Photo: Drs Producoes/iStock

Regional Spotlight

Making Ends Meet

How does the local cost of living affect a household's standard of living?

Adam Scavette
Regional Economist
FEDERAL RESERVE BANK OF RICHMOND

The views expressed in this article are not necessarily those of the Federal Reserve.

Over the past 20 years, the San Francisco Bay Area has become as notorious for its high cost of living as for its technology companies. For the fiscal year (FY) 2020, the U.S. Department of Housing and Urban Development placed its low-income limit for a one-person family in the Bay Area at $97,600 annually[1] and $139,400 for a family of four.[2] In a September 2021 survey of San Francisco Bay Area residents,[3] 56 percent of respondents stated that they were likely to leave the region "in the next few years," with most respondents citing the general cost of living as being the top reason for wanting to leave the region. What drives the relatively high cost of living in the Bay Area? And if a tech worker's six-figure salary barely enables survival in the Golden City, then what about the region's hospitality and retail workers?

As explored in an *Economic Insights* article I cowrote in 2017 with Philadelphia

Fed Senior Economic Analyst Elif Sen,[4] the cost of living varies considerably across the nation's metro areas. These differences are driven largely by the prices of housing, food, and transportation. For many workers in many of these metro areas, local wages reflect local differences in the cost of living, but this is less likely to be true for lower-skilled workers. For example, a retail worker in Oakland, CA, is unlikely to make double the wages of their colleagues in Cleveland, even though Oakland's cost of living is more than twice as high as Cleveland's. Since our study, the COVID-19 pandemic and a surge of inflation have created new uncertainties about the cost of living in the U.S., but core considerations remain.

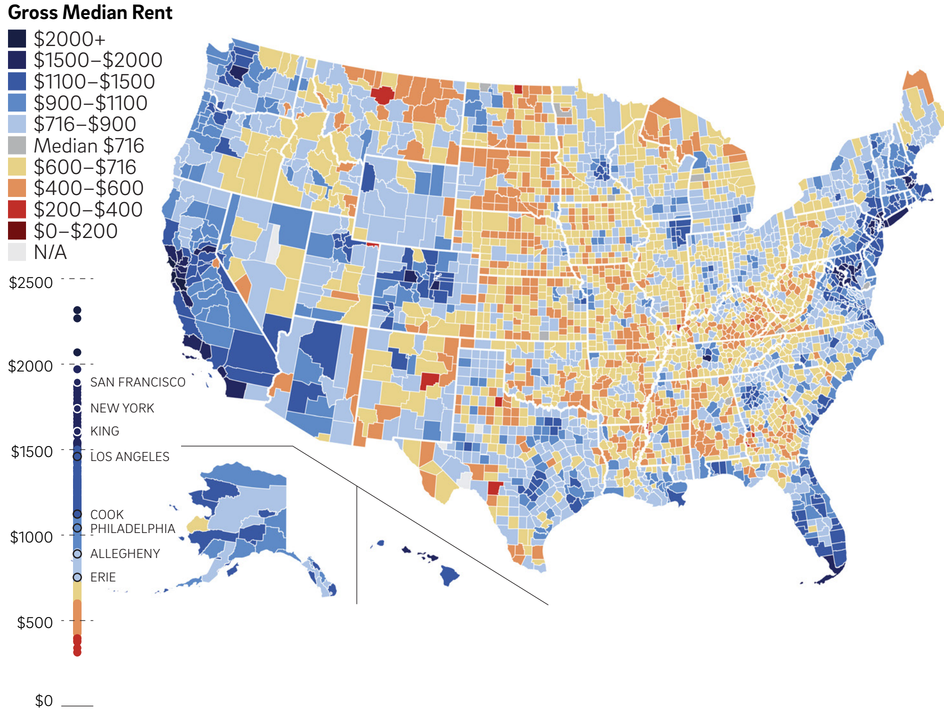
In this article, I explore the variation in the cost of living across metro areas and the implications of this variation for low-income residents. I also explore factors that deter low-income residents from migrating away from high-cost-of-living areas, and public policies that might alleviate the hardships experienced by these residents.

FIGURE 1

Major Metro Areas Are Home to Higher Rents

Variations in rent drive much of the cost-of-living variation across regions.

