Rethinking Economic Opportunity in the I.E.: Lessons for Local Economic Development Using a Place-of-Work-Based Analysis

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Overview

This report uses place-of-work identifiers in American Community Survey microdata to study the evolution of the Inland Empire (San Bernardino and Riverside County) workforce between 2010 and 2023. During this period, workers in Inland Empire-based jobs diversified significantly, with changes in shares of major racial (African American, Asian/Pacific Islander) and ethnic (Hispanic/Latino) categories. Growth in the region's inflation-adjusted earnings was minimal, and significant income disparities between racial and ethnic groups persist. These disparities can only partially be explained by differences in educational attainment or other individual characteristics. Industrial segmentation along racial and ethnic lines can explain some of the observed economic inequalities.

This report is intended to raise awareness among regional leaders about trends in economic opportunity in the Inland Empire, and to highlight existing workforce inequities that serve as barriers to economic success. The conclusion of the report will provide a concrete set of proposals and criteria that city leaders and other stakeholders can use to advance economic opportunity in the region.

Key Findings

- The report examines economic developments in the Inland Empire as a place of work between 2010 and 2023
- After correcting for inflation, the median income of workers in Inland Empire-based jobs has remained flat
- There have been moderate increases in the percentage of the workforce with a Bachelor's degree, smaller changes in percentage of the workforce with a Master's/Professional degree, and no change in the percentage with a PhD
- To grow its workforce, the region needs to be identified as a place of opportunity, but significant income gaps by race and ethnicity remain
- Part of the gaps can be explained by the low-paying industries that disproportionately employ certain minority groups
- 33% of women in jobs in the Inland Empire work in Trade, Transportation, and Utilities industries
- To expand its workforce and improve job quality, the Inland Empire needs to invest in industries and firms that will promote upward mobility

Introduction and motivation: the future of the Inland Empire

Over the past 10-15 years, hundreds of thousands of low- and middle-income workers have fled California. San Bernardino and Riverside County have shared in these trends: migration inflows into both counties – especially San Bernardino – have slowed, and outflows have accelerated. Other parts of the Western, Southern, and Southeastern U.S. have benefited from workers either fleeing California or locating elsewhere.

The cost of living explains some of California's population problems, and the Inland Empire is not immune to these trends, even with relatively lower home prices and rents than the rest of Southern California. However, migration patterns are sensitive to more than just the cost of living. Jobs and economic opportunity drive migration as well. To develop and remain competitive as a region, the Inland Empire must be seen by workers and businesses as a region of economic opportunity. Opportunity is defined both in terms of economic success (e.g., growth in median income, and in high-paying occupations and industries), and the distribution of that success by gender and race/ethnicity.

Research questions and methodology

This report uses place-of-work identifiers in the American Community Survey (ACS) to study the Inland Empire (San Bernardino and Riverside County) workforce between 2010 and 2023. We seek to answer the following research questions: over the last 10 years, how has the Inland Empire's workforce changed in terms of…

- Demographics (population, race, and ethnicity)?
- Economic outcomes (median income, self-employment, work from home, homeownership) and the distribution of those outcomes between groups?
- Educational attainment?
- Occupation and industry?

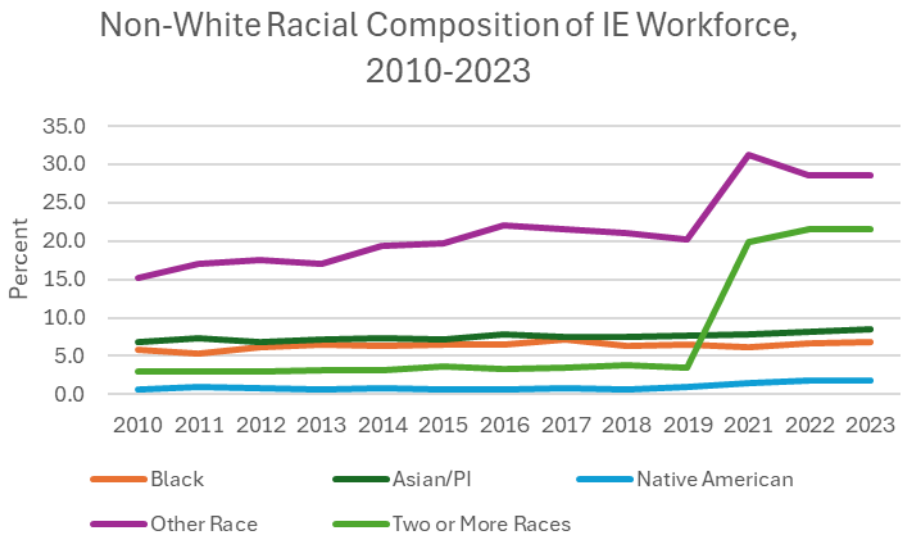
An analysis of the Inland Empire as a *place of work*, rather than *residence*, is a major contribution of this study. The region is home to substantial commuter flows, which can make it hard to detect economic change. Many I.E. residents – especially higher-income workers – do not work in the I.E. As of 2023, about 25% of San Bernardino and Riverside County's labor force worked in Los Angeles, Orange, or San Diego County. Thus, an industry or other economic trend – say, a finding that the region is becoming more educated, or working in higher-paying sectors – may be associated with the Inland Empire's *resident's*, but not with the I.E.'s *jobs*.

There are major policy implications of a place-of-work-based analysis of the Inland Empire. We provide an image of the region's job opportunities, which can inform stakeholders' strategies to attract companies and workers and achieve sustainable development. Stakeholders reading this report may determine which industries it should promote through tax incentives, job training programs, infrastructure improvements, regulatory change, or other initiatives. This report can also inform criteria or diagnostics for economic development. We will discuss this more in a later section, but the report provides reasons for stakeholders to ask a richer set of questions about the

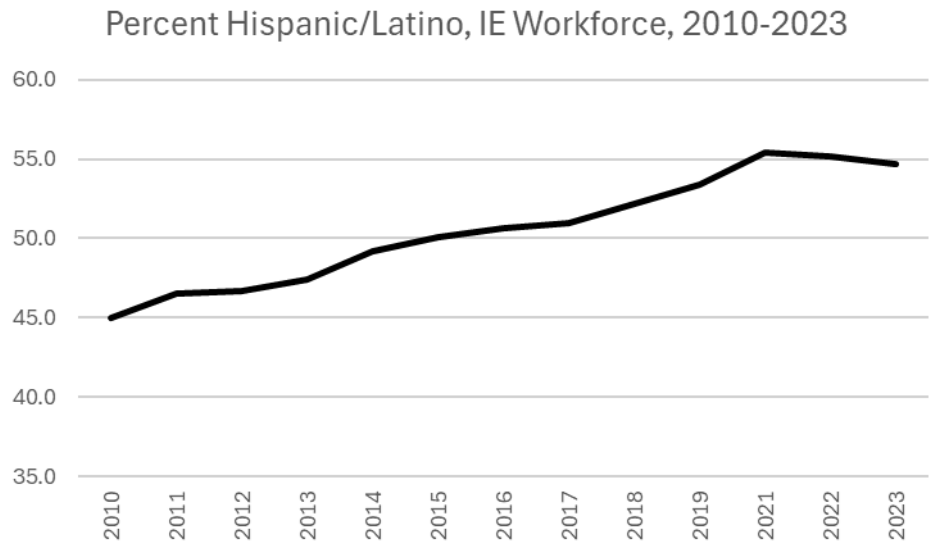
composition of jobs in their community by occupation, spaces, and opportunities for self-employment (i.e., entrepreneurship), and the equitable nature of development projects.

