Does Rich Equal Expensive?

The Effect of Income on Cost of Living

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Background

Research Question:

- Does higher earnings in an area make the area more expensive?

Motivation:

- Majority of states make no cost of living adjustments for heterogeneity in cost of living when setting Medicaid income eligibility. Higher poverty incidence when federal assistance eligibility not adjusted for local cost of living (Khandker & Mitchell, 1998)
- High cost areas experiencing greater shortages in frontline workers and public school teachers (Fuller and Raman, 2023; Nguyen, Lam, & Bruno, 2022)

Data

Dependent Variable:

- Cost of Living Index (COLI): a composite index of costs of groceries, housing, utilities, and transportation within a CBSA
  (Source: The Council for Community and Economic Research)

Independent Variables:

- Income per Capita

  (Source: Bureau of Economic Analysis)
- Population

  (Source: Bureau of Economic Analysis)
- Percent of CBSA with Bachelor's degree

  (Source: IPUMS Current Population Survey)
- Percent of CBSA below official poverty line
  (Source: IPUMS Current Population Survey)

Data

Table 1: Summary Statistics

	mean	median	std	min	max
Cost of Living Index (COLI)	118.66	100	35.84	75.00	255.00
Income per Capita	63,435	56,774	24,580	26,823	193,617
Population	697,000	396,000	930,000	103,000	10,097,000
Percent with Bachelor's Degree	28.34	27.27	11.05	2.15	59.69
Percent below Poverty Line	10.44	9.62	6.74	0.52	45.00

Methodology

$$Y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma_d D_{i,t} + \theta_i + \phi_t + \epsilon_{i,t}$$

Where:

- Y is log(Cost of Living Index)
- X is log(Income Per Capita)
- D is a vector of d demographic controls
- i indexes CBSAs
- $t \in \{2018, 2019, 2020, 2021, 2022\}$
- fixed effects for CBSA (θ_i) and year (ϕ_t)
- robust standard errors

Results

Table 2: Regression Results

Variable	1	2	3	4	5	6
log Income Per Capita	0.3454***	0.3160***	0.2499***	0.3465***	0.2996***	0.2996***
	(0.022)	(0.022)	(0.034)	(0.023)	(0.036)	(0.036)
Population (Millions)		0.0704***	0.0650***	0.0691***	0.0635***	0.0635***
		(0.011)		(0.011)	(0.011)	(0.011)
Percent w/ Bachelor's			0.0033***		0.0026**	0.0026**
			(0.001)		(0.001)	(0.001)
Percent below Poverty Line			0.0035**		0.0037**	0.0037**
			(0.001)		(0.001)	(0.001)
Constant	0.9393***	1.2137***	1.1846***			
	(0.240)	(0.243)	(0.360)			
County Fixed Effects	N	N	N	Y	Y	Y
Year Fixed Effects	N	N	N	N	N	Y
Observations	1249	1249	1249	1249	1249	1249
R-squared	0.178	0.242	0.256	0.26	0.271	0.261

Robust standard errors in parentheses
*** p<0.01 ** p<0.05 * p<0.10