Five-year average gross median rent across U.S. counties (and county-equivalents), 2019



Source: American Community Survey, U.S. Census.

Housing, Food, and Transportation

Housing tends to be a household's largest single expense, so it is not surprising that it drives much of the cost-of-living variation across regions in the U.S. Counties with higher rents are concentrated in major metropolitan areas such as Chicago, New York, San Francisco, Seattle, and Los Angeles (Figure 1). In 2019, the median gross rent ranged from $313 in Pope County, IL, to $2,316 in San Mateo County, CA, with the median U.S. county renter paying $716 per month.

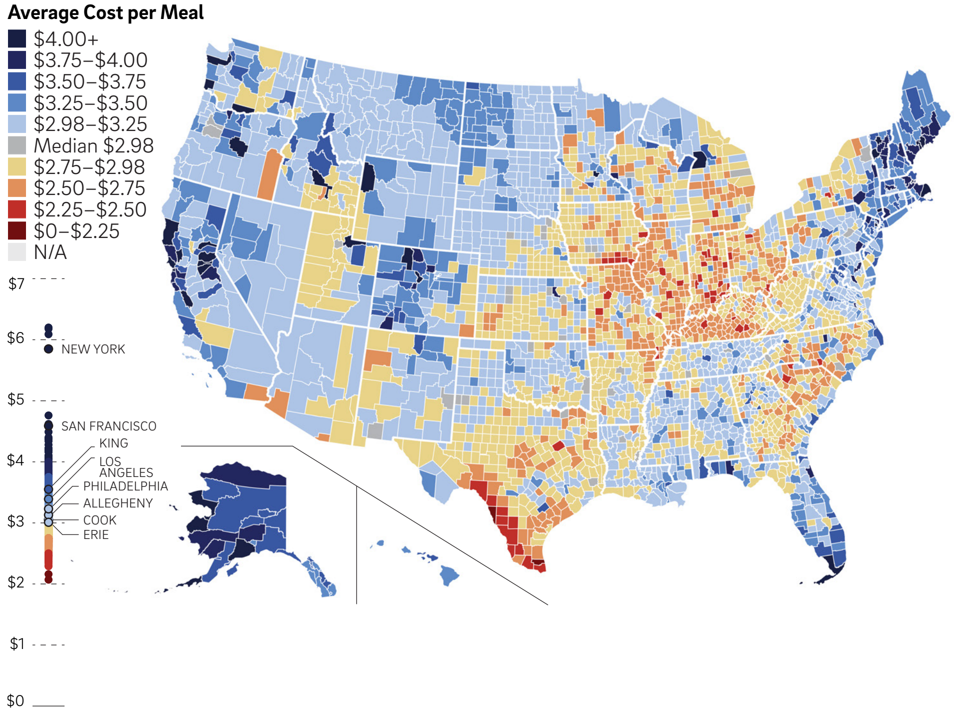
So, what drives these differences in rents across regions? The price of housing in a region is driven by supply and demand. In addition to the quality of the local housing stock, demand-side factors include the availability of jobs (along with their prevailing wages) and various amenities. These amenities include consumer goods (for example, restaurants and theaters), aesthetics (good weather, beaches, and parks), and public services (low crime and good schools).[5] People value these amenities and are willing to pay for them. For example, Harvard

FIGURE 2

Food Prices Vary Across Regions

Prices differ due to varied wholesale costs, labor costs, and rent overhead.