Demographic trends and economic well-being

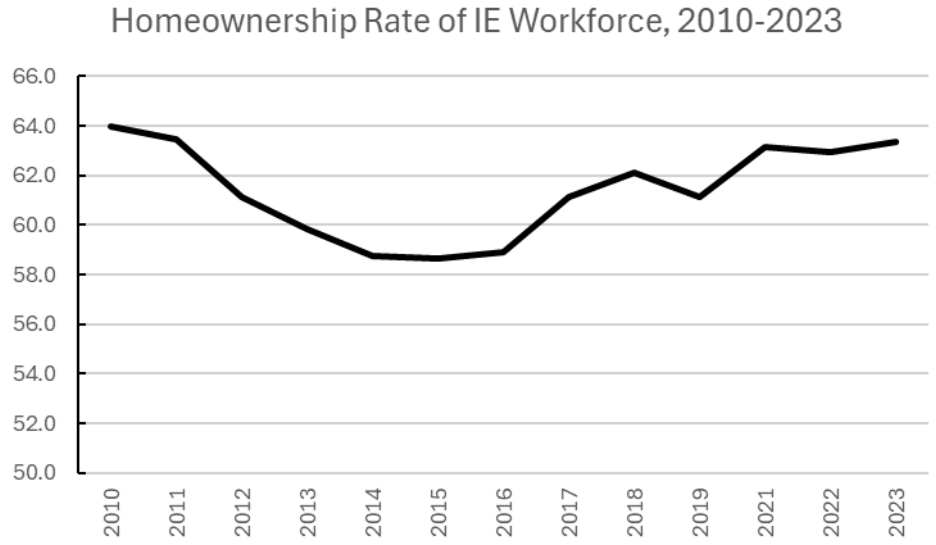
In the last 13 years the Inland Empire's workforce has become substantially more diverse. The most notable change is that it is now majority-Hispanic/Latino (any race), a metric that has risen about 10 percentage points since 2010. The region has also seen smaller increases in the proportions of Black, Native American/Alaskan Native, and Asian/Pacific Islander workers. See the charts below, which refer to the Inland Empire workforce (based on PWPUMA, or "place of work PUMA", codes) and are based on the author's calculations from ACS microdata samples distributed by IPUMS, using sample weights.[1] The sharp increases in "Other Race" and "Two or More Races" percentages in 2021 were due to changes in how the U.S. Census defined racial categories.



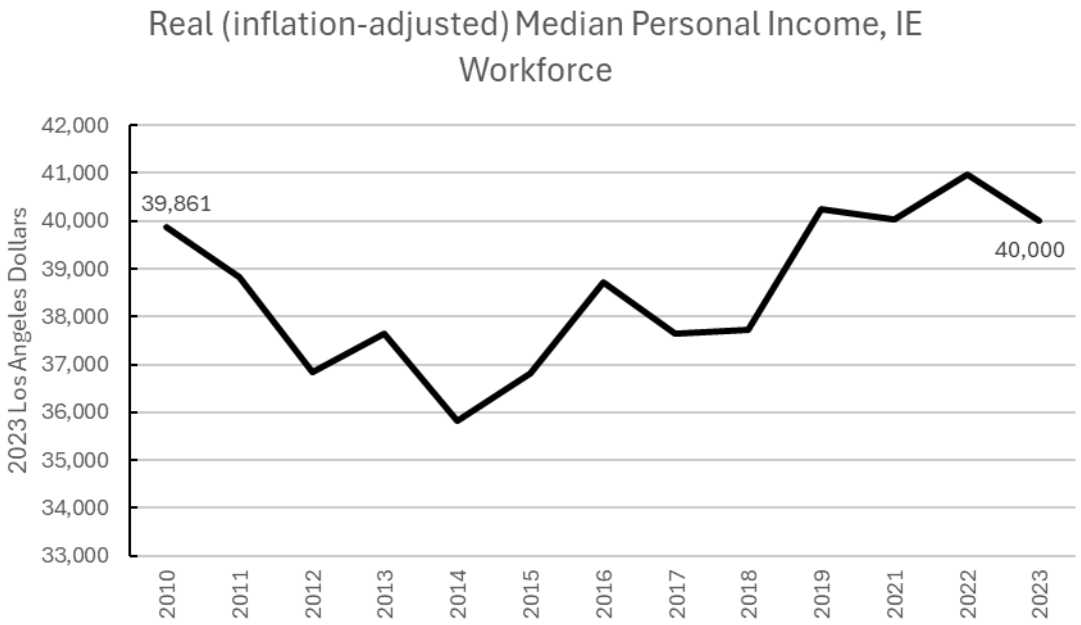
[1] Source for all charts and tables in this report: Steven Ruggles, Sarah Flood, Matthew Sobek, Daniel Backman, Grace Cooper, Julia A. Rivera Drew, Stephanie Richards, Renae Rodgers, Jonathan Schroeder, and Kari C.W. Williams. IPUMS USA: Version 16.0 [dataset]. Minneapolis, MN: IPUMS, 2025. https://doi.org/10.18128/D010.V16.0. Discussion of PWPUMA codes used to identify the Inland Empire workforce is in the Appendix.



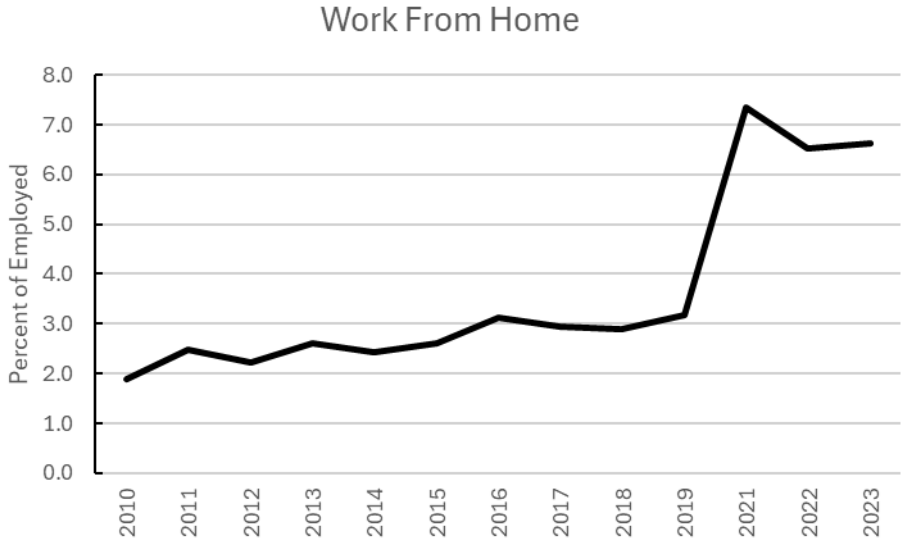
Homeownership rates of the Inland Empire workforce have declined since 2010. After adjusting for inflation, median personal earned income is only slightly above 2010 levels.[2] Thus, the workforce has become more diverse, but less economically secure, than it was 13 years ago. See the charts below.



