City of Portland Economic Opportunities Analysis, Volume 1. Trends, Opportunities and Market Factors,

Discussion Draft, March 2022

Income inequality and racial equity trends (Section 9 in Volume 1)

The social benefits of economic growth are unevenly distributed. Responding to inequitable growth trends and racial disparities, new policy directions in the 2035 Comprehensive Plan call for analyzing social burdens and benefits in planning decisions. This section reviews regional labor market trends in terms of social burdens and benefits, particularly considering inequitable trends and disparities.

Summary Findings

- Three inequitable growth trends stand out as downsides of how the regional economy has grown in the last two decades: increasing income inequality, persistent racial income disparities, and declining affordability. Core land use policies contribute to these trends by supporting wage-polarized job growth and constraining middle-wage job growth.
- Increasing income inequality is occurring faster in the Portland region than other parts of the country, driven by wage-polarized job growth. The region's new job growth from 2000 to 2018 has a 'J-shaped' wage distribution, such that high-wage occupations grew by 65%, middle-wage jobs by 3%, and low-wage jobs by 36%. This job-growth trend is also mirrored in the J-shaped income distribution of the region's new households.

  Increasing 'income inequality' concerns the shifting distribution of the population to haves and have-nots with a shrinking middle. The middle-wage occupations that made up 58% of regional jobs in 2000 have had minimal growth since then, while the region's above-average job growth has been concentrated in high- and low-wage occupations.
- The burdens of wage-polarized job growth fall primarily on people without bachelor's degrees and disproportionately on workers of color, who rely primarily on middle-wage jobs for upward income mobility. High-wage jobs typically require bachelor's degrees or higher, but only 44% of regional workers and 36% of BIPOC workers have bachelor's degrees.
- Middle-wage jobs support inclusive prosperity by extending mid-level wages to most (about 400,000 jobs in 2019) of the workers who don't have bachelor's degrees. Industrial occupations made up 61% of these middle-wage jobs held by people without bachelor's degrees in 2019, office support occupations made up 27%, and healthcare support 9%.

  Upward-mobility wage scales (75th percentile) of high, middle, and low-wage occupations in 2019:
  - High-wage: $90K - $145K
  - Middle-wage: $47K - $82K
  - Low-wage: $32K - $39K
- Most U.S. regions with higher job growth rates also had healthy middle-wage job growth (0.8% average annual growth rate (AAGR) or higher from 2000 to 2018), compared to the flatter middle-wage growth in the Portland region (0.1% AAGR). The leading middle-wage occupation

types in the faster growing regions were Transportation and Office Support. These faster growing occupations typically correspond to lower-density industrial and back-office land uses.

- Wage-polarized job growth is contributing to racial income disparities. The regional median income of Black, Indigenous, and Hispanic households was only 57%, 75% and 77% respectively of the median for all races in 2019 (5-year average). Job growth and land development can reduce or increase racial income disparities. A comparison of the distribution of jobs among employment land types by wage, race, and educational attainment shows that industrial- and (to a lesser extent) office-sector jobs have higher BIPOC incomes (Black, Indigenous, and People of Color) relative to other sectors. While Portland's faster job growth in the neighborhood commercial and institutional sectors has reduced BIPOC incomes relative to other sectors.
- Declining income self-sufficiency (or affordability) is another inequitable impact of widening income inequality. Rising local prices of basic needs have outpaced the relatively flat wages of low- and middle-wage occupations. Multnomah County's share of households in need, measured by the Income Self-Sufficiency Standard, increased from 23% in 2008 to 34% in 2017. Market impacts of wage-polarized growth contribute to this trend, as concentrated local growth of high-wage jobs and high-income households puts upward pressure on local prices.
- Local land use policy directions emphasizing compact development contribute to the region's wage-polarized job growth trend, by facilitating growth in higher-density districts with a wage-polarized mix of jobs and by constraining growth in lower-density middle-wage industrial and back-office districts. In contrast, other regions such as Austin, Las Vegas, Sacramento, and Salt Lake City, all similar in size to Portland, are generating moderate to robust middle-wage job growth through mixed densities.

Middle-wage occupations support inclusive prosperity

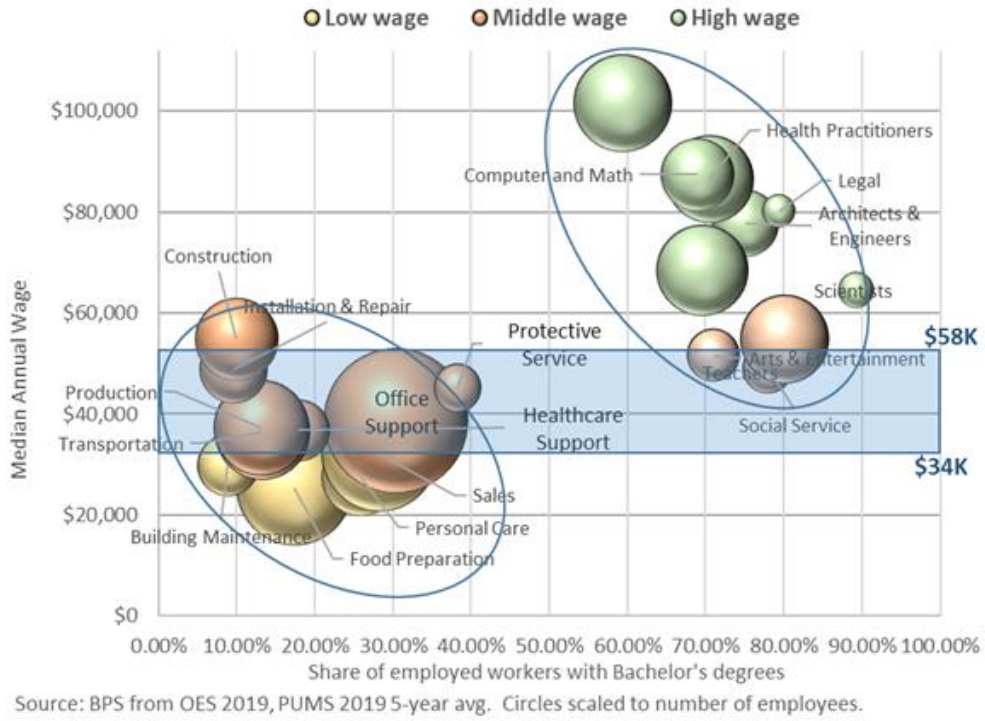
The regional labor market is bifurcated in its wage distribution (operating like two separate labor markets) by the advanced education requirements of high-wage jobs, as shown in Figure 40. High-wage occupations typically require bachelor's degrees or higher, either competitively or as an entry-level credential. However, most jobs don't require bachelor's degrees, and most workers don't have them. Nationally, 26% of all jobs are in occupations with an entry-level requirement for a bachelor's degree or higher in 2018 (Bureau of Labor Statistics). Only 44% of workers in the Portland Region and 36% of BIPOC workers have bachelor's degrees or higher (IPUMS, 2019 5-year average). For other workers with less or no college, middle-wage jobs support inclusive prosperity as a higher-paying alternative to low-wage occupations.