Average cost per meal across U.S. counties (and county-equivalents), 2019



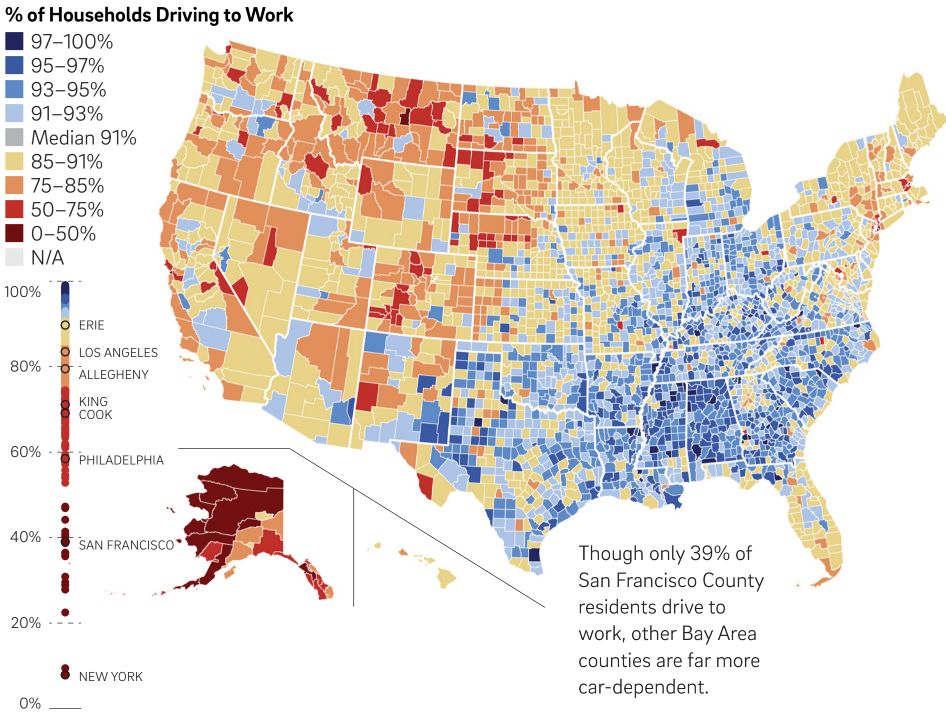
Source: Feeding America.

FIGURE 3

Car Ownership Drives Transportation Costs

The availability of public transit lowers transportation costs in relatively few places.

Five-year estimate of the percentage of the residential population that drives to work across U.S. counties (and county-equivalents), 2019



Source: American Community Survey, U.S. Census.

Professor of Economics Edward Glaeser, Indeed Chief Economist Jed Kolko, and MIT Professor of Urban Economics Albert Saiz found in a 2001 study that weather is the single most important determinant of housing price growth at the county level in the U.S.[6]

Supply-side factors include the local costs of housing construction[7] and the effect of zoning restrictions.[8] These restrictions include height limits and single-family zoning, both of which restrict the construction of apartments, condominiums, and other multifamily buildings. University of Pennsylvania Professor of Real Estate Joseph Gyourko and U.S. Federal Reserve Board economist Jacob Krimmel find that the regulatory strictness of residential construction drives the high price of housing in major West Coast metros such as San Francisco, Seattle, and Los Angeles.[9] In other words, the costliest areas to reside in are the ones that are most desirable to consumers but, due to construction costs, zoning regulations, or physical restrictions, too expensive or difficult to build in.

The price of food also varies across regions of the U.S. When the nonprofit Feeding America calculated the average dollar amount necessary to supply an adequate and nutritious 21-meal diet per week for one adult based on local food prices, it found that, in 2019, the average cost per meal ranged from $2.07 in Willacy County, TX, to $6.20 in Crook County, OR, with residents of the median U.S. county spending $2.98 per meal (Figure 2).

Retail food prices are driven by wholesale costs, labor costs, and rent overhead as well as the price markup of local retailers.[10] Wholesale costs are highest in remote areas such as Alaska and Hawaii, where food must travel many miles to reach communities. Labor costs and rent overhead are determined by prevailing wages for retail jobs and local commercial rents, respectively. The interaction of these factors explains why the cost of food is relatively low in agriculturally active areas of Texas, Indiana, and Iowa, but relatively high in major metro areas (such as San Francisco and New York City) and remote counties of Alaska, Maine, and Vermont.

Transportation is the third major household expense that varies across U.S. regions. Although there is regional variation in the availability of public transit and in the retail prices of gasoline, automotive insurance, and automobiles, the largest driver of transportation costs is car ownership itself. In 2019, the percentage of residents that drove to work ranged from 8 percent of New York County, NY, to 99 percent of Treutlen County, GA, with 91 percent of the residents of the median U.S. county driving to work (Figure 3).