[2] Median income from 2010, 2011, etc. is inflated to 2023 dollars based on the annual average values of the Consumer Price Index – Urban consumers series for Los Angeles – Long Beach – Anaheim metro area. The Inland Empire currently has its own price index, but it only dates back to December 2019.



Work from home (WFH) provides a measure of the flexibility of the region's employers regarding this important development in the labor market since the pandemic. While research has shown that fully remote work is correlated with lower productivity and worker well-being, some hybrid arrangements have been proven in the literature to increase productivity. The availability of WFH is also important for parents, especially mothers, of small children, who may be more likely to leave the market after having a child, which reduces productivity, future earnings, and promotion opportunities. The availability of WFH arrangements can promote productivity and can keep mothers attached to the labor force. Unfortunately, the WFH indicator present in the ACS does not allow us to distinguish between hybrid and fully remote arrangements.

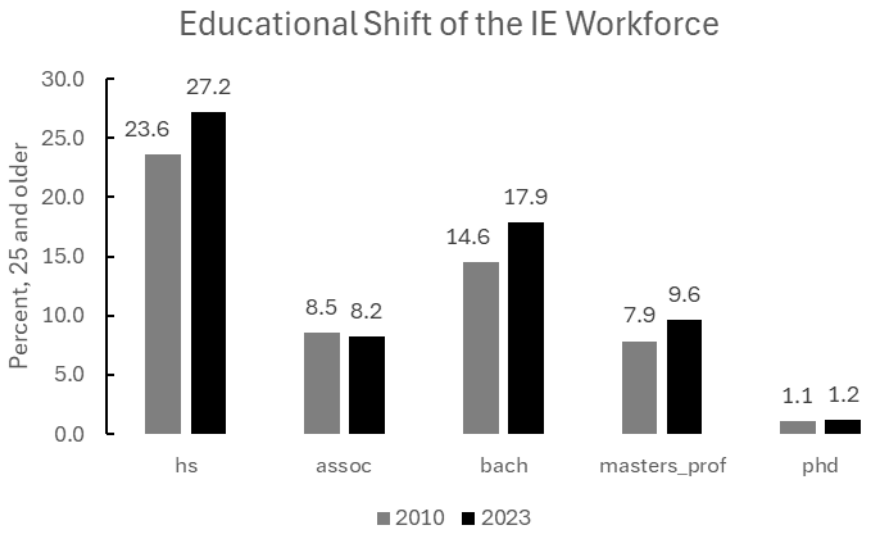


After increasing in 2020 and 2021, WFH rates declined somewhat in 2022 before rebounding in 2023 (margin of error not reported). These WFH rates are smaller than nearby counties, suggesting fewer WFH opportunities in the Inland Empire than in other areas. In the Appendix we show that WFH rates in the Inland Empire are slightly higher for women than men.

Self-employment is a strong indicator of entrepreneurial activity and economic independence. Self-employment rates declined in the 2010s and reached a minimum in 2021; since then, they have increased and were slightly higher in 2023 than they were in 2010. See the chart above.

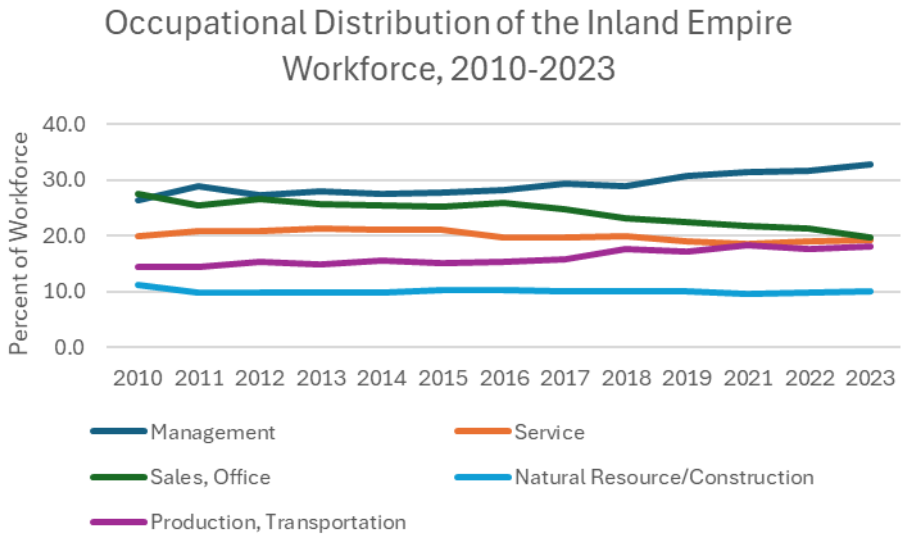
Educational attainment

The region's workforce has expanded across the skill spectrum, with notable percentage-point increases in the proportion of workers both with just a high school degree (+3.6 percentage points) as well as with a bachelor's (+ 3.3 percentage points). Shares have also increased for workers with a master's or other professional degree to a smaller extent (+1.7 p.p.). The percentage of Inland Empire workers with a PhD remained mostly stable, while the percentage of workers with an associate's degree has fallen slightly (-0.3 p.p. change). See the chart below.

