Where We Stand (WWS): Review of Data

Purpose: This is a part of a series of working papers that provides documentation on data points used to measure regional success. The papers highlight methodological issues and nuances that affect how the data should be interpreted and used. They are living documents that will build on previous work and provide one location to reference key information about these topics.

Have something to add to the discussion on data for this topic? Please email us at *wws@ewgateway.org*

Topic: Income

Version: Revised November 2024

* This is a living document that will be updated periodically. Check for updates at *www.ewgateway.org/wws*

Data Details

This section provides information about the source, definition, and notes about the source or the specific data that are important to keep in mind when working with this data.

Source Detail

Per Capita Income: See below for a discussion of the differences in the two sources for this variable. EWG research department uses the BEA reported data for the overall per capita income but uses the ACS data for the income by race and ethnicity

> Source A. Bureau of Economic Analysis (CAINC30)

> Source B. U.S. Census Bureau American Community Survey (S0201)

Median Household Income: U.S. Census Bureau, American Community Survey 1-Year Estimates (B19013)

Average Wage per Job: Bureau of Economic Analysis, (CAINC30)

Purchasing Power: Bureau of Economic Analysis, (MARPI)

Income Inequality: U.S. Census Bureau, American Community Survey 1-Year Estimates (B19083)

Income Gap: U.S. Census Bureau, American Community Survey 1-Year Estimates (B19080)

What is being measured?

There are several ways to measure regional income levels. Here, we review six measures. Per capita income and median household income are two of the most commonly used income metrics. Average wage per job and purchasing power offer a different perspective. In addition, two measures of income inequality are provided.

The four methods of estimating the approximate income of populations are all valid and objective measures. They also each have their challenges. The best method to use depends on one's purpose and priority. These methods each allow for a single number to represent what is occurring in a region. This can be useful to track changes over time at a high level. However, they do not provide the detail that is needed to understand the varying levels of income among the people that live in a community. There are about one million to more than 19 million people living in each of the peer regions. This is a lot of opportunity for variety within each region.

Per capita income is the broadest measure of income. It includes income that is earned (proprietors' income, wage and salary, and employer contributions to social insurance), financial income (received from stock dividends and other financial assets, including interest and rent), and income received from transfers (government benefits and Social Security). As measured by the Bureau of Economic Analysis (BEA), per capita income is higher than in other estimates because it includes employer contributions to social insurance and adjustments for homeownership. In recent years, much of the difference in per capita income growth among U.S. regions has been attributable to financial income.[1]

One component of BEA's estimation of per capita income is employer contributions to pension and insurance funds and social insurance funds (a component of earned income), which makes the figure higher than other estimates discussed in this document as well as other estimates of per capita income, such as the estimates reported by the U.S. Census Bureau as part of the American Community Survey (ACS).[2] The per capita incomes reported by BEA are substantially higher than those reported by the ACS. For example, for 2022, BEA reports a U.S. total population per capita income of $65,470. The U.S. Census Bureau reports an income that is 63.9% of this, $41,804.

Further, BEA includes imputed rent, which is essentially the use value of a home that accrues to homeowners. The logic behind the imputation is that BEA considers a house to be a financial asset. An owner can rent the house out for income, or they can allow someone (including themselves) to live in it rent free. If they do this, then whoever lives there rent free is receiving something of value, which BEA considers income. BEA argues that this imputation is necessary to treat rental properties and owner-occupied

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[1] Posey, John, "The Geographic Redistribution of Income in the United States, 1969-2019: The Role of Federal Policy," *Forum for Social Economics*, vol. 51 no. 4, 2022, pp. 361-376.

properties the same way in GDP calculations. It is not possible to disaggregate this component of income at the regional level. Nationally, in 2022, imputed rent constituted 9.3% of total personal income.

Median household income represents what a household at the 50th percentile receives in income, with half of the population receiving more and half receiving less.

Average wage per job measures the income of wage and salary workers. This is the only one of the four income metrics that estimates income by place of work. The other three are by place of residence.

Median household income includes self-reported financial and transfer income.

A**verage wage per job** excludes all types of income except wages and salaries. Like per capita income, these measures do not adjust for costs of living.

Purchasing power attempts to adjust the per capita income estimates for cost-of-living differences among regions. However, this is a highly modeled exercise that makes many assumptions about the baskets of goods desired by consumers in different regions.

Another challenge is that it is difficult to compare costs of individual items without factoring in other elements. As noted by a report by the Federal Reserve Bank of Philadelphia,

> But while regional price parities capture an area's market costs to consumers, they do not account for certain costs and benefits that are hard to quantify but also valuable to consider, such as the quality of the schools, nightlife, or bike lanes. Workers weigh these nonmarket costs and benefits as well when deciding where to live and work. This location decision varies by person, as one individual will value an area's amenities differently than another will. Prices and purchasing power are not the only factors an individual worker considers when deciding where to locate. For example, RPPs may show that it is cheaper for someone working in Philadelphia to live in the Scranton–Wilkes-Barre–Hazleton area, where rents and the prices of goods and services are lower. But how that person values each area's amenities, the cost in time and money of a longer commute, and other factors will determine where that person locates.[3]

Income Inequality: The Gini coefficient (or index) is a commonly used measure of income inequality based on household income data. Scores on the index range from zero, representing a community that has perfectly equal distribution of income across

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[3] Sill, Keith. "The Purchasing Power of Labor: Measuring Wages over Time." *Federal Reserve Bank of Philadelphia Economic Insights*, Fourth Quarter 2017. https://www.philadelphiafed.org/-/media/frbp/assets/economy/articles/economic-insights/2017/q4/rs_purchasing-power.pdf.

the population, to a score of one, which would be perfectly unequal with one person in the community receiving all the income.

Income Gap: Ratio of median household income of those at the 80th percentile on the income distribution to those at the 20th percentile.

Measure of Vitality

This section discusses to what degree the variable is a good indicator of regional success.

What makes these good measures of success?

Overall, all four of the measures of income discussed here are important indicators of how much income is received by households and the amount of wealth in a community. At a regional level, if income is higher, it means there is more money flowing throughout the community. If people earn higher incomes, they can spend money on non-essentials and philanthropy, which can support jobs and community programs. Further, since some taxes depend on income, higher regional income may mean more tax revenues to support government services.

At the household or individual level, income is intertwined with opportunity and the perception of opportunity and well-being. Insufficient income affects an individual's ability to meet basic needs and save for the future. Once basic needs are met, individuals may balance other goals with income maximization.