Access to reliable and comprehensive public transportation can make automobile ownership unnecessary. While the cost of a monthly pass for transportation access in a major metro area rarely exceeds $100,[11] the average monthly cost of owning an automobile is estimated at $713 nationally.[12]

A Minimum Household Budget

The variation in cost-of-living factors across regions in the U.S. has particular significance for low-income workers. These workers often have limited savings and sometimes struggle to pay for household necessities.

The federal poverty level is an income threshold generated by the U.S. Department of Health and Human Services that determines whether an individual or family qualifies for various government assistance programs. However, this measure is often inadequate for capturing regional differences in the cost of living and for the various necessities of modern living (such as child care, a cellular phone, and broadband internet).

By adjusting for the local prices of cost-of-living factors, the United Way calculates what it calls the household survival budget—the monthly income necessary for a household to purchase its basic necessities.[13] People earning above the federal poverty level but below their area's respective household survival budget are identified as ALICE: asset-limited, income-constrained, and employed.

The United Way's household survival budget offers a comprehensive cost breakdown of necessities for a modern household based on family size and local prices. How does this budget vary across the counties that contain three of Pennsylvania's largest cities: Philadelphia, Allegheny (Pittsburgh), and Erie?

For Philadelphia County, the monthly household survival budget is $1,984 for a one-person family and $6,012 for a four-person family. In Allegheny County, the annual household survival budget is $2,321 (17 percent higher than Philadelphia) and $6,560 (9 percent higher than Philadelphia), respectively. In Erie County, the annual household survival budget is $1,877 (5 percent lower than Philadelphia) and $5,613 (7 percent lower than Philadelphia), respectively (Figure 4).[14]

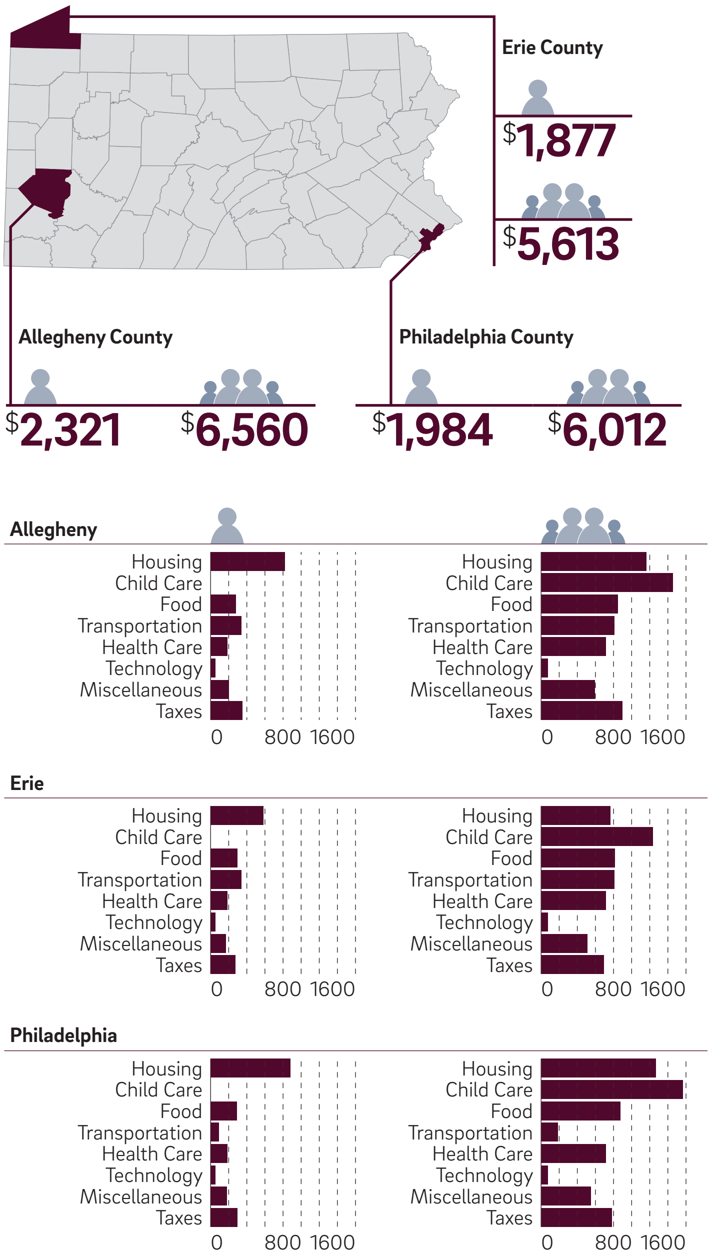
These cost breakdowns indicate that transportation accounts for the largest difference between Philadelphia's and Allegheny's monthly household survival budgets for a four-person family. A Philadelphia family pays $187 for transportation, whereas an Allegheny family pays $808 (332 percent higher than Philadelphia). Philadelphia's more extensive public transportation network likely explains the transportation cost difference between the two counties. The same difference in the cost of transportation applies when comparing Philadelphia to Erie. However, housing and child care are respectively 40 percent and 21 percent lower in Erie compared to Philadelphia, and these two expenses drive the overall affordability of the former.