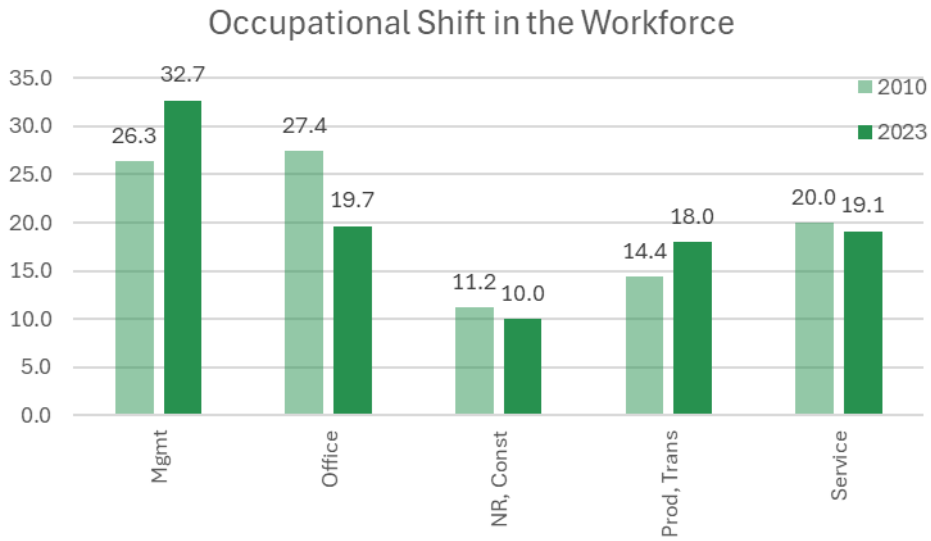


Occupation and industry trends

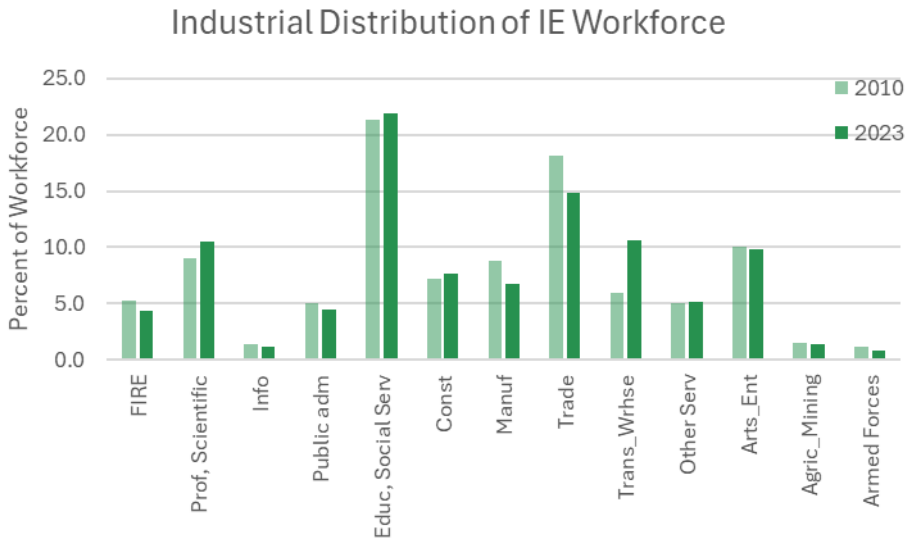
Occupation data provide insights into a workforce's development and economic stability. The growing significance of management (executives, financial managers, administrators) or sales/office jobs (real estate/insurance agents, accounting clerks) is a strong indicator of regional demand for higher-skilled workers. Growth in the proportion of service-level jobs, on the other hand, can be a sign of greater economic instability and lower wages. In general, service-level jobs are also much more susceptible to developments in A.I. and job automation. Occupations associated with natural resources and construction, or production, transportation, and materials moving, are somewhere in the middle: some jobs in these occupations may provide a stable income and good employment conditions. While there is not a perfect relationship between occupation and economic stability, they are correlated.



We use the occupational codes in our IPUMS ACS extract to classify occupations under 5 major areas: Management; Sales/Office; Natural Resources and Construction; Production, Transportation, and Materials Moving; and Services. Based on this classification, the Inland Empire's workforce has seen increased importance of management positions and a reduced importance of sales/office positions. Production, Transportation, and Materials Moving occupations have also increased in importance in recent years, due to the growing presence of Logistics firms. See the chart above for yearly data, and the chart below for a summary over the 2010-2023 period. Overall, the impact of these trends is mixed: the growth in management positions is a positive sign, but the drop in sales/office professions and the rise in materials moving occupations indicate greater workforce instability.



There have also been changes in the distribution of workers across industries. We use the industry codes in our ACS extract to sort the workforce by major industry, informed primarily by the NAICS 2-digit classification system (see the Appendix for a technical discussion). The chart below organizes industries from higher to lower paying, showing that there has been an increase in the proportion of the I.E. workforce in Professional, Scientific, and Technical Services industry firms. The largest increase, however, has been a near-doubling of the percentage of the workforce in Transportation, Warehouse, and Utilities industry.



Distribution of economic opportunities and the future of the region

The above analysis shows that the Inland Empire's workforce has become more diverse, and that economic opportunity for workers has grown modestly. To attract workers, the region needs to prove that it is investing in its workers and providing opportunities for all. If it cannot do so, it may end up losing workers in the same way the rest of the state has.

In this section we look more closely at how economic opportunity has been distributed among racial/ethnic groups and by gender. As a starting point, we examine the distribution of worker income by racial and ethnic groups; we then examine these groups' participation in the workforce by occupation and industry. Significant gaps in income by race and ethnicity exist which cannot be explained by demographic factors, educational attainment, or worker occupation. The segmentation of underrepresented minority workers into specific low-paying industries plays a major role in explaining the income gaps. We then perform a similar analysis for differences in income between men and women.

We evaluate an empirical model of earned income based on a pooled 2021-2023 sample of the ACS microdata for people whose place of work is the Inland Empire. The model is:

$$income_i = \beta_0 + \delta * race_i + \epsilon_i$$

Where *income* is personal earned income adjusted for inflation in Southern California and *race* is a vector of binary variables indicating major racial categories[3], excluding white workers who serve as our reference group.

[3] Black, Asian/Pacific Islander, Native American/Alaskan Native, Other Race (single), Two or More Races.

The vector of coefficients δ presents the income of a particular group *relative to* the reference group (in a model without covariates, an element of δ shows the difference in mean income between Whites and a particular racial group). In more detailed specifications of this model, we add the following controls: age, age-squared, sex (male/female), educational attainment (via binary variables indicating different levels of attainment), and occupation (5 main categories; see previous section). The object of the analysis is the vector of coefficients δ and how the value of these coefficients changes as we add additional covariates. The interpretation of the coefficients in the later specifications is based on regression control: holding constant age, age-squared, sex, educational attainment, and occupation, what are the remaining differences in income between each group and the reference group?

The average inflation-adjusted earnings per employed white person were $69,666, and the results from Table 1 show that black earners made $15,746, or about 22.6%, less than white workers (column 1 of the table below). After controlling for age, sex, and educational attainment, the difference between white and black workers declined to $11,321 but was still statistically significant. Controlling for occupation brought the difference down to $8,965. See the table (Panel A) for average relative incomes of other racial groups.

Panel B shows that there are also major differences in income between white-non-Hispanic/Latinos and Hispanic/Latino workers (any race). The results show that relative to white-non-Hispanic/Latino workers, both white-Hispanic/Latino and non-white-Hispanic/Latino workers earn similarly less, by a magnitude of around $30,000. Adding regression controls reduces these gaps considerably, to around $11,000, but they remain statistically significant. They also remain economically significant and slightly larger than the black-white income gaps.