Figure 40 compares major occupation types in the 7-County Region by their median wages, bachelor's degree attainment, and number of jobs, distinguishing the low-, middle- and high-wage occupations. The middle-wage occupations have median wages roughly between $35,000 and $60,000 annually in 2018. Middle-wage occupations made up 48% of regional jobs in 2018, while low- and high-wage occupations each made up 26%.

The industrial and office support occupations make up most of the middle-wage jobs that require little or no college, and these job types typically rely on locations in industrial and back-office districts (described in Section 5 of EOA Volume 1). Industrial occupations include transportation, production (primarily manufacturing), construction, and installation. The region had 395,000 jobs in middle-wage

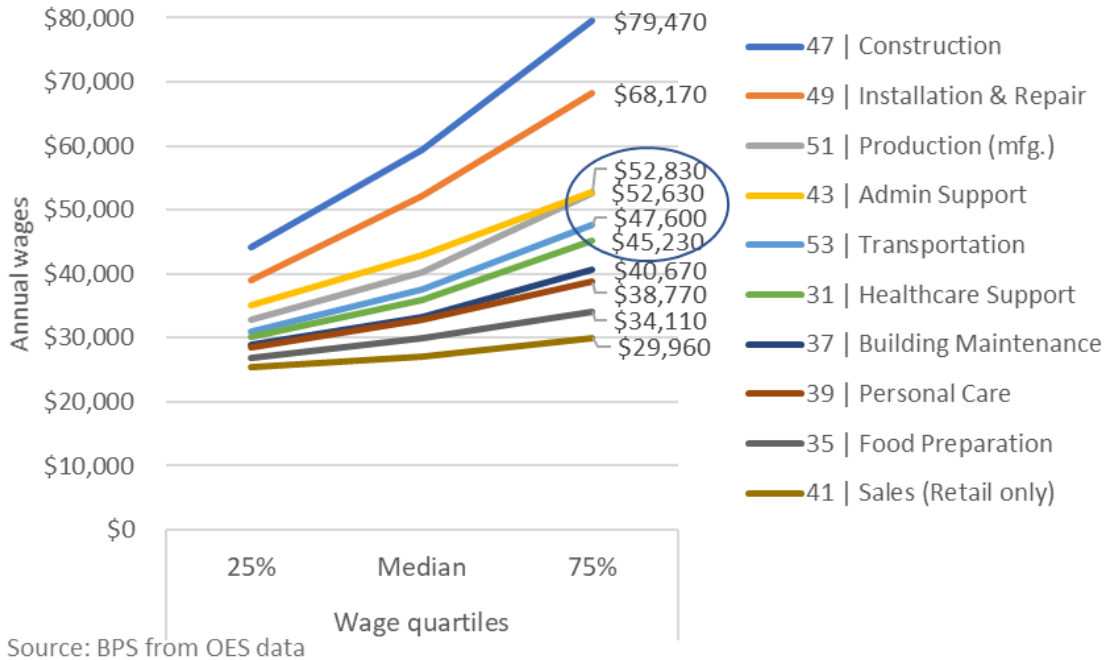
occupations held by people without bachelor's degrees in 2019, of which 61% were in industrial occupations

Figure 40. Occupations by median wage and bachelor's degree share, in the 7-County Region, 2018



Source: BPS from OES 2019, PUMS 2019 5-year avg. Circles scaled to number of employees.

Figure 41. Wage distribution in low- and middle-wage occupations, 7-County Region, 2020



Source: BPS from OES data

(241,000 jobs); office support made up 27%; healthcare support 9%; and the rest were in other fields (see Figure 63 in Appendix 1, included at the end of this document). Industrial occupations also employed 72% of the middle-wage workers with high school degrees or less (132,000 jobs in 2019).

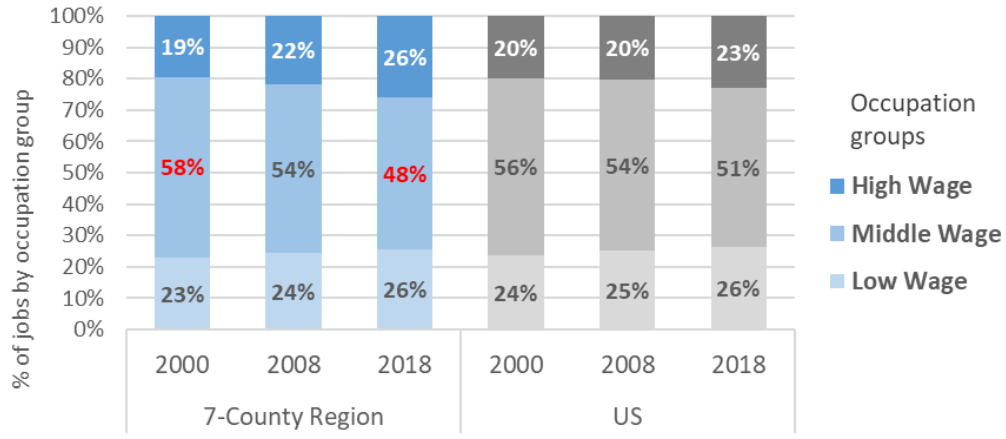
In addition to higher median pay shown in Figure 40, the overall earnings advantage of middle-wage jobs typically includes a combination of full-time work, benefits (such as health insurance and retirement accounts), and upward wage mobility over careers, which can transform working class households. The upward wage mobility potential of middle wage occupations for workers without bachelor's degrees is estimated in Figure 41 by the 75th percentile wage, which means the starting wage of the highest paid fourth of workers in an occupation. For most (356,000 jobs in 2020) of the region's middle-wage-occupation jobs held by workers without bachelor's degrees, the 75th percentile wages are in the $45,000-$53,000 range, representing mid-level earnings potential. Regional statistics on middle-wage occupations that require less or no college are detailed in Appendix 1, Figure 64 (included at the end of this document), showing total jobs, quartile wages, and share of workers with bachelor's degrees.

The region's growing warehouse and distribution jobs are sometimes mistakenly characterized as low-paying jobs, but the 75th percentile wage of the region's 98,580 jobs in the Transportation occupation in 2020 was $47,600, grouped within the $45,000-$53,000 range of most middle-wage jobs. 'Average-wage' statistics of business sectors can contribute to this mistaken perception, being skewed upward by the highest paid job types and not accounting for educational credentials. For example, the higher 'average wage' of the manufacturing industry relates to its higher share of jobs in professional (white collar) occupations compared to the Transportation and Administrative Support sectors; but the 75th percentile wage of the Production occupation (essentially shopfloor manufacturing jobs) is $52,630, comparable to most middle-wage jobs.