In addition, each variable has its own qualities that make it a good measure of success.

Per capita income estimates the total amount of money flowing into households and offers a convenient measure of the overall prosperity of a region. Higher per capita income levels indicate the amount of money available in a region to support businesses, fund philanthropy, and provide a tax base for local governments.

Purchasing power adjusts for cost of living in U.S. regions, providing an estimated comparison of how far one's income will go in different regions.

Median household income is not as susceptible to outliers as the other variables and is more representative of an intuitive definition of income because it does not include employer contributions and imputations for rent.

Average wage per job is an estimate of the average amount of income that people earn from employment. It does not include income that is not from employment, such as Social Security or dividends.

The income inequality metrics are good measures of regional success because they can provide another perspective to the often-used metrics of per capita income and median household income. These measures can provide a greater understanding of the range of how people in the community are doing.

The Gini index offers an indication of how much the income in the region is skewed to the highest income earners (based on percentiles).

The income gap measure provides a more intuitive estimate of the difference of incomes of people in the highest fifth of household incomes and the lowest fifth.

What is problematic about these measures or why is it not necessarily a good predictor of success?

Per capita income, median household income, and average wage per job do not take cost of living into account. It may be possible for a household to have a higher standard of living on a lower income by relocating from an area with a high cost of living to one with a low cost of living.

Purchasing power provides a reasonable approximation of differences in cost of living, but it is a highly modeled exercise that relies on many assumptions about typical baskets of goods consumed by households in different regions.

All four of the income measures have challenges in common. They do not provide the detail that is needed to understand the varying levels of income among the people that live in a community. These values can rise if the highest-income households are becoming wealthier, even if those in the middle and bottom are not enjoying higher income levels.

They also assume that higher income is always preferred and do not consider other values or circumstances that may take higher priority. A person may choose a lower income in favor of a more rewarding job, a job closer to home, or one that allows for a better life-work balance.[4] Further, people have different expenses from each other and at different points in their lives. For example, a minimum wage job may be fine for a teenager but may not be sufficient for a person who needs to pay rent, buy groceries, pay for childcare, and pay for car insurance.

The average or median can change due to factors that do not indicate success, such as a reduction in the number of low-wage jobs or out-migration of lower-income families.

In addition, per capita income, average wage per job, and purchasing power can be influenced by a small number of outlier cases. A small proportion of the population that earns high incomes can result in an average that does not reflect the lived experience of most of the population.

The Gini index does not have an intuitive meaning while the income gap is limited by the range of incomes. The income gap measure looks only at two points on the income distributions and ignores disparities between the general population and more elite

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[4] Puentes, R., & Warren, D. (2006). *One-fifth of America: A comprehensive guide to America's first suburbs.* Brookings Institution. https://www.brookings.edu/wp-content/uploads/2016/06/200509.pdf

percentiles, such as the top 10% or top 1%. These disparities have been shown to account for rising levels of inequality in the United States in recent years.[5]

Further, a community can score favorably on metrics of income inequality if they have a relatively equal distribution of incomes that are all low. This can also be true if all incomes are high, which can indicate a lack of diversity.

Peer Region Analysis

Summary

Per capita income in the St. Louis region is above the national average and is higher than most of the peer regions. However, much of the region's recent income growth has been concentrated in the upper quartile of the income distribution. The peer regions with the highest incomes tend to have a dominant industry or company, many in technology and finance. Regions with relatively low-income inequality include some with relatively low-income levels as well as some high-growth regions.

Ranking Analysis

Income

Northern coastal regions on both the Atlantic and Pacific consistently rank at the top of all four-income metrics. Two MSAs in the middle of the country, Austin and Denver, also rank in the upper tier on these metrics.

Regions that have relatively high incomes tend to have a driving industry or dominant company; they are often technology and finance hubs.

In the Pacific Northwest, dominant positions in technology and finance have propelled San Francisco, San Jose, and Seattle to the top ranks. The San Jose MSA is virtually synonymous with Silicon Valley and has the densest concentration of technology jobs in the nation. The information and manufacturing industries together contribute nearly half of the wages paid to employees in the region, and computer and other electronic manufacturing makes up more than three quarters of the wages paid in the manufacturing sector. In San Francisco, professional and business services accounts for 31% of regional wages, followed by information at 17% and financial activities at 12%. Manufacturing wages make up 7% of the region's total with manufacture of computer parts accounting for most of this. Seattle, home to both Amazon and Microsoft, is also a technology leader.

New York, Boston, and Washington, D.C. are also leading regions with respect to personal income. Washington, D.C. benefits from its status as the nation's capital and has a disproportionate number of high-paying federal jobs and jobs supported directly or

[5] Alvaredo, F., Atkinson, A. B., Piketty, T., & Saez, E. (2013). The top 1 percent in international and historical perspective. Journal of Economic perspectives, 27(3), 3-20.

indirectly by federal contractors. New York has long been the nation's leading region in financial services. Boston enjoys a competitive edge in both technology and finance.

Austin has become a leading technology hub in recent years. Twenty percent of its wages are derived from computer systems design, information, or computer manufacturing. Denver does not have a dominant industry, but 30% of its wages come from employment in professional and business services.

Regions with relatively high incomes tend to have the following positive attributes: larger proportions of adults with a bachelor's degree as well as with advanced degrees, lower poverty rates, a larger proportion of high-wage jobs, and lower rates of heart disease. However, higher income regions are more likely to have relatively large disparities in income per capita between race and ethnic groups. Regional rankings on income are also associated with relatively higher levels of employment in the STEM field and in retail.

The St. Louis region has relatively high average income levels, particularly when cost of living is considered. However, the region has below average median incomes and a below average wage per job. This suggests that much of the region's prosperity is concentrated in the upper quartile of the income distribution, and that creating a broader base of prosperity remains a challenge for the region.

St. Louis ranked 20th among the peer regions and above the national average on per capita income. Income in the region grew relative to the rest of the country, with per capita income increasing from 2.2% above the national average in 2019 to 6.5% above in 2022. When income is adjusted for cost of living, St. Louis ranks in the upper quarter of the peer regions. St. Louis also increased its advantage over the rest of the country on this measure, referred to as real per capita personal income (RPCI) by BEA and referenced in Where We Stand as "purchasing power." In 2019, the region's RPCI was 7.8% higher than the United States, a premium that grew to 10.4% in 2022.