Table 1: Differences in Average Inflation-Adjusted Income, Inland Empire, 2021-2023

	(1)	(2)	(3)
Panel A			
Black	-$15,746**	-$11,321**	-$8,965**
Asian/PI	-$2,066	-$7,321**	-$5,792**
Native American/Alaskan Native	-$21,192**	-$8,804**	-$6,540**
Other Race	-$29,178**	-$13,280**	-$9,413**
Two or More Races	-$21,662**	-$10,139**	-$7,434**
Panel B			
White-Hispanic/Latino	-$29,830**	-$12,780**	-$10,084**
Non-White-Hispanic/Latino	-$32,592**	-$15,206**	-$11,159**
Non-White-non-Hispanic/Latino	-$12,020**	-$9,839**	-$7,838**
Observations	49,385	49,385	49,385
R-squared	0.034/0.044	0.166/0.185	0.197/0.213

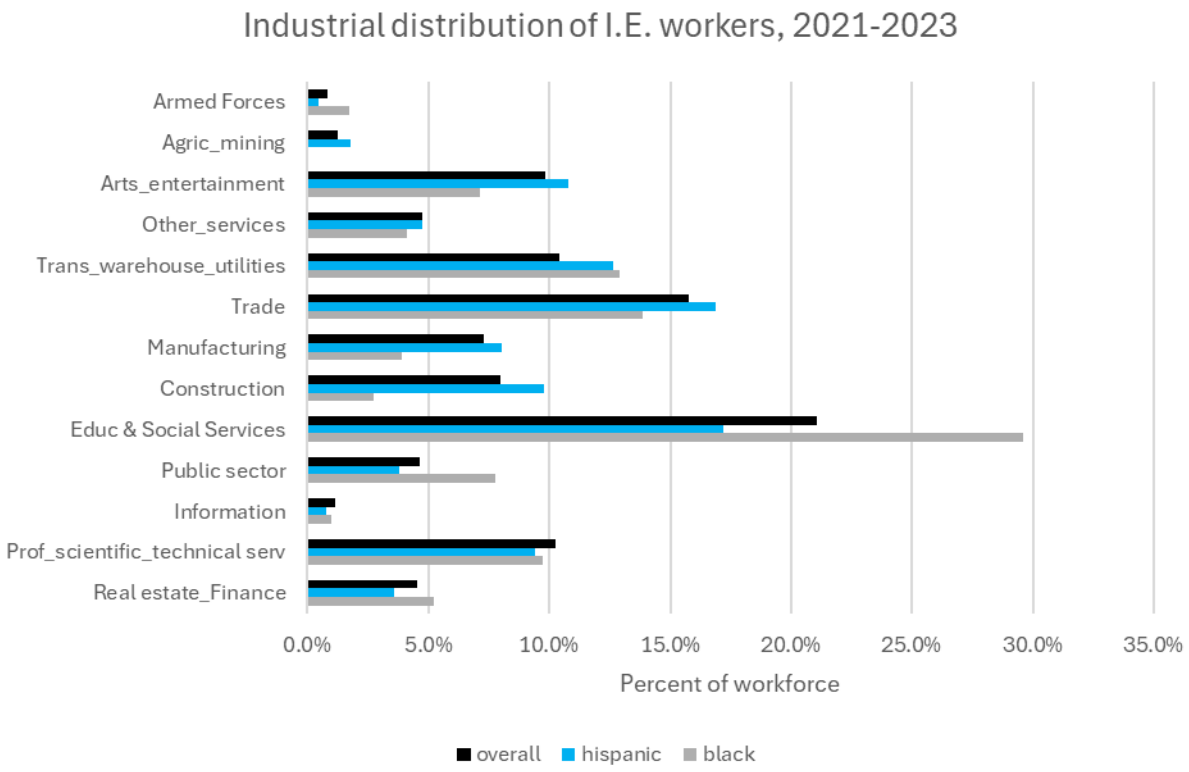
Notes: Panel A coefficients present earned income of group relative to white workers; Panel B coefficients are relative to white, non-Hispanic/Latino workers. All coefficients rounded to the nearest dollar. Column 1 reports unadjusted results; Column 2 adds age, sex, and educational attainment as controls; Column 3 adds Column 2 controls as well as occupation. R-squared is reported for both Panel A and Panel B respectively.

Inference/statistical significance determined using heteroskedasticity-robust standard errors: ** refers to significance at the 99% confidence level; * significance at 95% confidence.

Source: Author's calculations from Ruggles et al. (2024) (see footnote 1).

The fact that statistically significant differences in median income remain after controlling for expected factors suggests that similarly educated workers, in a similar occupational standing and at a similar age and sex, earn different annual incomes due partly to their race or ethnicity. These gaps may be due to differential treatment of minority groups, different degrees of labor market experience, different industries of employment, or other factors.

We now show that industry may explain why the difference between African American and White workers is lower than that between Hispanic/Latino and White workers. See the chart below, which shows that Hispanic/Latino workers are more likely than White workers to work in low-paying industries like Arts and Entertainment, Trade, and Construction. On the other hand, our analysis shows that Black workers are well-represented relative to Hispanic/Latino workers in middle-income industries like Public Administration, and Education, Health, and Social Services industries. These differences may explain why income gaps between some worker groups are smaller than others.



Income gaps also exist by gender. See the table below, which replaces the variable *race* in the regression equation above with *female* (an indicator variable which equals 1 if the person is