FIGURE 4

Public Transit Helps Make Philadelphia More Affordable

Whereas cheaper housing and child care benefit families in other counties.

Monthly household survival budgets for three Pennsylvania counties (Philadelphia, Allegheny, and Erie), 2020.



Source: United For ALICE—ALICE Household Survival Budgets, Pennsylvania, 2018.

Note: This figure plots the breakdown of factors necessary for both a one-adult household and a four-person family consisting of two adults and two children in child care.

The Impact of Cost-of-Living Variation

Stanford Professor of Economics Rebecca Diamond and University of California, Berkeley, Professor of Economics Enrico Moretti explore the relationship between the local cost of living and the standard of living, which they define as the amount of market-based consumption that residents can afford.[15] They find that when families can stretch their dollar further in a lower-cost-of-living area, they are able to spend beyond necessities such as rent, food, and transportation, and they thus enjoy a higher standard of living. By exploring the spending behavior of households across different income groups,[16] the authors find that households face vastly different standards of living based on their location within the U.S.[17]

Diamond and Moretti analyzed the relationship between the local price index and market consumption for both high-income households and low-income households (Figures 5a and 5b). They found that a high-income household that moves from San Francisco, which is a high-cost-of-living area, to Cleveland, a medium-cost-of-living area, would see its consumption increase by 33 percent. However, a low-income household making that same move would see its consumption increase by 41 percent. Furthermore, a low-income household that moves from San Francisco to Johnstown, PA, a low-cost-of-living area, would see its consumption increase by 73 percent.

Diamond and Moretti also analyzed the relationship based on level of education rather than income, since household income, more so than education, is in part a function of location. They found that college graduates who live in high-cost-of-living cities experience the same standard of living on average as college graduates living in lower-cost-of-living cities. In competition for a limited pool of talent, employers compensate highly educated individuals who take jobs located in high-cost-of-living areas. In other words, the average tech worker in Cleveland enjoys the same standard of living as their counterpart in San Jose, CA, because compensation for high-skilled employees in expensive cities generally offsets the area's higher cost of living.[18]

However, this is not the case for less-educated workers. A high-school graduate who moves from Cleveland to San Jose would experience an 8 percent decline in their standard of living. Therefore, a retail worker in San Jose would likely be worse off than their counterpart in Cleveland since competition for lower-skilled workers does not typically result in the same wage premium. Nevertheless, because Diamond and Moretti's definition of standard of living does not capture the value of nonmarket amenities such as weather, many retail workers might be willing to forgo the higher market-based consumption to stay in California and avoid Cleveland's winters.

Why Don't Low-Income Households Move?

If low-income households experience a lower standard of living in expensive areas, then why don't they move to more affordable areas? In fact, many of them do, for precisely that reason. As University of Chicago Professor of Public Policy Peter Ganong and Harvard Kennedy School Associate Professor of Public Policy Daniel Shoag noted in 2017, the disproportionate increase in housing prices in high-income cities over the past 30 years has led to "skill sorting," where high-skilled workers move to high-income cities and low-skilled workers leave.[19]

However, there are several reasons why many low-income households do not leave expensive cities. For one, moving from one region to another is expensive and disruptive, particularly for resource-constrained families. Additionally, many people value their existing hometown for its social ties or the amenities it offers. Philadelphia Fed Senior Economist Kyle Mangum suggests that, on average, most Americans demonstrate a strong attachment to home because of the utility of these social ties.[20] The presence of an existing family and social support network often results in monetary benefits for low-income families, such as informal child care and emergency financial support. Lastly, the presence of robust transportation systems[21] and greater access to social services[22] in expensive urban areas such as San Francisco, New York, and Chicago might explain why many low-income households decide to stay put.