The region's average wage per job, however, is below that of the country as a whole and ranked 36th out of the peer regions. This means that the region's ranking above the national average on per capita income is attributable to unearned income, which is primarily financial income (dividends, interest, and rent). St. Louis also ranked 35th, below the United States, on median household income. A higher rank on per capita income than median household income suggests that the region's relatively high mean income is attributable mainly to high income levels in higher percentiles of the income distribution. From 2019 to 2022, the top quartile of the region's income distribution increased its share of regional income, while all other quartiles saw decreasing shares.

Sixteen of the peer regions had slower growth than the U.S. in both per capita income and median household income from 2019 to 2023. These included several of the regions commonly referred to as "Rustbelt:" Baltimore, Boston, Chicago, Detroit, Hartford, Philadelphia, and Pittsburgh. However, some Sunbelt regions also had falling income levels relative to the rest of the country, including San Antonio and Houston. In

Kansas City, per capita income fell from 98.2% of the U.S. to 96.9%, while median household income fell from 6.8% above the U.S. to 0.7% above.

Six peer regions had increases in median household income but falling per capita income relative to the rest of the nation. This set was a mix of Rustbelt and Sunbelt: Atlanta, Las Vegas, and Memphis in the South, and Buffalo, Cleveland, and Providence in the North. This pattern may indicate rising income levels for households in the middle of the income distribution, with relatively lower growth for households at the top of the income distribution.

Eight peer regions had increasing per capita income and falling median household income relative to the United States. These included several peer regions in the middle of the country: Cincinnati, Louisville, Milwaukee, Oklahoma City, and St. Louis. In St. Louis, per capita income rose from 102.2% to 106.5% of the national average, while MHI fell from 1.1% higher than the U.S. to 0.3% less. There were also three peer regions on the West Coast in this category: Los Angeles, San Francisco, and Seattle. This pattern may indicate falling relative income levels for households in the middle of the income distribution paired with rising income levels for those at the top.

Twenty peer regions saw increasing per capita income and median household income relative to the United States. These included several regions with per capita income levels that are more than 10% above the national average, such as Austin, Denver, Miami, Nashville, San Diego, and San Jose. Also included in this category are some regions with relatively low-income levels, such as Riverside and Orlando, both of which have per capita income levels that were less than 83% of the national average.

Median Household Income

In dollars, 2022

#	City	Value
1	San Jose	148,900
2	San Francisco	128,151
3	Washington, D.C.	117,432
4	Seattle	106,909
5	Boston	104,299
6	Denver	98,975
7	San Diego	98,928
8	Austin	94,604
9	Raleigh	92,739
10	Salt Lake City	91,891
11	New York	91,562
12	Minneapolis	91,341
13	Baltimore	90,505
14	Portland	89,312
15	Sacramento	89,237
16	Los Angeles	87,743
17	Hartford	85,723
18	Atlanta	84,876
19	Philadelphia	84,123
20	Chicago	82,914
21	Phoenix	82,884
22	Dallas	82,823
23	Riverside	82,803
24	Providence	81,784
25	Richmond	81,388
26	Nashville	80,034
27	Jacksonville	77,583
28	Charlotte	77,154
29	Indianapolis	75,824
30	Columbus	75,777
31	Kansas City	75,280
32	Cincinnati	75,062
33	Houston	74,863
	United States	74,755
34	Virginia Beach	74,556
35	St. Louis	74,531
36	Orlando	71,857
37	Detroit	71,265
38	Milwaukee	70,898
39	Las Vegas	70,797
40	Miami	70,769
41	Pittsburgh	70,607
42	San Antonio	70,538
43	Louisville	69,547
44	Tampa	69,290
45	Buffalo	68,698
46	Birmingham	67,242
47	Oklahoma City	66,301
48	Cleveland	65,198
49	Memphis	64,008
50	New Orleans	61,602

Source: U.S. Census Bureau, American Community Survey 1-Year Estimates (B19013)

Average Wage per Job

In dollars, 2022

#	City	Value
1	San Jose	168,183
2	San Francisco	126,019
3	Seattle	100,479
4	Boston	96,341
5	New York	95,390
6	Washington, D.C.	93,880
7	Denver	83,367
8	Austin	83,175
9	Los Angeles	79,609
10	Chicago	78,869
11	San Diego	78,272
12	Houston	76,685
13	Hartford	76,563
14	Dallas	76,110
15	Baltimore	75,980
16	Atlanta	75,864
17	Portland	75,704
18	Philadelphia	75,493
19	Minneapolis	75,099
20	Charlotte	74,188
21	Sacramento	73,857
22	Raleigh	73,162
23	Miami	73,039
24	Detroit	70,859
	United States	70,282
25	Salt Lake City	70,080
26	Nashville	70,060
27	Phoenix	69,535
28	Pittsburgh	68,715
29	Richmond	68,144
30	Tampa	67,316
31	Cincinnati	67,183
32	Columbus	67,156
33	Cleveland	67,104
34	Jacksonville	67,032
35	Kansas City	66,913
36	St. Louis	66,560
37	Milwaukee	66,016
38	Indianapolis	65,994
39	Birmingham	64,472
40	Providence	63,865
41	Orlando	63,590
42	Memphis	63,339
43	New Orleans	63,290
44	Las Vegas	62,278
45	Louisville	61,935
46	San Antonio	61,370
47	Virginia Beach	61,311
48	Buffalo	60,955
49	Riverside	58,610
50	Oklahoma City	58,532

Source: Bureau of Economic Analysis (CAINC4)

Per Capita Income

In dollars, 2022

#	City	Value
1	San Jose	141,516
2	San Francisco	123,736
3	Boston	94,082
4	Seattle	92,113
5	Denver	84,788
6	New York	84,084
7	Washington, D.C.	83,010
8	Miami	77,732
9	Los Angeles	76,445
10	Minneapolis	75,164
11	Austin	75,119
12	San Diego	74,326
13	Nashville	74,035
14	Philadelphia	73,291
15	Chicago	72,512
16	Baltimore	71,420
17	Raleigh	70,628
18	Dallas	70,493
19	Hartford	69,787
20	St. Louis	69,698
21	Portland	69,435
22	Indianapolis	68,719
23	Houston	68,344
24	Richmond	68,205
25	Milwaukee	68,155
26	Sacramento	66,940
27	Pittsburgh	65,792
	United States	65,470
28	Cincinnati	65,253
29	Charlotte	65,156
30	Salt Lake City	65,085
31	Atlanta	64,107
32	Providence	63,746
33	Kansas City	63,417
34	Cleveland	62,921
35	Jacksonville	62,729
36	Birmingham	62,262
37	Phoenix	61,840
38	New Orleans	61,801
39	Louisville	61,490
40	Detroit	61,322
41	Columbus	61,228
42	Oklahoma City	60,687
43	Tampa	60,091
44	Las Vegas	59,150
45	Virginia Beach	57,873
46	Memphis	56,440
47	Buffalo	56,414
48	San Antonio	55,180
49	Orlando	53,959
50	Riverside	50,407