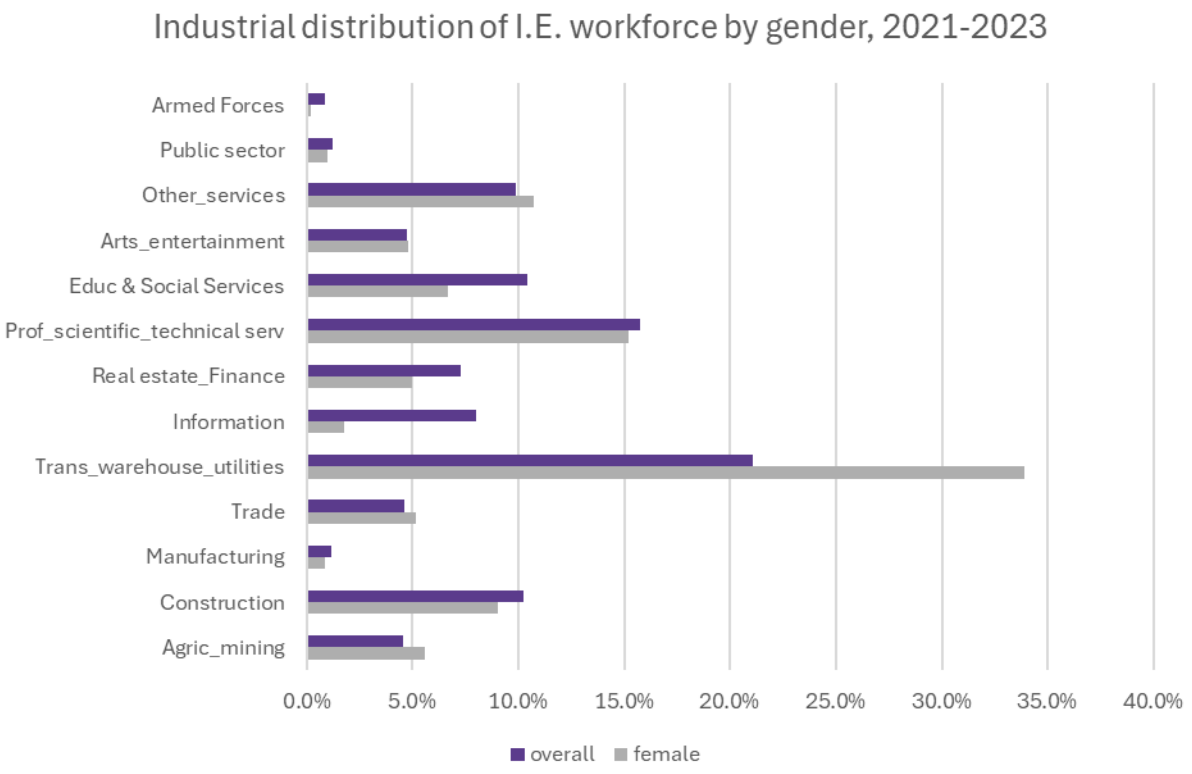
female and zero otherwise). Without regression controls, the difference between males and females is about $17,126.99. With regression controls, the difference increases in magnitude to $22,946. Thus, income gaps grow as we compare similarly qualified workers. While women are more likely to work part-time and therefore earn less money than men, gaps persist even among similarly educated workers.

Table 2: Men-Women Differences in Average Inflation-Adjusted Income, 2021-2023

	(1)	(2)	(3)
Female	-$17,126**	-$20,312**	-$22,946**
Observations	49,385	49,385	49,385
R-squared	0.016	0.175	0.208

Notes: Coefficients rounded to nearest dollar. Column 1 reports unadjusted results; Column 2 adds age, sex, and educational attainment as controls; Column 3 adds Column 2 controls as well as occupation. Inference/statistical significance determined using heteroskedasticity-robust standard errors: ** refers to significance at the 99% confidence level.

Source: Author's calculations from Ruggles et al. (2024) (see footnote 1).



Industrial segmentation may also explain the male-female income gaps. Women are underrepresented in high-paying sectors like Real Estate and Finance, and Information, and also slightly underrepresented in Professional, Scientific, and Technical Services industries as well as Public Administration. They are overrepresented in lower-paying industries like Other Services (which include mainly personal services), Trade, as well as the Transportation and Warehouse and Utilities industries.[4]

Conclusion: policy implications of the research

Regional stakeholders can change the image of the Inland Empire by steering the economy toward higher-paying, sustainable jobs. This can make the region an attractive destination for workers and companies and solve the pressing problem of a stagnant population. Here are a few actions that can achieve these aims:

- Criteria for new development projects are often based solely on job creation or aggregate economic activity; we argue that criteria should also incorporate whether a project will increase an area's *median income*, based on an assessment of the occupational distribution of jobs created under the project (i.e., management or sales/office positions)
- Incentives should be provided to companies in industries that are higher-paying and that will expand economic opportunity; for example, professional, scientific, and technical services; health, education, and social services; and finance, insurance, and real estate sectors
- Incentives should also be provided to boost entrepreneurship (i.e., self-employment) across a range of industries and business owners; relatedly, work-from-home opportunities and incentives should be explored
- Returning to the issue of the impact of a project on occupational distribution, criteria for new projects should consider long-term career opportunities which may help service-level workers move into sales/office or management roles within the company at the job site
- Finally, criteria for new projects should reflect the region's unique skill distribution, with the understanding that jobs may not necessarily require a college degree, but may still provide the kinds of career advancement mentioned earlier through occupational mobility

It is crucial that cities work together to ensure that high economic standards are upheld and that races-to-the-bottom are discouraged. This issue might be addressed through A) intercity agreements; B) improving amenities that attract businesses rather than supplying overly generous incentives; and C) increasing transparency.

These claims, and the implications of this report, are certainly up for debate. There are many counterarguments that could be made against what has been presented; some are listed below along with responses:

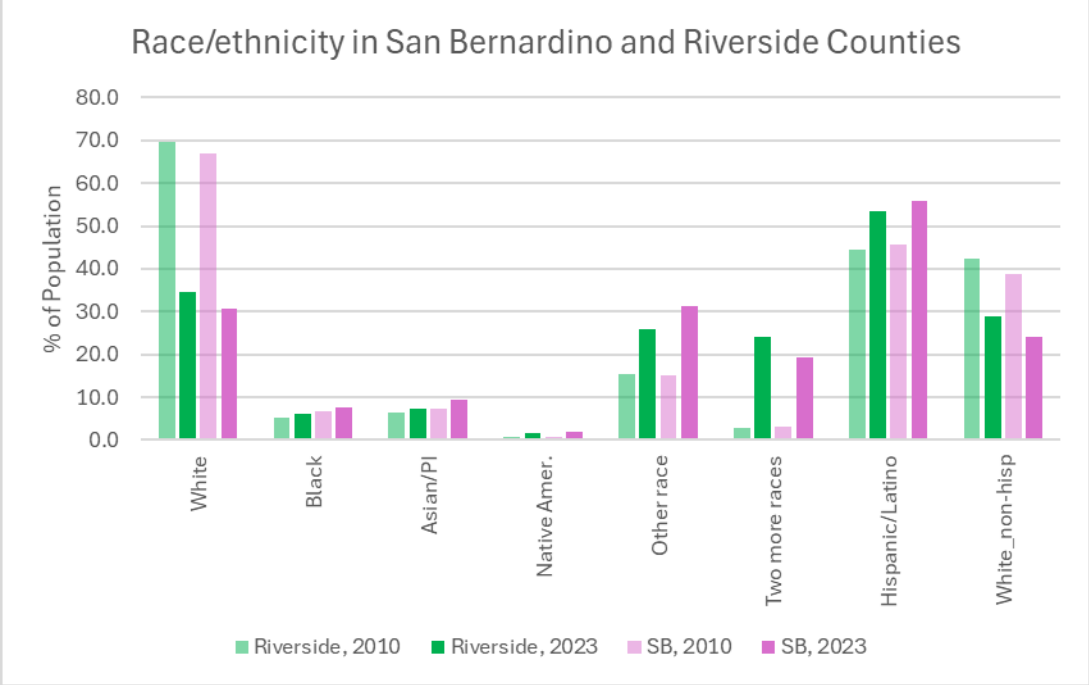
[4] This may be a surprising finding, but most of the women in this industry are in sales/office rather than materials-moving occupations.