Implications for Public Policy

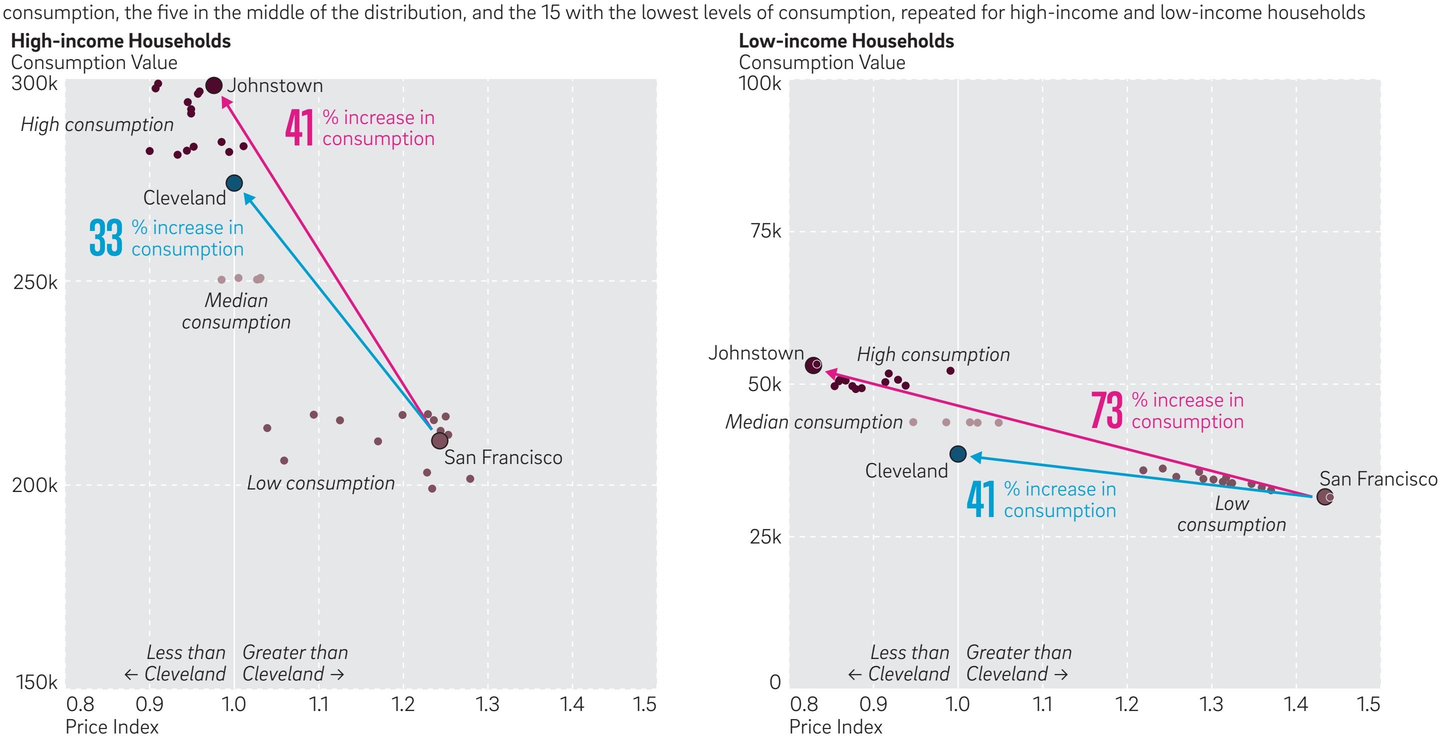
Because the cost of housing imposes the largest hurdle to the financial survival of low-income families in expensive areas,[23] a simple solution would be zoning to encourage the building of denser multifamily housing.[24] However, such reforms are often

FIGURE 5

Households Face Different Standards of Living in Different Regions

Low-income households benefit more from a move to a lower-cost-of-living region.