Accelerated wage inequality in the Portland region

Increasing income inequality in the national economy has become a common theme of economic literature in the last two decades (Barube & Thacher, 2004; Holzer, 2009; Autor, 2010 and 2018), generally citing wage-polarized job growth around a shrinking middle. The national 'job polarization' trend (declining share of middle-wage jobs) is occurring faster in the Portland region (see Figure 42). The 7-County Region's share of jobs in middle-wage occupations declined from 58% in 2000 to 48% in 2018, nearly twice as much as the national change in share from 56% to 51% in this period.

Figure 42. Job polarization in the 7-County Region, 2000-2018



Source: BPS from OES data data

National and regional job growth since 2000 has been concentrated in high- and low-wage occupations, as shown in Figure 43. Thus, the middle-income economy of previous decades is shifting to a more divided income distribution of high- and low- wage workers, driven primarily by the types of jobs that are growing. The U-shaped national trend of wage-polarized job growth shown in Figure 43 has more of J-shaped pattern in the Portland region, reflecting faster job growth in high-wage than low-wage occupations. The J-shaped wage distribution of regional job growth is also mirrored in a J-shaped income distribution of regional household growth (net new households primarily from in-migration) between 2007 and 2017, as shown in Figure 44.

Figure 43. Wage-polarized job growth in the 7-County Region, 2000-2018

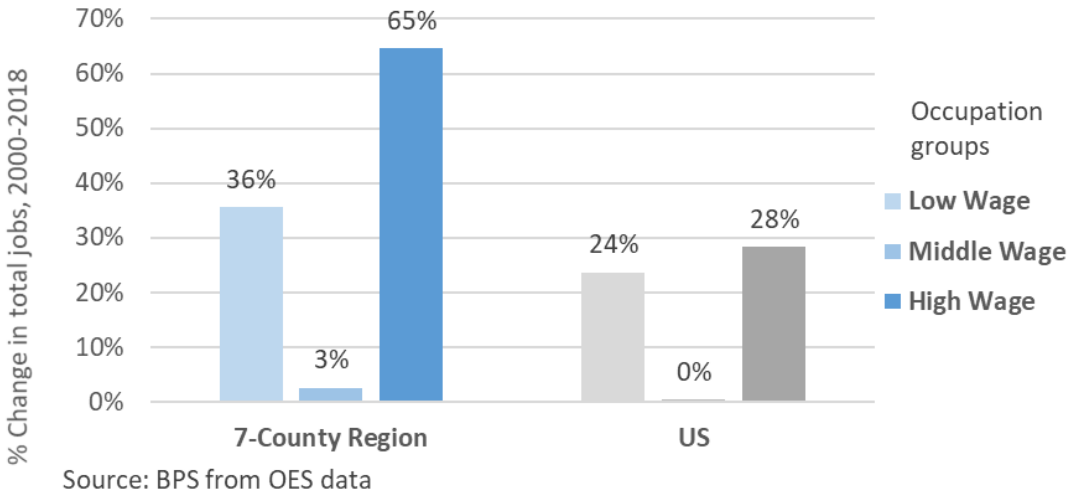
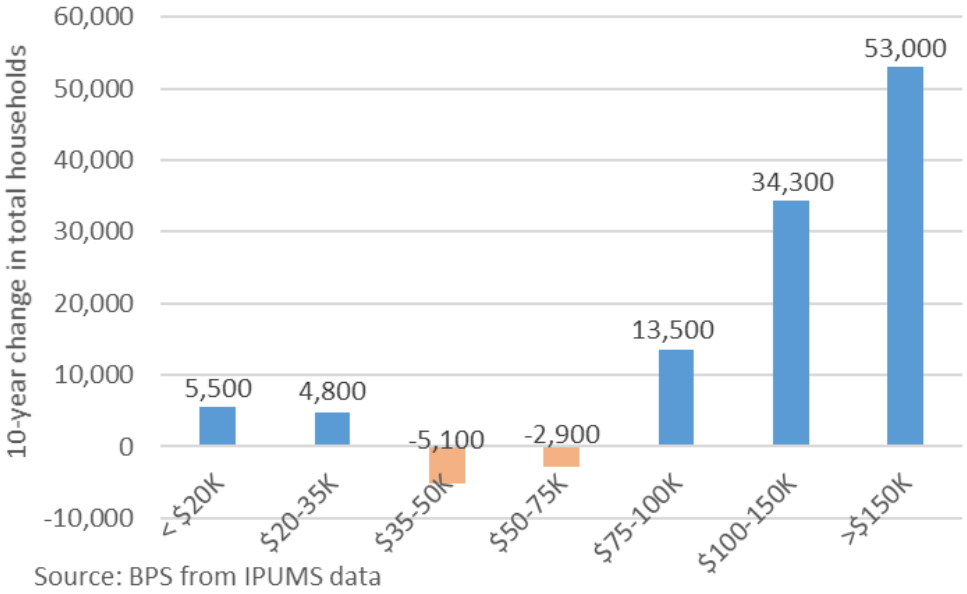


Figure 44. Income-polarized growth of new households in the 7-County Region, 2007-2017