- Some may argue that the concerns of a population exodus are exaggerated; cost of living remains a strong pull for the region
    - We would respond that while the cost of living is lower in the Inland Empire, as information about alternative areas spreads and as other regions develop economically, it will become easier for workers to find areas that offer greater opportunities than the I.E. Also, what often matters the most for workers is the *rate of change* in cost of living, which has accelerated in California more than other areas and can increase the pressure to relocate or choose a different destination to settle down
- This report found that the importance of management jobs has grown. There has also been growth in key sectors such as Professional, Scientific, and Technical Services; and Education and Health and Social Services; in general, there is upward mobility
    - Opportunity is undoubtedly present, but the data show that disparities nevertheless exist and that opportunity (income, self-employment, working from home) has been declining or stagnant. Also, not all jobs in an occupational category like management are higher-paying; the fact that inflation-adjusted median income has not grown substantially suggests that occupation is not the sole determinant of purchasing power
- Demographic trends such as higher natural birth rates may reduce the need for migrant inflows to satisfy local workforce demands
    - Secular trends in fertility are still falling – even if the I.E. compares favorably with other parts of California or the U.S., the trend is still downward. Times are different from the 20th century, when millions of people migrated to California for economic opportunity. To grow, the Inland Empire needs to remain competitive as a place to live and work.
- Official indicators will always fail to capture the full extent of entrepreneurial activity, e.g., the presence of gig economy work and the informal economy is entrepreneurial activity not captured by official statistics
    - While gig economy work and informal economic activity may supplement earnings and provide valuable outlets to creative energy and entrepreneurial spirit, they are also more volatile than formal sector employment and may not provide the same skill development opportunities

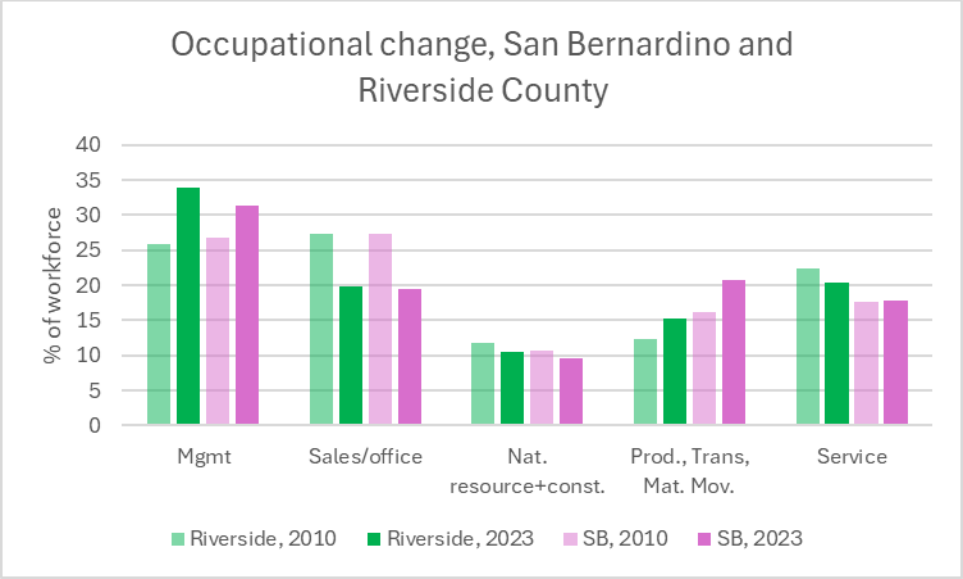
Appendix, part 1: Regional differences

This report defines the Inland Empire as a single area composed of San Bernardino and Riverside County. This is understandable in the sense that the I.E. is a major commuting zone where many workers reside in the "triangle" of the major inland job centers of Riverside, Ontario, and San Bernardino. At the same time, there are regions in both counties which operate somewhat independently from the metropolitan "core". San Bernardino County has the High Desert and Mountain communities, while Riverside County contains the Coachella Valley. With these distinctions in mind, we present data and charts for the two counties separately and discuss the major regional differences.

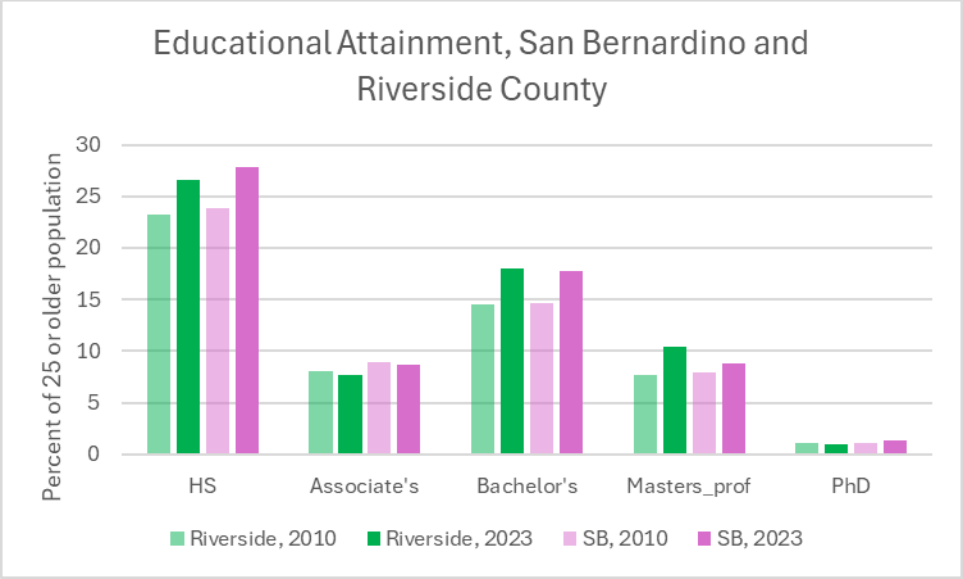
These charts show that many of the demographic trends defining the Inland Empire are common to both counties. However, there are notable differences.