The X axis represents the cost of living for a particular urban area, assuming that the household buys the same bundle of goods in each area; the Y axis represents consumption, or how much that household would spend if they moved to the median-cost region; the boxes represent the 15 urban areas with the highest levels of consumption, the five in the middle of the distribution, and the 15 with the lowest levels of consumption, repeated for high-income and low-income households



Source: Table 2 of Diamond and Moretti (2021).

Notes: The price indexes (high-income and low-income) for Cleveland, OH, the median-cost region, are by construction equal to 1. The indexes from other regions are to be interpreted as relative to Cleveland. Consumption is measured by how much a household would need to spend in Cleveland to live the same quality of life they are living in their home region.

more easily said than done. Existing residents often have an active political interest in retaining single-family zoning and discouraging denser development. (This phenomenon is sometimes referred to as NIMBY-ism for "not in my backyard.")

In a 2012 book, Moretti suggested that relocation subsidies for low-skilled unemployed workers would allow them to move to cities with better job opportunities, thus reducing unemployment.[25] This policy could help families move and, in doing so, survive economic hardship. Furthermore, this type of relocation policy might be augmented to include underemployed or low-income workers who desire to relocate to lower-cost-of-living areas.

Final Thoughts

Throughout much of the 20th century, expensive cities offered the American Dream to many low-skilled workers and their families. Ganong and Shoag explain that in 1960, both lawyers and janitors could see a material improvement in their standard of living by moving from a state in the Deep South[26] to the tristate New York area,[27] but 50 years later a janitor would be better off staying in the Deep South due to the high cost of housing in New York.

Policymakers should consider how these differences in the cost of living affect the welfare of households across the income and skill spectrums. While efforts at the local level to improve the affordability of housing might offer the most relief, national policy also has a role. For example, monitoring whether inflation has a disproportionate impact on low-income households might better inform how monetary policy should be conducted.[28]

Notes

1 See U.S. Department of Housing and Urban Development (2021).

2 For reference, the respective FY 2020 low-income limits for the Philadelphia MSA were $54,150 for a one-person family and $77,300 for a four-person family.

3 See Joint Venture Silicon Valley (2021).

4 See Sen and Scavette (2017).

5 See Bartik and Smith (1987).

6 See Glaeser, Kolko, and Saiz (2001).

7 See Gyourko and Saiz (2004).

8 See Glaeser and Gyourko (2002).

9 See Gyourko and Krimmel (2021).

10 See Handbury and Weinstein (2015).

11 See Ross (2021).

12 See AAA Automotive (2020).

13 See United for ALICE Research Center (2020).

14 The statistics for the monthly household survival budget estimates are highly conservative and do not control for various factors such as neighborhood quality or housing quality. The United Way suggests that the budget is neither sustainable over time nor meant to be a recommended budget.

15 See Diamond and Moretti (2021). Their definition of standard of living as market-based consumption does not include differences in nonmarket amenities such as weather.

16 The authors classify households into three income groups (based on unadjusted income): low, $10,000–$50,000; middle, $50,000–$200,000; and high, greater than $200,000.

17 Diamond and Moretti use commuting zones as their geographic unit of analysis.

18 Furthermore, high-income households may experience higher utility per dollar spent in expensive cities, because the latter offer more products and services that cater to high-earning households—think high-end clothing, gourmet foods, and salon-spa experiences. See Handbury (2021).

19 See Ganong and Shoag (2017).

20 See Mangum (2020).

21 See Glaeser, Kahn, and Rappaport (2008).

22 See Allard (2004).

23 See Menendian et al. (2020).

24 See Schuetz (2009).

25 See Moretti (2012).

26 Alabama, Arkansas, Georgia, Mississippi, and South Carolina

27 New York, New Jersey, and Connecticut

28 See Goolsbee (2021).

References

AAA Automotive. "What Does It Cost to Own and Operate a Car?" Accessed June 19, 2022, from https://www.aaa.com/autorepair/articles/what-does-it-cost-to-own-and-operate-a-car.

Allard, Scott. "Access to Social Services: The Changing Urban Geography of Poverty and Service Provision," Brookings Institution, 2004.