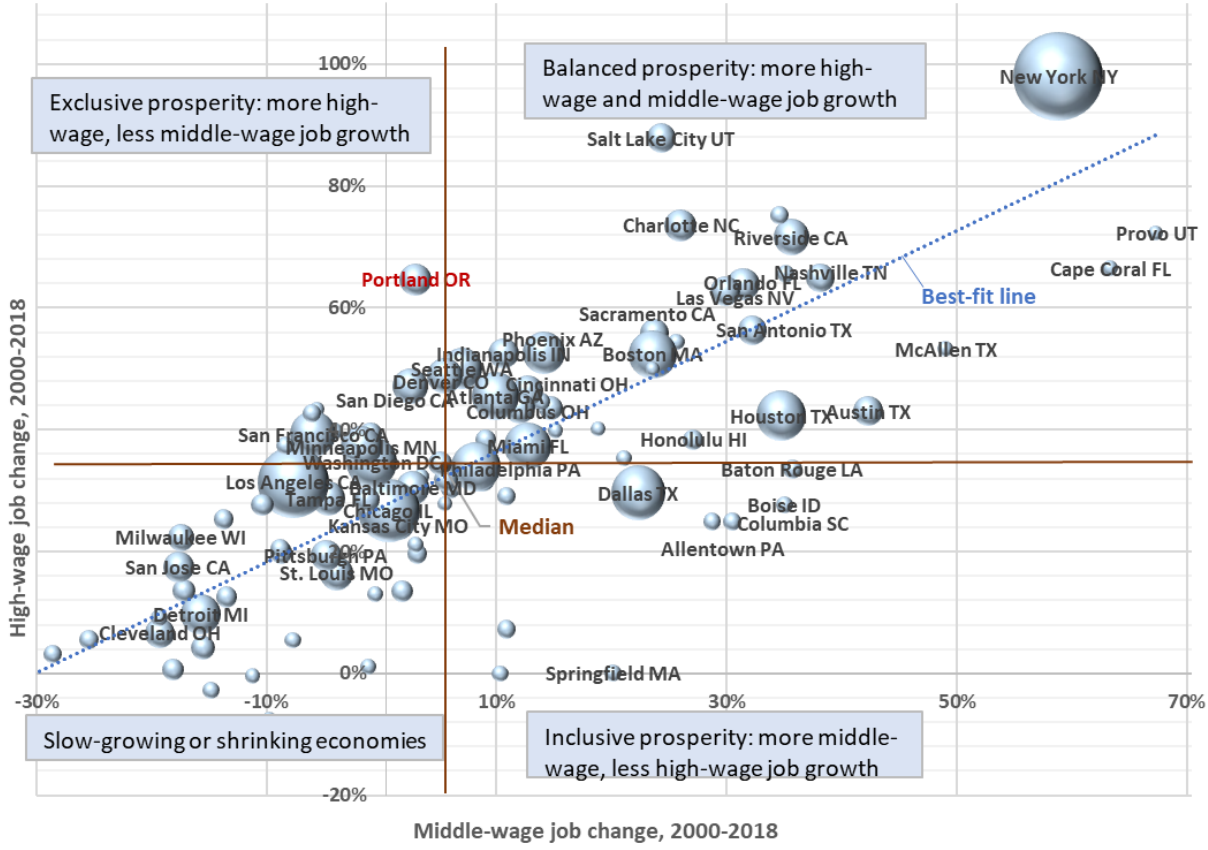


Uneven growth in middle-wage jobs among regions

The flat national trend in middle-wage job growth over recent decades was inconsistent with the widely varying trends among metropolitan regions, as shown in Figures 45-46. Instead, the national trend was made up generally by moderate middle-wage job growth among faster growing regions and moderate decline of middle-wage jobs in shrinking and slower-growing regions. Comparing the largest 100 U.S. regions, Portland was among those with above-median job growth (0.8% average annual growth rate (AAGR) or higher) from 2000 to 2018. However, most of these faster growing regions (31 of 50) also had healthy middle-wage job growth (0.8% AAGR or higher), unlike the flatter middle-wage growth trajectory in the Portland region (0.1% AAGR).

Figure 45 compares the widely varying growth trends in high- and middle-wage occupations among the 100 largest regions from 2000 to 2018. Applying a burdens-and-benefits lens, the chart groups regions into quadrants by their inclusive prosperity benefits in middle-wage job growth relative to high-wage growth. Figure 46 compares middle-wage job growth trends among eight example regions with above-median job growth and similar size to Portland. Both charts show Portland's relatively low performance in middle-wage job growth among faster growing regions.

Figure 45. Varied middle-wage job growth among large metropolitan regions, 2000-2018



Source: BPS from OES data.

Figure 46. Middle-wage job growth variation in similar-sized growing regions, 2000-2018

	Portland	Seattle	Sacramento	Las Vegas	Salt Lake	Austin	Riverside, CA
Size rank in jobs	24	13	35	34	39	32	16
Sprawl rank (221 is highest)*	80	53	120	59	94	114	215
Percent change in jobs by occupation group, 2000-2018							
High wage	65%	50%	56%	63%	88%	43%	72%
Middle wage	3%	7%	23%	25%	24%	42%	35%
Change in middle-wage jobs by major occupation (SOC code), 2000-2018							
Total middle-wage jobs change	**14,400**	**57,180**	**86,310**	**89,040**	**96,870**	**138,950**	**211,560**
Less-/no-college occupations	-6,360	29,550	53,480	52,640	62,390	97,810	164,030
43 | Admin Support	690	-21,650	9,750	23,100	34,670	49,850	52,360
53 | Transportation	-1,880	18,820	25,220	15,790	14,640	19,210	76,870
51 | Production	-24,870	-2,470	-2,990	110	640	-10,390	-13,700
47 | Construction	8,550	13,720	5,250	-9,990	6,150	13,420	6,780
49 | Installation & Repair	-1,620	3,320	8,940	3,820	3,150	7,030	17,900
31 | Healthcare Support	10,450	13,600	7,850	9,390	5,020	10,050	11,270
33 | Protective Service	2,320	4,210	-540	10,420	-1,880	8,640	12,550
Bachelor's-credential occupations	20,760	27,630	32,830	36,400	34,480	41,140	47,530
21 | Community Service	4,960	3,100	8,050	4,600	6,660	5,510	13,150
25 | Teachers	4,790	18,590	21,380	24,860	22,130	24,760	30,490
27 | Arts & Entertainment	11,010	5,940	3,400	6,940	5,690	10,870	3,890

Source: BPS from OES data. Sprawl rank (*) from Smart Growth America (2014).

What types of middle-wage jobs are increasing in growing regions? We reviewed the 2000-2018 job trends among middle-wage occupations in the 100 largest regions to compare impacts by occupation type.

- The leading occupations that accelerated middle-wage job growth in the faster growing regions were Transportation and Administrative Support. The larger scale of middle-wage job growth in these occupations shown among example regions in Figure 46 was typical of regions with moderate (0.8% AAGR or higher) to robust middle-wage job growth.
- Job losses in the Production (manufacturing) occupation were common among regions, but they were generally offset by larger gains in other middle-wage occupations among faster growing regions. The larger middle-wage job impact of Production job losses was in slower growing regions (such as the 45% decline of Production jobs in Los Angeles and 29% decline in San Francisco) and shrinking regions (such as the 32% decline of Production jobs in New Orleans and 37% decline in Cleveland).
- Construction and healthcare support also had positive but smaller impacts on middle-wage job impacts in the faster growing regions, as shown in Figure 46, growing at scale with the regional economies.

Has middle-wage job growth been concentrated in sprawling regions? The trend is mixed. The faster growing middle-wage occupations in transportation and admin support typically correspond to lower-density industrial and back-office land uses, but faster middle-wage job growth spanned both more sprawling and less sprawling regions. We compared sprawl ratings of regions by Smart Growth America (2014) with middle-wage job growth trends (see Figure 46), and the results varied.