Source: Bureau of Economic Analysis (CAINC4)

Purchasing Power

Personal income per capita adjusted for regional price levels in constant dollars, 2022

#	City	Value
1	San Jose	106,066
2	San Francisco	90,665
3	Boston	72,595
4	Seattle	70,000
5	Denver	68,202
6	Nashville	66,221
7	Austin	65,662
8	Washington, D.C.	64,419
9	New York	64,252
10	Indianapolis	63,349
11	Minneapolis	63,072
12	Philadelphia	62,880
13	St. Louis	62,283
14	Milwaukee	62,023
15	Raleigh	62,018
16	Pittsburgh	60,556
17	Richmond	60,312
18	Cincinnati	60,302
19	Baltimore	60,234
20	Miami	60,217
21	Houston	59,779
22	Kansas City	59,450
23	Chicago	59,237
24	Birmingham	59,002
25	Dallas	58,823
26	Salt Lake City	58,765
27	Cleveland	58,400
28	Los Angeles	58,384
29	Charlotte	58,093
30	Louisville	57,543
31	Hartford	57,443
32	Oklahoma City	57,388
33	New Orleans	57,016
	United States	56,419
34	Columbus	56,260
35	Atlanta	56,079
36	San Diego	56,070
37	Portland	55,152
38	Detroit	55,104
39	Jacksonville	55,028
40	Memphis	53,086
41	Providence	52,990
42	Las Vegas	52,935
43	Sacramento	52,627
44	Tampa	52,065
45	Buffalo	51,909
46	Phoenix	51,523
47	Virginia Beach	51,034
48	San Antonio	50,120
49	Orlando	46,424
50	Riverside	40,914

Source: Bureau of Economic Analysis (MARPI)

Deeper Dive on Change in Per Capita Income

In recent years, income (on average) in the St. Louis region has increased at one of the highest rates among the peer regions. However, the growth appears to be largely due to increases in financial income, not earned income, indicating that the increased income is more due to retirement income rather than wages. The latter would mean more income for the working population and would likely be better for the long-term health of the region. The increases in other regions that have experienced similar or more growth can be attributed more to earned income than in St. Louis.

Figures 1 and 2 provide the details of these changes. From 2019 to 2022, St. Louis ranked 6th on change in per capita income. Figure 1 shows per capita income for each of the peer regions, expressed as a percentage of U.S. per capita income, for the years 2019 and 2022. The tip of each arrow (diamond shape) reflects the 2022 value. The length and direction of the arrow shows how each region fared relative to the nation. In St. Louis, per capita income was 2.2% higher than the United States in 2019, a premium that grew to 6.5% in 2022. Only San Jose, San Francisco, Denver, Miami, and Salt Lake City had faster rates of growth in per capita income.

The Bureau of Economic Analysis divides personal income into three broad categories: earnings, transfer income such as government assistance, and financial income (dividends, interest, rent). Figure 2 takes a closer look at the six fastest-growing regions, breaking down growth of income relative to the United States by these income categories.

- In San Jose and Denver, most of the growth relative to the nation is attributable to earned income.
- In San Francisco, Miami, and Salt Lake City, earnings accounted for less than half of relative growth, with transfers and financial income accounting for the remainder.
- St. Louis was a unique case in that most (about 95%) of its income growth, relative to the nation is attributable to financial income.

St. Louis has a relatively older population than the other regions discussed here, indicating it may be that the rapid increase in income in the region can be attributed to an aging population that is relying on retirement income. Although the growth in per capita income is a positive trend, a closer look suggests that the region needs a continued effort to create and retain high-wage jobs.

In 2019, financial income per capita was 11% higher than the U.S., and the premium climbed to 32% higher in 2022. The region's share of earned income and financial income changed little in the four-year period.

Figure 1: Regional per Capita Income Divided by U.S. Per Capita Income

Peer regions, 2019 and 2022
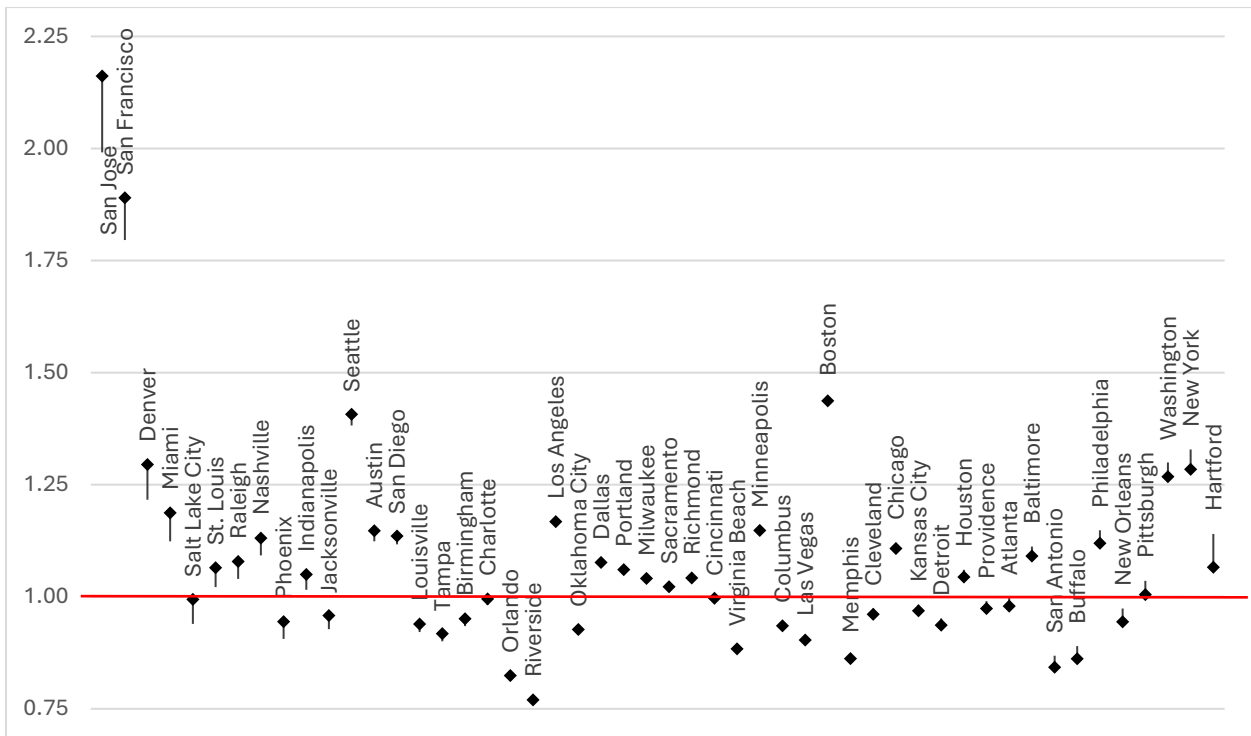
Source: Bureau of Economic Analysis, Table CAINC1