Bartik, Timothy, and V. Kerry Smith. "Urban Amenities and Public Policy," in Edwin S. Mills, ed., *Handbook of Regional and Urban Economics*, Volume 2. North-Holland, The Netherlands: Elsevier B.V., 1987, pp. 1207-1254, https://doi.org/10.1016/S1574-0080(87)80017-2.

Diamond, Rebecca, and Enrico Moretti. "Where Is Standard of Living the Highest? Local Prices and the Geography of Consumption," National Bureau of Economic Research Working Paper 29533 (2021), https://doi.org/10.3386/w29533.

Ganong, Peter, and Daniel Shoag. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics*, 102 (2017), pp. 76–90, https://doi.org/10.1016/j.jue.2017.07.002.

Glaeser, Edward, and Joseph Gyourko. "The Impact of Zoning on Housing Affordability," National Bureau of Economic Research Working Paper 8835 (2002), https://doi.org/10.3386/w8835.

Glaeser, Edward, Matthew Kahn, and Jordan Rappaport. "Why Do the Poor Live in Cities? The Role of Public Transportation," *Journal of Urban Economics*, 63:1 (2008), pp. 1–24, https://doi.org/10.1016/j.jue.2006.12.004.

Glaeser, Edward, Jed Kolko, and Albert Saiz. "Consumer City," *Journal of Economic Geography*, 1:1 (2001), pp. 27–50, https://doi.org/10.1093/jeg/1.1.27.

Goolsbee, Austan. "The Missing Data in the Inflation Debate," *New York Times*, December 30, 2021.

Gyourko, Joseph, and Albert Saiz. "Is There a Supply Side to Urban Revival?" Wharton School Working Paper 453 (2004).

Gyourko, Joseph, and Jacob Krimmel. "The Impact of Local Residential Land Use Restrictions on Land Values Across and Within Single Family Housing Markets," National Bureau of Economic Research Working Paper 28993 (2021), https://doi.org/10.3386/w28993.

Handbury, Jessie, and David E. Weinstein. "Goods Prices and Availability in Cities," *Review of Economic Studies*, 82:1 (2015), pp. 258–296, http://dx.doi.org/10.1093/restud/rdu033.

Handbury, Jessie. "Are Poor Cities Cheap for Everyone? Non-Homotheticity and the Cost of Living Across U.S. Cities," *Econometrica*, 89:6 (2021), pp. 2679–2715, https://doi.org/10.3982/ECTA11738.

Joint Venture Silicon Valley. "2021 Silicon Valley Poll" (2021).

Mangum, Kyle. "No More Californias," Federal Reserve Bank of Philadelphia *Economic Insights* (First Quarter 2020), pp. 8–13, https://www.philadelphiafed.org/the-economy/regional-economics/no-more-californias.

Menendian, Stephen, Samir Gambhir, Karina French, and Arthur Gailes. "Single-Family Zoning in the San Francisco Bay Area," Othering & Belonging Institute, University of California, Berkeley (2020).

Moretti, Enrico. *The New Geography of Jobs*. Boston: Houghton Mifflin Harcourt, 2012.

Ross, Katherine. "The Most and Least Affordable Cities for Public Transit," ValuePenguin by Lending Tree (2021).

Sen, Elif, and Adam Scavette. "Regional Spotlight: Purchasing Power Across the U.S.," Federal Reserve Bank of Philadelphia *Economic Insights* (Fourth Quarter 2017), pp. 1–6, https://www.philadelphiafed.org/the-economy/regional-economics/regional-spotlight-purchasing-power-across-the-us.

Schuetz, Jenny. "No Renters in My Suburban Backyard: Land Use Regulation and Rental Housing," *Journal of Policy Analysis and Management*, 28:2 (2009), pp. 296–320, https://doi.org/10.1002/pam.20428.

U.S. Department of Housing and Urban Development. "FY 2022 Income Limits Summary" (2021), https://www.huduser.gov/portal/datasets/il/il2020/2020summary.odn.

United For ALICE. (2020). *ALICE Household Survival Budgets, Pennsylvania,* 2018. Retrieved from https://www.unitedforalice.org/household-budgets/pennsylvania.