- Some Western U.S. examples of regions with moderate (Portland-level) sprawl also had moderate to robust middle-wage job growth, including Austin, Las Vegas, Sacramento, and Salt Lake City. These regions indicate potential for increasing middle-wage job growth in Portland with limited sprawl impact.
- At first glance, regions with the fastest middle-wage job growth were ranked among the most sprawling (such as Riverside California, Nashville, Charlotte, and Orlando), but others like Austin are exceptions.
- Some of the most compact regions had declining middle-wage jobs (such as San Francisco and Los Angeles) while others had moderate middle-wage job growth (such as New York and Boston).

Why are some regions growing middle-wage jobs faster than others? Economists have explained widening national income inequality trends in different ways. Common explanations include automation trends that replace routine jobs (Divorkin, 2016), globalization trends that off-shore middle-wage jobs to developing nations (Milanovik, 2016), institutional differences that shape national and regional economies (Stiglitz, 2018), and others. The varying wage-inequality trends by region indicate that global factors like automation and off-shoring drive only part of the nation's widening income inequality. Moreover, the Production (manufacturing) job losses most often attributed to automation and globalization trends had relatively small middle-wage job impact in faster growing regions.

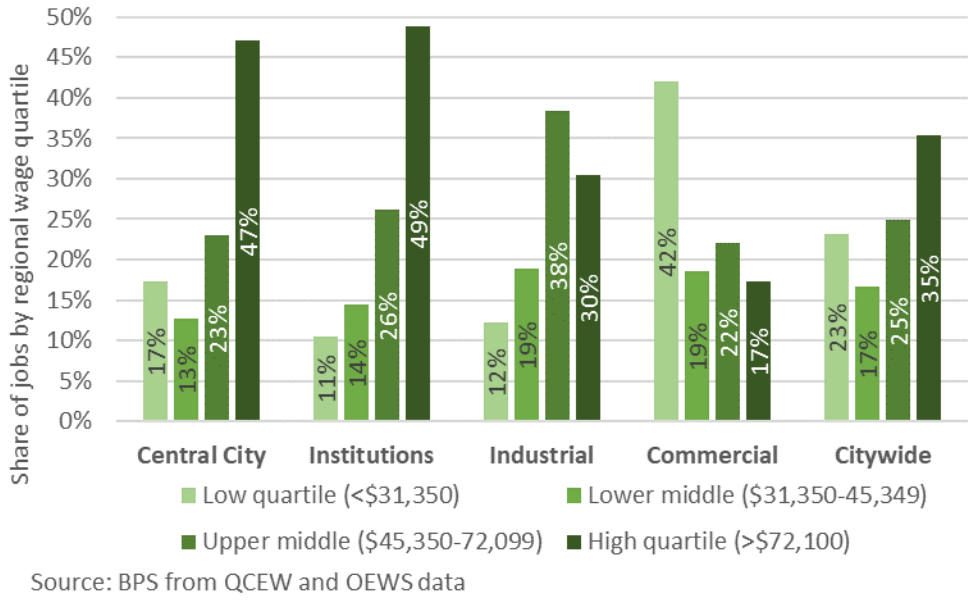
Instead, the widely varying middle-wage job growth among regions is more consistent with the policy-choice explanations of income inequality, which highlight regional policy differences that shape their economies. In particular, the larger-scale middle-wage job growth in Transportation and Administrative Support relies on adequate regional growth capacity to support these types of growth, including developable industrial and back-office land supply, career and technical education for new workers, and infrastructure to accommodate increasing freight volumes.

Land use policy impacts on wage-polarized job growth

The emphasis on compact development in local and regional land use policy has likely had major impacts in accelerating Portland's wage-polarized job growth. This is occurring in three ways. First, policy emphasis on compact development facilitates growth in higher-density, mixed-use districts that have a wage-polarized mix of jobs, while underemphasizing growth in lower-density industrial and back-office districts that support mostly middle-wage job growth, as shown below in Figures 47 and 48.

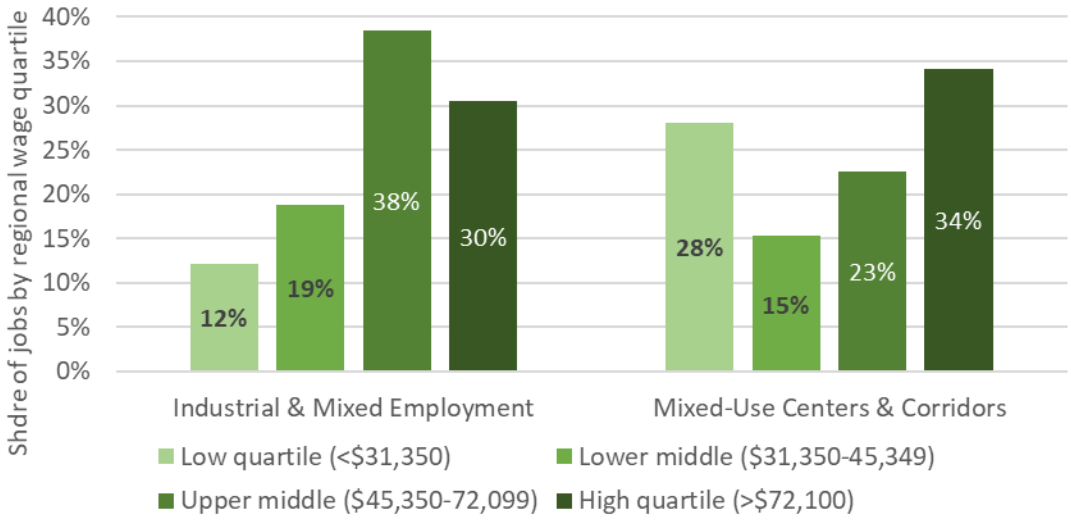
- The primarily office jobs in the Central City and the campus institutional jobs employ more high-wage workers in fields that typically require bachelor's degrees or higher.
- Neighborhood commercial corridors employ primarily low-wage service workers in consumer service, retail, and similar jobs.
- The industrial and mixed-employment ('back office') areas provide primarily middle-wage jobs.