Figure 2: Decomposition of Per Capita Income Growth Relative to United States
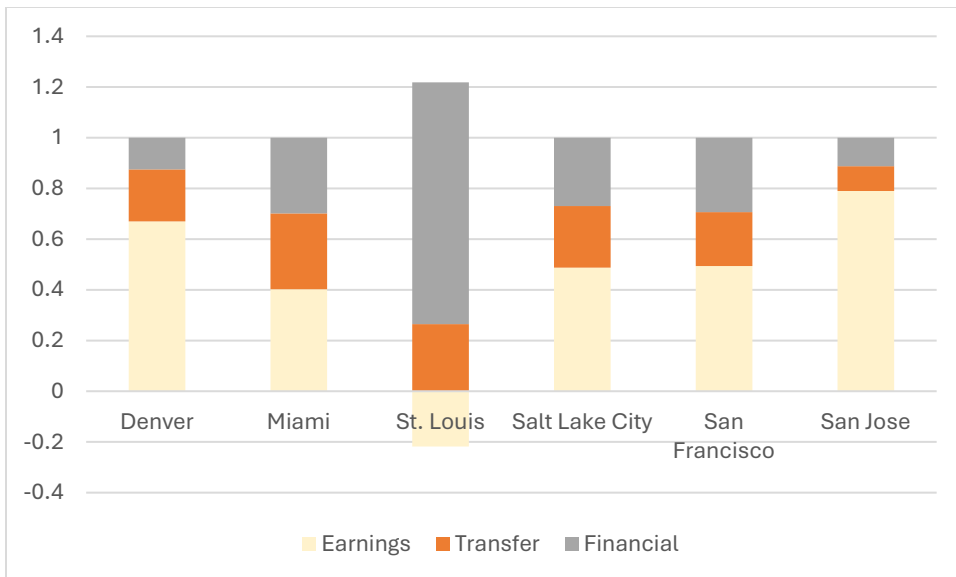
Source: Bureau of Economic Analysis, Table CAINC30

Income Inequality

The income gap examines only two points on the income distribution, while the Gini coefficient considers the entire income distribution, including the highest-income percentiles. This results in large differences in the rankings with almost one-third (14) of the peer regions differing by 10 or more rankings on the two methods.

- Regions that are more favorable (less unequal) on the Gini index over the income gap measure are Providence, Baltimore, Riverside, San Diego, San Antonio, Buffalo, and Sacramento.
- Regions that are more favorable on the income gap measure than the Gini index are San Jose, Orlando, Charlotte, Louisville, Tampa, Las Vegas, and Austin.

Generally, favorable scores on these measures of inequality are associated with population and employment growth, in-migration, housing starts and developed land per capita. These regions also tend to have less racial segregation and younger populations. While there is a tendency for these regions to have relatively low-income levels (e.g. Riverside and Virginia Beach), some regions, such as Salt Lake City, Raleigh, and Nashville, are regions with high employment growth.

Regions with the highest levels of inequality, based on the Gini Index, can be grouped into three broad categories:

- Sunbelt regions, including Orlando, Houston, Birmingham, Tampa, New Orleans, and Miami.
- Coastal regions with a disproportionate number of very high-income households and usually relatively unaffordable housing, including San Jose, San Francisco, Boston, Los Angeles, and Philadelphia.
- Midwestern industrial regions that have struggled with low or negative population growth, such as Cleveland and Chicago.

Income Inequality

Gini coefficient, 2022

1	New York	0.518
2	Miami	0.515
3	Los Angeles	0.500
4	San Francisco	0.500
5	Boston	0.494
6	New Orleans	0.493
7	Birmingham	0.489
8	Tampa	0.489
9	San Jose	0.487
10	Cleveland	0.486
United States		**0.486**
11	Chicago	0.483
12	Philadelphia	0.483
13	Orlando	0.482
14	Houston	0.482
15	Memphis	0.480
16	Milwaukee	0.478
17	Detroit	0.477
18	Charlotte	0.477
19	Louisville	0.476
20	Seattle	0.474
21	Oklahoma City	0.474
22	Buffalo	0.473
23	Pittsburgh	0.473
24	Hartford	0.472
25	Cincinnati	0.472
26	Las Vegas	0.471
27	St. Louis	0.470
28	Dallas	0.470
29	Indianapolis	0.469
30	Columbus	0.467
31	Baltimore	0.465
32	Kansas City	0.464
33	Providence	0.464
34	Richmond	0.463
35	Austin	0.461
36	Atlanta	0.460
37	Sacramento	0.460
38	San Diego	0.459
39	Portland	0.458
40	San Antonio	0.456
41	Nashville	0.456
42	Phoenix	0.455
43	Jacksonville	0.453
44	Minneapolis	0.452
45	Denver	0.450
46	Virginia Beach	0.449
47	Washington, D.C.	0.448
48	Raleigh	0.445
49	Riverside	0.437
50	Salt Lake City	0.426

Source: U.S. Census Bureau, American Community Survey 1-Year Estimates (B19083)

Income Gap

Ratio of income of those at the 80th percentile on the income distribution to those at the 20th percentile, 2022