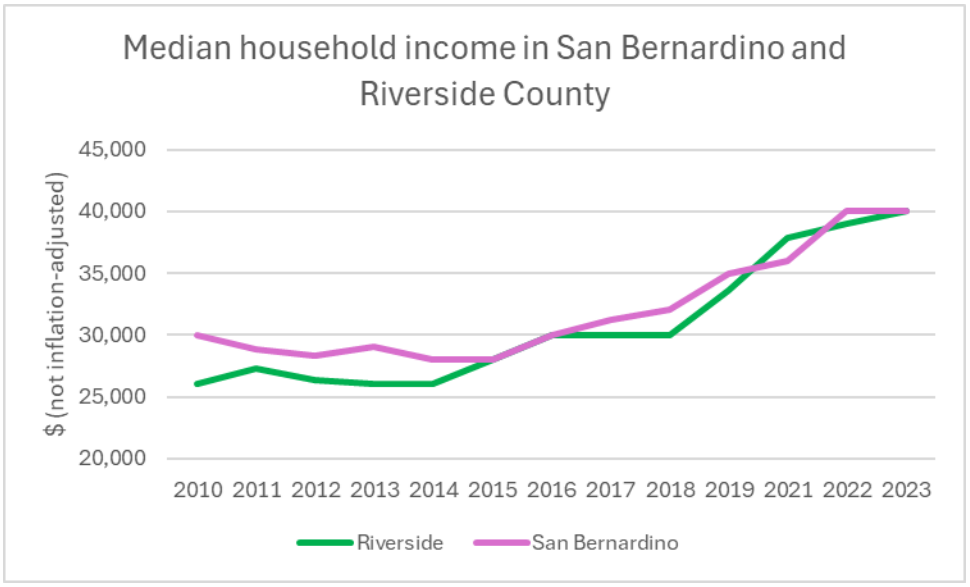
Demographically, San Bernardino County's workforce has seen a greater increase in the percent Asian/Pacific Islander and has trended slightly more toward Hispanic/Latino than Riverside County, making the workforce slightly more diverse overall as of 2023.



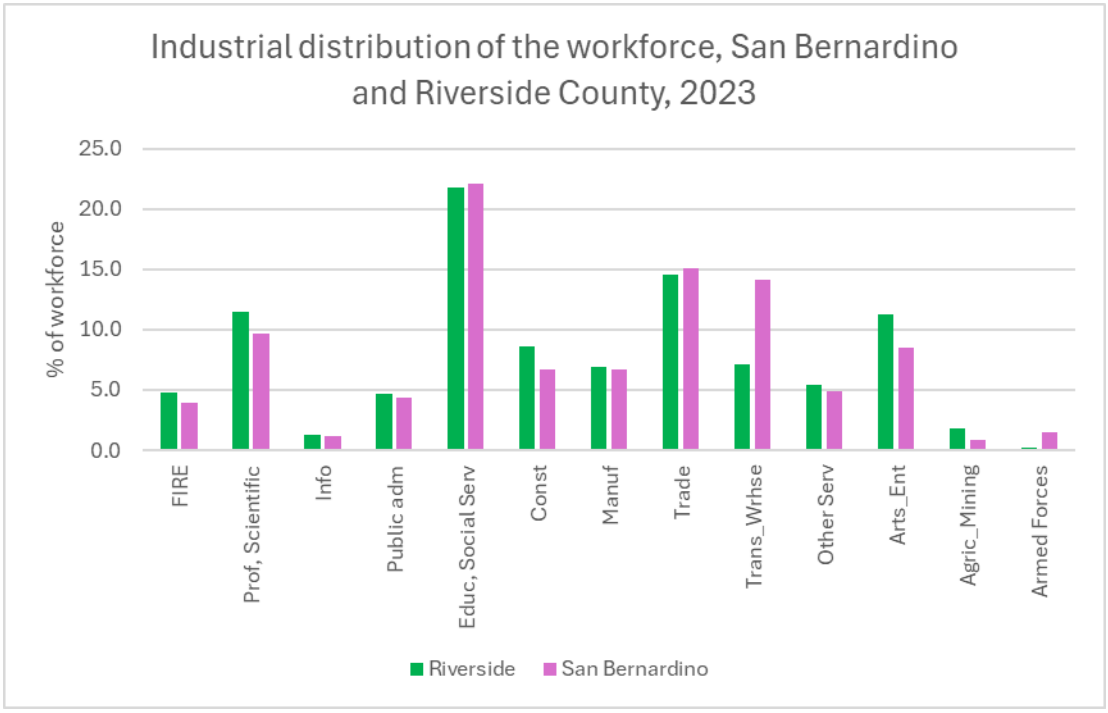
In terms of occupation, San Bernardino County's workforce has seen a greater trend toward production, transportation, and material moving jobs than Riverside County, and a smaller increase in managerial occupations, suggesting a less developed workforce. There was also a slight increase in services occupations in San Bernardino County. Riverside County did have a higher percentage of their workforce in service occupations by about 2.5 percentage points in 2023, but the percentage of the workforce in such occupations declined between 2010 and 2023.



In terms of educational attainment, the two workforces are very similar and have trended in similar directions, although in Riverside County the share of the workforce with a master's or other professional degree has increased more than in San Bernardino County.



In terms of median personal income, workers earned the same median income in 2023, but Riverside County started at a lower "base" in 2010, and it so has grown faster. Also, these results are not inflation-adjusted. If they were, both areas would show very little income growth over the period.



In 2023, the industrial distribution of each workforce was very similar, with differences in the proportion of the workforce in Logistics, which has increased much more in San Bernardino County, and the importance of the trade sector, which has declined significantly in

Riverside County. Riverside County also has a slightly larger proportion in higher-paying industries of FIRE and Professional, Scientific, and Technical services.

Appendix, part 2: technical details

Data for this report were collected from IPUMS via their 1% ACS microdata extracts for 2010-2023, excluding 2020. The dataset and code for all analysis are available upon request.

Identifying a member of the IE workforce required using the "PWPUMA", or "place of work PUMA" code available in the IPUMS extracts, in conjunction with PWSTATE, or "place of work state" code, which was consistent throughout the sample at PWSTATE=6 for California. The term PUMA refers to "public use microdata area". The PWPUMA codes were unorthodox in 2010 and 2011 samples, but standardized afterward:

Place of work	**PWPUMA code, 2010+2011**	**PWPUMA 2012-2023**
San Bernardino	4000, 4100, 4200, 4300	7100
Riverside	7700, 7800, 7900, 8000	6500

Regression results were produced using the standard OLS estimation procedure in Stata 18 with the option "robust" for heteroskedasticity-robust standard errors. While summary statistics are sample-weighted using "perwt" or "hhwt" (person or household weights), regression results were not sample-weighted.

Occupation and industry categories used in the tables and regressions are based on the variables OCC and IND from the IPUMS ACS extracts. Due to sample size concerns, we use a coarser version of the standard 2-digit NAICS classification system, using the following categories in our analysis:

Industry	**Codes (IND/OCC)**
Agriculture and mining	170-490
Construction	770
Manufacturing	1070-3990
Trade	4070-4590, 4670-5790
Transportation, Warehouse, Utilities	6070-6390, 570-690
Information	6470-6780
Finance, Insurance, Real Estate	6870-7190
Professional, Scientific, Technical Services	7270-7790
Education, Health, and Social Services	7860-8470
Arts and Entertainment	8560-8690
Other Services	8770-9290
Public Administration	9370-9590
Armed Forces	9670-9870
Occupation	
Management	10-3550

Sales/Office	4700-5940
Natural Resource and Construction	6005-7640
Production, Transportation, Materials Moving	7700-9750
Services	3600-4655