Figure 47. Wage distribution of employment geographies by MSA wage quartiles, 2019



Source: BPS from QCEW and OEWS data

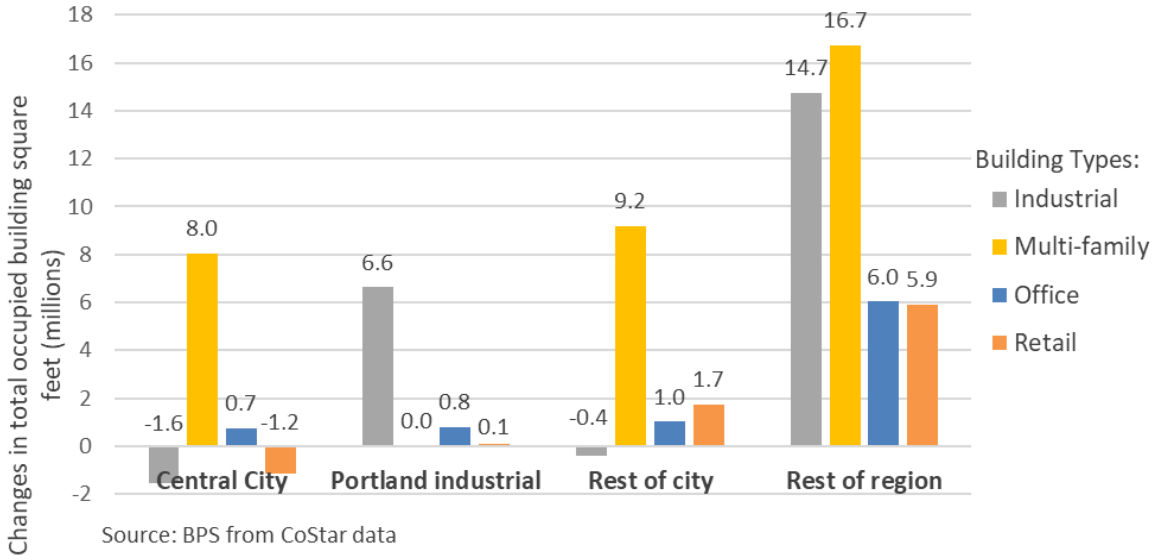
Figure 48. Wage distribution of jobs in mixed-use centers and corridors, 2019



Source: BPS from QCEW and OEWS data

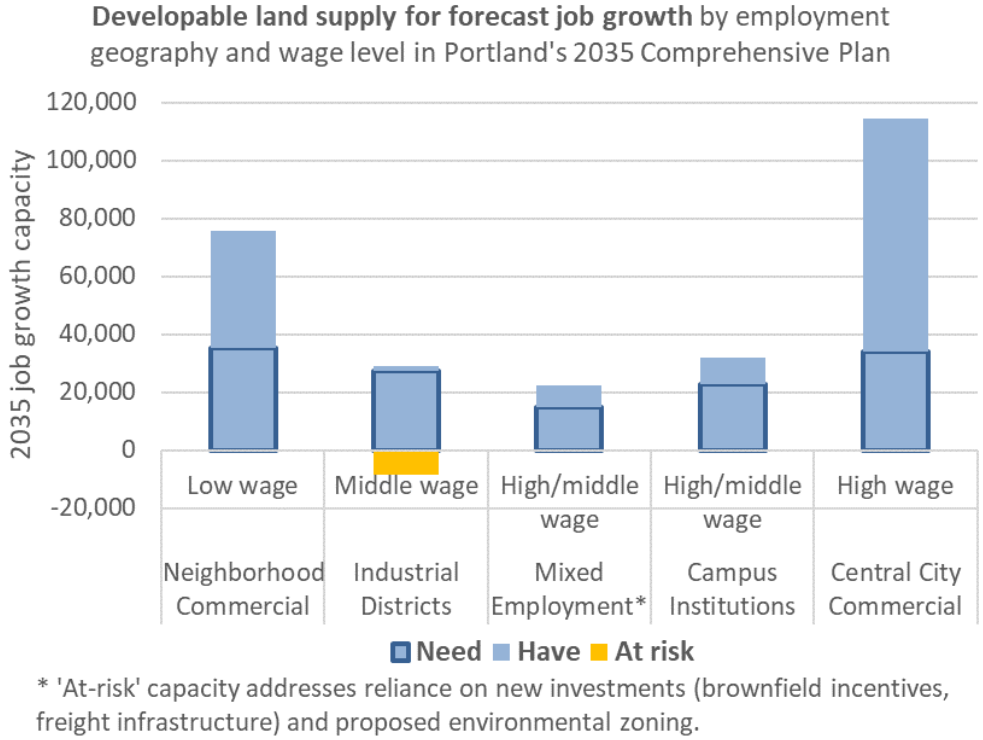
A second way that compact development policies increase wage-polarized job growth is that concentrated growth through redevelopment at higher density has caused major displacement of lower density industrial building space and associated middle-wage jobs in the Central City and other commercial zones, as shown in Figure 16 below (from Section 5 of EOA Volume 1). Growth through redevelopment is meeting employment land demand incompletely and has disproportionate equity costs through middle-wage job displacement in close-in locations.

Figure 16. Regional growth trends in total occupied building space by type and geography, 2008-2019



A third way that land-use policy choices increase wage-polarized growth is in providing less room to grow middle wage jobs. Market opportunities to expand middle-wage job growth have been constrained by the tighter planned growth capacity in Portland's industrial districts and larger impacts of regulatory costs on development feasibility (shown in the trend-based brownfield and environmental discount factors in the Buildable Land Inventory) in lower-density/lower-priced industrial and back-office land uses, as shown in Figure 49. The tighter real estate market for industrial buildings in the

Figure 49. Job growth capacity and forecast demand by geography in 2035 Comprehensive Plan



region has increased industrial rents (see Section 5 of EOA Volume 1) faster than other building types, which makes the region less competitive for industrial development compared to other regions. In Portland, tighter industrial and mixed employment growth capacity is also an implicit policy choice of the 2035 Comprehensive Plan. Portland's industrial and back office growth capacity grows tighter in these districts.

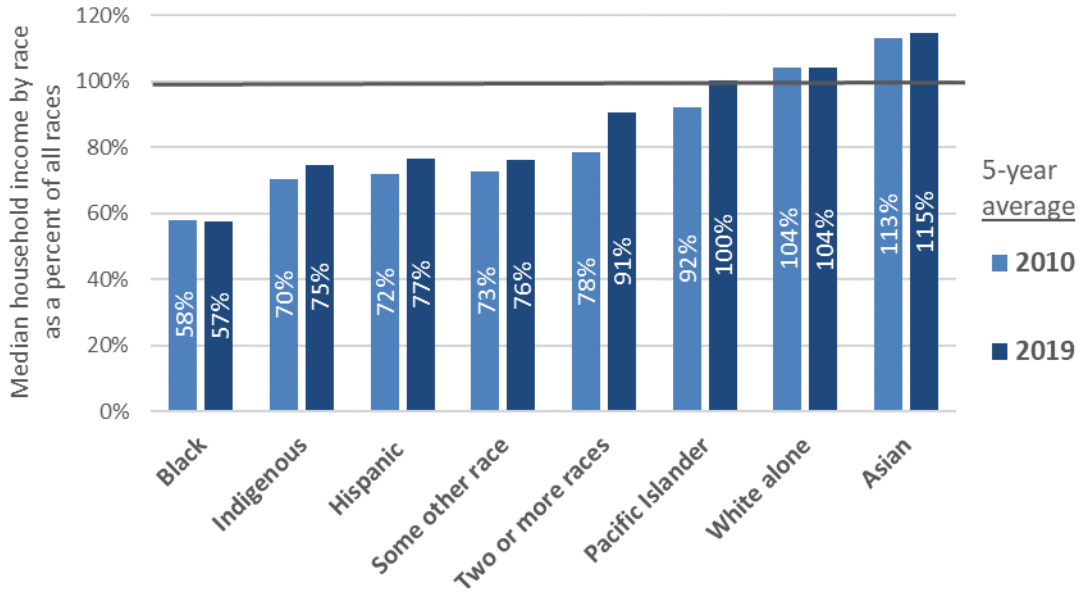
With tight or inadequate development capacity for industrial and back-office job growth, the default trend of focused development in higher-density, mixed-use districts will primarily accommodate wage-polarized job growth. Other regional factors can also constrain middle-wage job growth through limited access to business resources, such as career and technical education and training, reliable freight infrastructure to accommodate increasing volumes, competitive regulatory and fee environment, and economic development resources that leverage middle-wage private investment.