1	New York	6.11
2	New Orleans	5.58
3	Los Angeles	5.46
4	Boston	5.40
5	Philadelphia	5.33
6	San Francisco	5.31
7	Miami	5.29
8	Birmingham	5.20
9	Cleveland	5.12
10	Buffalo	5.12
11	Baltimore	5.09
12	Providence	5.05
13	Detroit	5.04
14	Memphis	4.95
15	Hartford	4.93
16	Houston	4.92
17	Chicago	4.92
United States		**4.92**
18	Pittsburgh	4.88
19	Milwaukee	4.84
20	Tampa	4.78
21	Oklahoma City	4.77
22	Cincinnati	4.72
23	San Diego	4.67
24	Seattle	4.66
25	St. Louis	4.63
26	Sacramento	4.62
27	Richmond	4.56
28	San Antonio	4.56
29	Indianapolis	4.52
30	Dallas	4.50
31	Columbus	4.49
32	Charlotte	4.43
33	Louisville	4.43
34	Riverside	4.42
35	Kansas City	4.41
36	Orlando	4.40
37	Las Vegas	4.38
38	Portland	4.36
39	Virginia Beach	4.36
40	Washington, D.C.	4.35
41	Denver	4.32
42	Atlanta	4.29
43	San Jose	4.29
44	Raleigh	4.26
45	Austin	4.25
46	Jacksonville	4.23
47	Minneapolis	4.22
48	Phoenix	4.08
49	Nashville	4.07
50	Salt Lake City	3.81

Source: U.S. Census Bureau, American Community Survey 1-Year Estimates (B19080)

St. Louis is about in the middle on both measures of income inequality and less unequal than the nation. However, from 2019 to 2022, the top quartile of the region's income distribution increased its share of regional income, while all other quartiles saw decreasing shares.

Correlation Analysis

Income

Analysis of relationships with more than 200 variables tracked by Where We Stand indicate the four income vitality metrics are strongly correlated with each other. There are moderately strong to strong relationships with other variables as well. Regions with higher income levels tend to also rank favorably on adults with bachelor's degrees, adults with advanced degrees, poverty, high-wage jobs, and heart disease. Regional rankings on income are also positively associated with STEM employment and retail employment. However, higher income regions are also more likely to have larger disparities in income per capita between racial and ethnic groups.

Income Variable Relationships
Not surprisingly, the four income variables tend to have strong relationships with each other. The below table shows the relationships among the income variables using the Spearman method, which identifies relationships based on the rankings on the peer regions. The highlighted cells are those with correlation values of 0.7 or more, indicating a strong relationship between two variables. Per capita income has a strong positive correlation with the other three vital income variables, ranging from +0.87 with average wage per job to +0.76 with median household income. Purchasing power has the fewest correlations with the other income variables, only having a strong positive correlation with per capita income, +0.84, which is used to calculate purchasing power.

Income Vital Statistics Correlation Matrix

Spearman correlations, highlighted correlation are of greater or equal value to a 0.7 absolute value.

	Average Wage per Job_2022	Median Household Income_2022	Per Capita Income_2022	Purchasing Power_2022
Average Wage per Job_2022	1			
Median Household Income_2022	0.81	1		
Per Capita Income_2022	0.87	0.76	1	
Purchasing Power_2022	0.62	0.50	0.84	1

Relationship with Other Variables
The below table shows correlations between Where We Stand variables and each of the income variables. The analysis uses Spearman correlations, which identifies relationships based on the rankings of the peer regions. The table includes variables

with a correlation strength of 0.6 or higher, with highlighted cells indicating other vital statistics and shaded cells indicating negative correlations.

All four income variables have strong positive relationships with indicators of healthy economies, including GDP per capita, proportion of high-wage jobs, and average earnings per job. They also generally have strong negative correlations with indicators of poor economic health, including poverty rate (a vitality metric), the proportion of low-wage jobs, the proportion of the population that is low-income, and the proportion of children in poverty.

Strong positive correlations are present among the income variables and with the proportion of adults with advanced degrees and the proportion of adults with a bachelor's degree or higher (a vitality metric) STEM employment, and the information sector.

There are negative relationships between regional ranks on the income variables and ranks on variables that measure poor economic outcomes. These include the proportion of low-wage jobs, proportion of retail employment, proportion of the population that is considered low-income, prevalence of heart disease, and prevalence of single-parent families.

Only measures of racial differences in per capita income have a moderately strong relationship with any of the income variables. All four income variables have a moderately strong negative correlation with the difference in per capita income between Hispanic or Latino and White (not Hispanic or Latino) populations and all except purchasing power have a moderately strong positive relationship with the difference between the White and Black per capita income levels. Therefore, communities with higher average incomes tend to have larger gaps between the income of the White population and both Black and Hispanic populations.

Income Inequality

Income Gap: Correlations with other variables suggest that a region's rank on income gap is negatively associated with its rank on indicators of growth and development. It has moderately strong to strong relationships with direct measures including housing starts (rho = -0.73), population change from 2010 to 2023 (-0.67), change in developed land per capita (-0.66), in-migration (-0.63), change in employment 2010 to 2023 (-0.6), and change in largest city population (-0.57). Additionally, it has moderately strong to strong relationships to other indicators of poor economic outcomes and aging regions including poverty rate of seniors (rho = +0.67) and people with disabilities (+0.73), no vehicle households (0.65), racial segregation (0.65), seniors (0.60), households without computer (0.58), median age (0.57), and poverty rate (0.54).

Income Inequality: Like income gap, income inequality is largely correlated with variables associated with growth and development, tough to a less and weaker extent.

The only variable with a solidly strong correlation with income inequality is income gap (rho = +0.77). However, it has moderate negative relationships with development indicators such as developed land per capita, proportion of rural land, in-migration, population change from 2010 to 2023, and housing starts. Additionally, income inequality has moderate positive correlations to indicators of an aging and low economic opportunity areas such as the poverty rate for seniors (rho = +0.49) and people with disabilities (+0.57) in poverty, median age (+0.52), racial segregation (+0.51), proportion of seniors (+0.45), and poverty rate (+0.45).

East-West Gateway (EWG) Region Analysis

Income

Among the counties in the East-West Gateway (EWG) region there are large differences on the three variables for which there is local data. See Table 9-02.

- St. Louis County has the highest per capita income, as measured by BEA, which includes more types of income than then other metrics.
- Monroe County and St. Charles County are in a virtual tie for the highest median household income (MHI) in the region. However, Monroe County has the lowest average wages per job by place of employment.
- Jobs in St. Louis County and the city of St. Louis offer the highest average wages in the region. However, the city has the lowest MHI.

