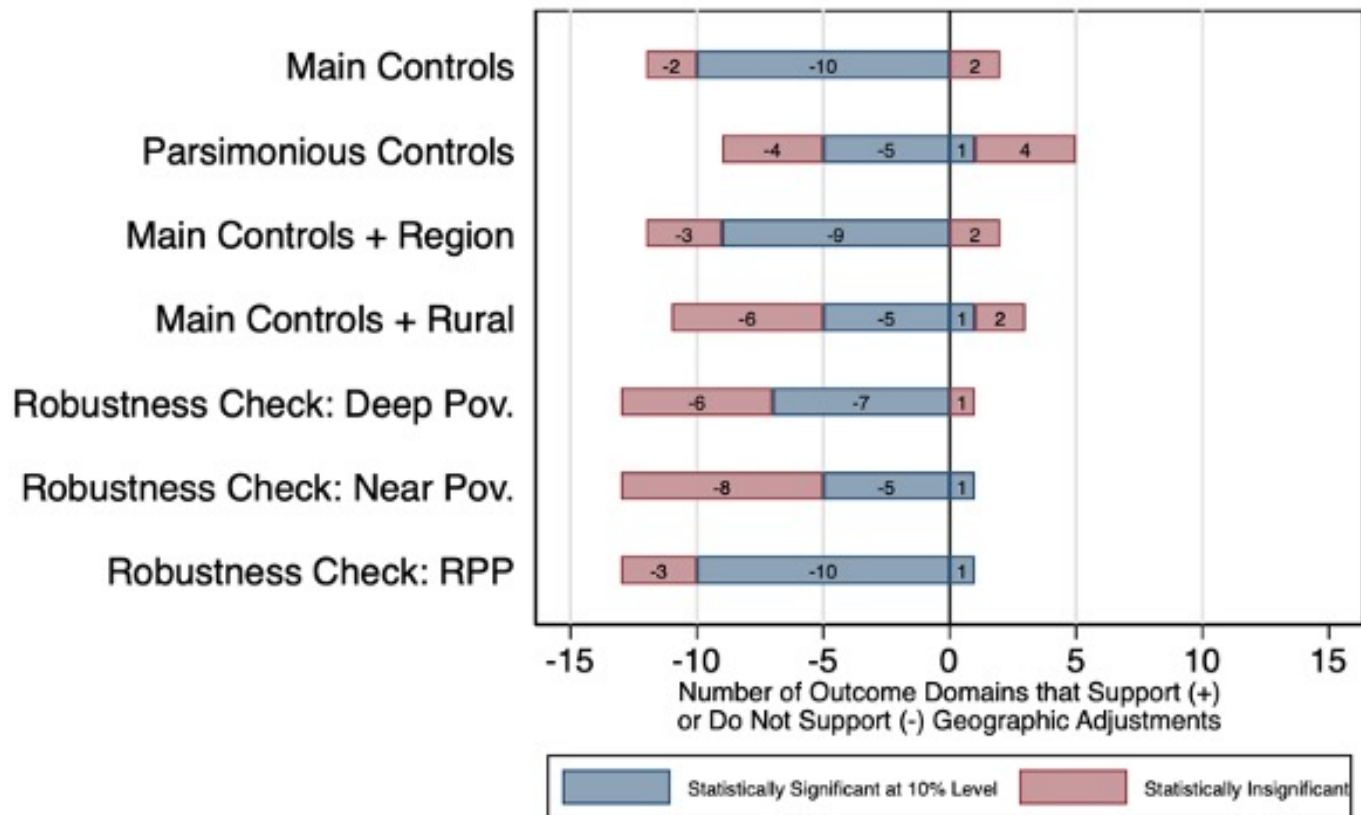

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization #s CBDRB-FY20-ERD002-020, CBDRB-FY21-ERD002-002, & CBDRB-FY2021-CES005-016
Note: Outcome domains include mortality, permanent income, education, and health problems (in CPS & SIPP), and appliances, assets, food security problems, home quality problems, material hardships, & public services problems (in SIPP only)

Number of Outcomes for Which a Geographic Adjustments Identifies a More Deprived Population: SPM (by Model) – Version 2

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization #s CBDRB-FY20-ERD002-020, CBDRB-FY21-ERD002-002, & CBDRB-FY2021-CES005-016
Note: Outcome domains include mortality, permanent income, education, and health problems (in CPS & SIPP), and appliances, assets, food security problems, home quality problems, material hardships, & public services problems (in SIPP only)

Number of Outcomes for Which a Geographic Adjustments Identifies a More Deprived Population: CIPM (by Model) – Version 2

Sources: 2011 CPS ASEC, Waves 5-8 of 2008 SIPP Panel, Various Administrative Data
Approved for release by the Census Bureau's Disclosure Review Board, authorization #s CBDRB-FY20-ERD002-020, CBDRB-FY21-ERD002-002, & CBDRB-FY2021-CES005-016
Note: Outcome domains include mortality, permanent income, education, and health problems (in CPS & SIPP), and appliances, assets, food security problems, home quality problems, material hardships, & public services problems (in SIPP only)