BIPOC income disparities are widening, moderated by industrial and office job growth

Racial income disparities are persistent inequities of the national economy, explained by a variety of socioeconomic factors that have been widely researched. The impact of labor markets on racial income disparities is the focus of analysis in this report. For example, taking educational attainment into account, a national study of occupational segregation (Hamilton, Austin and Darity, 2011) found that black men are persistently overrepresented in low-wage jobs and underrepresented in high-wage jobs, concluding that discrimination in high-wage occupations has been a long-term attribute of the labor market. Figure 51 shows similar disparities of BIPOC underrepresentation in high-wage occupations in the Portland region. Longitudinal research of racial 'wealth' disparities also indicates that they are driven primarily by racial 'income' disparities (Cleveland Federal Reserve Bank, 2019), pointing out the importance of access to good paying jobs to broadly increase wealth.

Highlighting the impact of income-inequality trends on racial disparities, one recent study compared the effects of factors on the median family income ratio in Black and White families nationally (Manduca, 2018), which at 56% in 2016 has not improved since the 1968 Civil Rights Act. He found that the economy's increasing income inequality disproportionately burdens people of color and is negating other racial equity gains affecting income, including rising Black educational attainment. Similar explanations of racial income disparity point out that wage disparities declined substantially between Black and White men between 1940 and 1970, during a period known for racial segregation and explicit discrimination, while the wage gap flattened out after the 1970s and increased after 2000 with the economy's shrinking share of middle-wage jobs and unionization (Porter, 2021). The Portland region's income inequality trends and varying occupational profiles by race, as described below, are consistent with these national trends.

Figure 50. Widening racial disparities in median household income, 7-County Region

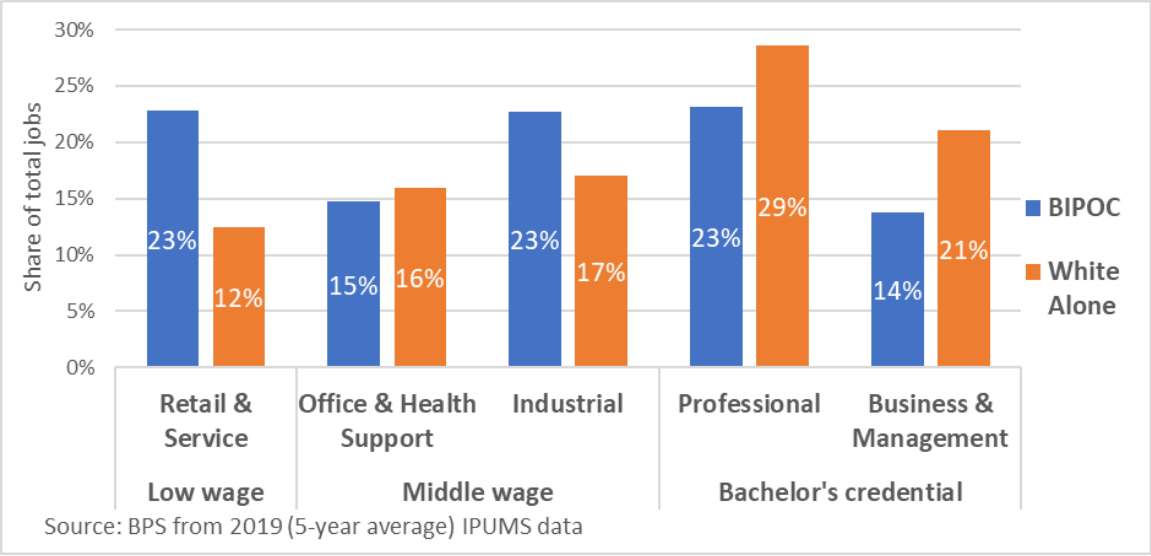


Source: BPS from ACS data. Estimated error rate exceeds 10% for Indigenous and Pacific Islander incomes.

The Portland region's racial income disparities shown in Figure 50 point out the economy's widely uneven economic opportunities by race. Among the region's widest disparities, median income in Black households was 57% of the all-races median in 2019 (5-year average), 75% in indigenous households, and 77% in Hispanic households.

Widening BIPOC income disparities are consistent with the region's occupational profile of BIPOC workers and the mix of jobs that are growing (see Figure 51). Job polarization trends result in a higher

Figure 51. Racial employment disparities by occupation and wage groups in the 7-County Region, 2019