Table 9-02. Income Metrics			
East-West Gateway (EWG) region by county, 2022			
County	Per Capita Personal Income ($)	Average Wages per Job ($)	Median Household Income ($)
Madison	55,991	55,231	71,759
Monroe	68,762	45,764	100,685
St. Clair	54,666	58,065	68,915
Franklin	53,957	50,509	70,111
Jefferson	51,143	48,311	77,217
St. Charles	64,563	58,089	99,596
St. Louis	93,405	73,888	78,067
City of St. Louis	55,771	73,073	52,941
EWG Region	62,282	57,866	77,411

Sources: Per Capita Personal Income: Bureau of Economic Analysis (CAINC30);
Average Earnings per Job: Bureau of Economic Analysis (CAINC30); Median
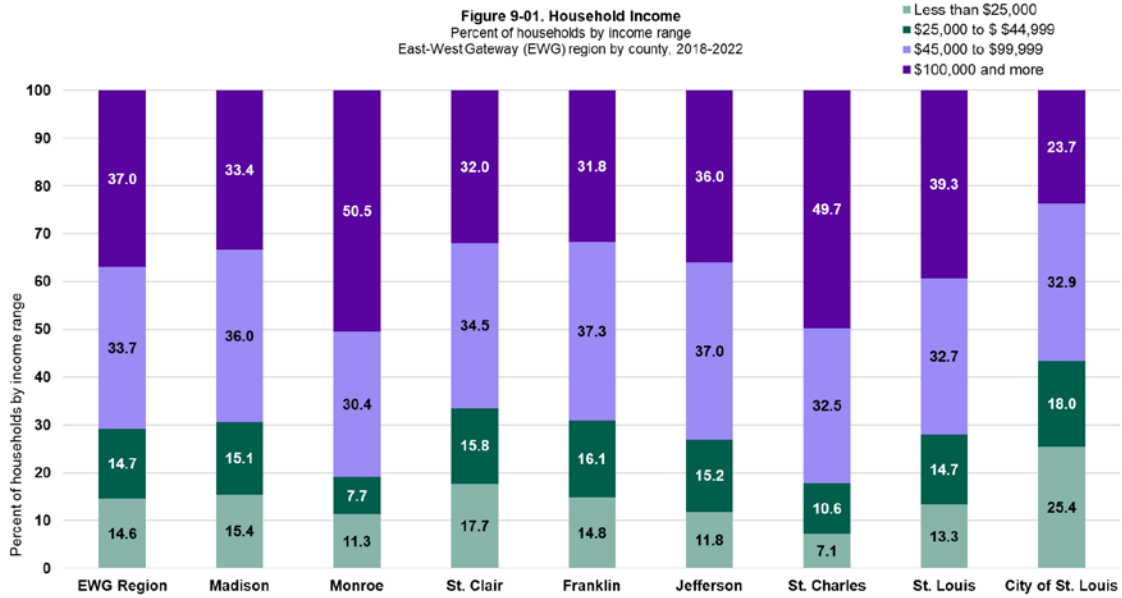Household Income: American Community Survey 5-Year Estimates, 2018-2022
(B19001)

Income Inequality

There is income diversity in every county. In each county, at least 7% of the population receives under $25,000 per year in income, and at least 23% receives over $100,000.
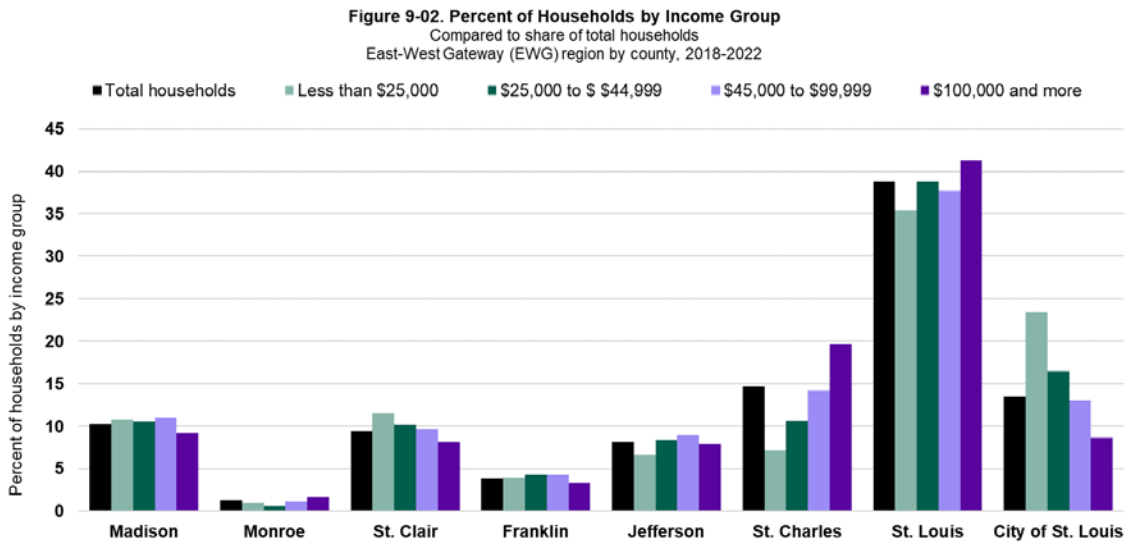
- In St. Charles and Monroe counties, about half of the households receive over $100,000 per year. These counties also have the lowest proportion of households receiving under $25,000 per year.
- The city of St. Louis has the largest share of households in under $25,000 category, and the smallest share in the over $100,000 category. See Figure 9-01.
- The distribution of households at each income range is similar to the distribution of total households across the counties. There are two exceptions. The city of St. Louis has relatively high proportions of those in the lowest income groups and a low share of those in the highest group. St. Charles County has a higher share of residents in the highest income group compared to total households and a relatively low share of low-income households. See figure 9-02.

The map shows the distribution of income within the counties, at the tract level. The lowest median incomes are present in the northern parts of the city of St. Louis and St. Louis County, the western portion of St. Clair County and small spots in Franklin and Jefferson counties. The highest incomes are along the central corridor of St. Louis County and into St. Charles County.
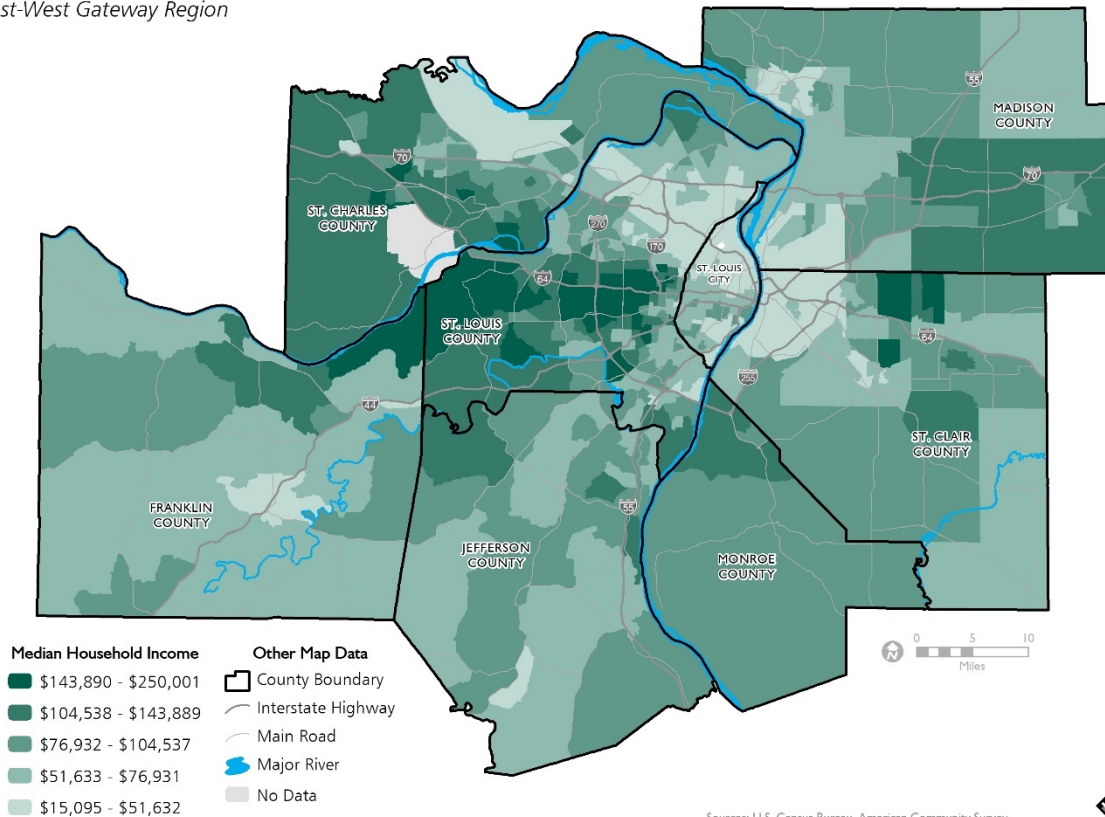

Figure 9-01. Household Income
Percent of households by income range
East-West Gateway (EWG) region by county, 2018-2022

Legend: Less than $25,000 | $25,000 to $ 44,999 | $45,000 to $99,999 | $100,000 and more

Source: American Community Survey 5-Year Estimates (B19001)

Figure 9-02. Percent of Households by Income Group
Compared to share of total households
East-West Gateway (EWG) region by county, 2018-2022

Legend: Total households | Less than $25,000 | $25,000 to $ 44,999 | $45,000 to $99,999 | $100,000 and more

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (B19001)

Median Household Income
East-West Gateway Region

Median Household Income
- $143,890 - $250,001
- $104,538 - $143,889
- $76,932 - $104,537
- $51,633 - $76,931
- $15,095 - $51,632

Other Map Data
- County Boundary
- Interstate Highway
- Main Road
- Major River
- No Data

Sources: U.S. Census Bureau, American Community Survey
5-Year Estimates (B19013), 2018-2022;
East-West Gateway Council of Governments

EAST-WEST GATEWAY
Council of Governments
October 2024

Ideas for Exploration/Next Steps

Case Studies

The following regions are interesting on this variable. They are regions that do not fit the mold or have something else of interest in regard to this variable.

See case studies on Raleigh, Nashville, Riverside, and Austin at www.ewgateway.org/wws.

Research Questions

The following are ideas for further exploration. If you have researched these or other relevant topics or are interested in doing so, please share with us at wws@ewgateay.org.

- Effect of federal spending on regional income.
- Effect of business cycles on regional income

Appendix: Derivation of decomposition used in Figure 2[6]

For metropolitan region M at time t, let Y^M_t represent per capita income divided by US per capita income; let E^M_t represent earned income per capita divided by US per capita income; let W^M_t represent transfer income per capita divided by US per capita income, and let F^M_t represent financial income per capita divided by US per capita income. To refer to per capita income, earned income, transfer income and financial income for the United States rather than for region M, replace the superscript M with the superscript U. Then at time t, the difference between per capita income in region M and per capita income in the US can be decomposed as follows:

$$(Y^M_t - Y^U_t) = (E^M_t - E^U_t) + (W^M_t - W^U_t) + (F^M_t - F^U_t)$$

In the above equation, the first set of parentheses after the equal sign represents the difference in earned income per capita between region M and the US, the second set of parentheses represents the difference in transfer income per capita between M and the US, and the third set of parentheses represents the difference in financial income per capita between M and the US.

The change in per capita income in M relative to the US from time period t to time period t+1 may then be represented as follows:

$$(Y^M_{t+1} - Y^U_{t+1}) = [(E^M_{t+1} - E^U_{t+1}) - (E^M_t - E^U_t)] + [(W^M_{t+1} - W^U_{t+1}) - (W^M_t - W^U_t)] + [(F^M_{t+1} - F^U_{t+1}) - (F^M_t - F^U_t)]$$

In the equation above, the first set of brackets represents the change in M's per capita income relative to the US that is attributable to earned income, the second set of brackets represents the change in M's per capita income that is attributable to transfer income, and the final set of brackets represents the change in M's per capita income that is attributable to financial income.

[6] See Posey, John, "The Geographic Redistribution of Income in the United States, 1969-2019: Examining the Role of Federal Policy," *Forum for Social Economics*, 2022, v. 51 no. 4, pp. 361-376; Posey, John, "Putting Minsky into Space: The Geography of Asset Price Bubbles in the United States, 1994-2018," *Real World Economics Review*, 2021, v. 97, pp. 33-52.