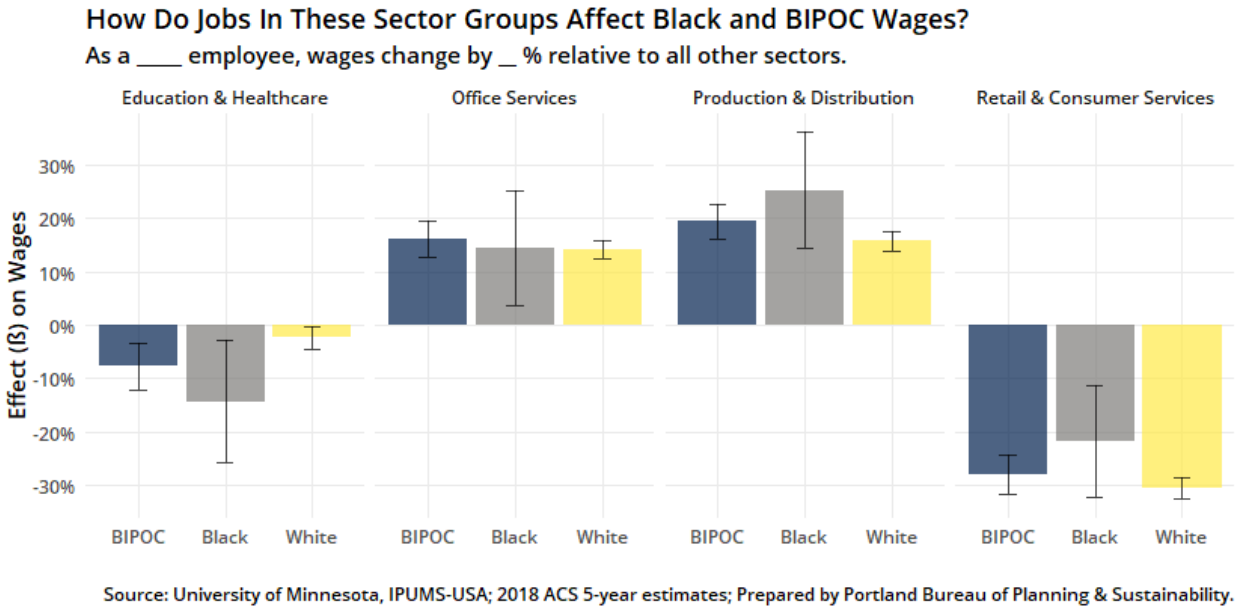


Source: BPS from 2019 (5-year average) IPUMS data

number of workers of color in the growing low-wage occupations and more white workers in the growing high-wage occupations. Middle-wage jobs are more racially balanced, and among them, industrial jobs particularly reduce racial disparities. Only the industrial occupations among the region's middle- and high-wage occupation groups employ proportionally more workers of color than white workers.

What types of job growth increase BIPOC incomes? Figure 52 shows that industrial and office jobs increase Black and BIPOC incomes relative to other job types. Industrial jobs also raise White incomes, but their larger effect is in raising Black and BIPOC incomes. Specifically, regional job growth in the industrial sectors (production and distribution) raises BIPOC income by 20% and Black incomes by 25% relative to all other sectors in 2018, and office jobs raise BIPOC incomes by 16%. In contrast, job growth in retail and consumer services reduces BIPOC incomes by 28% relative to all other sectors, and healthcare and education jobs reduce BIPOC incomes by 8%. Portland's faster rates of job growth in healthcare, education, and hospitality (particularly food service) are reducing Black and BIPOC incomes overall relative to job growth in the rest of the economy.

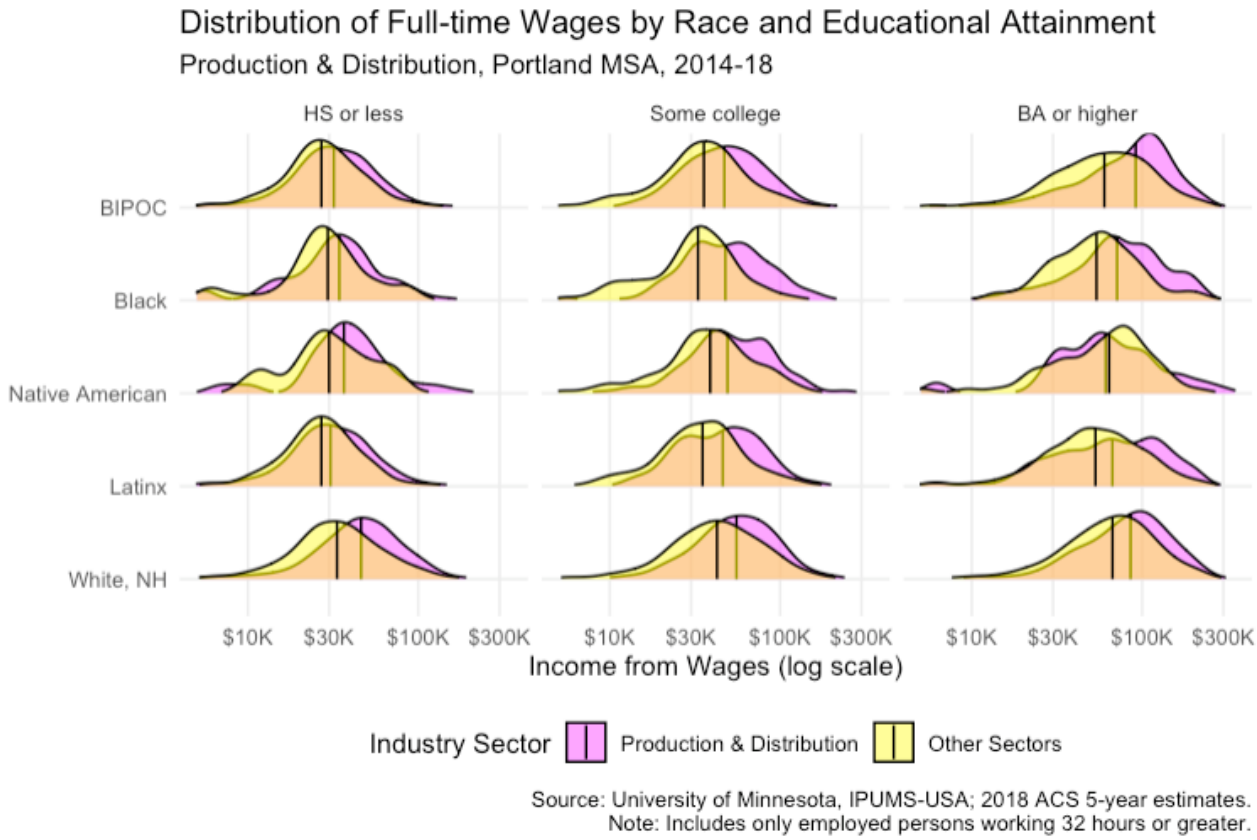
Figure 52. Industrial and office jobs raise BIPOC incomes, 7-County Region



Delving deeper, the income benefit of jobs that raise BIPOC incomes vary by race and education level. The analysis in Figure 52 is based on a detailed comparison of regional employment distribution by wage income, race, education, and sector types. The version of that analysis for industrial sectors is shown in Figure 53. The BIPOC income advantages of industrial jobs primarily benefit workers with some college or less, but Figure 53 shows that industrial jobs also substantially raise incomes of workers with bachelor's degrees or higher relative to other sectors. To read this chart, the area of colors on the right that don't overlap represent more jobs that pay higher wages. The vertical lines in the charts are medians, so medians on the right also indicate more jobs that pay higher wages. Charts like Figure 53 for the office, institutional, and consumer service sectors, along with transportation and warehousing specifically, are included in Appendix 1 (Figures 66-69).

Caution is warranted in relying on the low sample sizes of regional PUMS or ACS data by race and occupation or industry, but it is the only current employment data available by race and ethnicity for the regional labor market. We attempted to interpret the statistical reliability of these estimates and only publish those we have reasonable confidence in. However, due to small sample sizes in some race categories, care should be taken to ensure statistical significance using margins of error.

Figure 53. Wage benefits of industrial jobs by race and educational attainment, 7-County Region

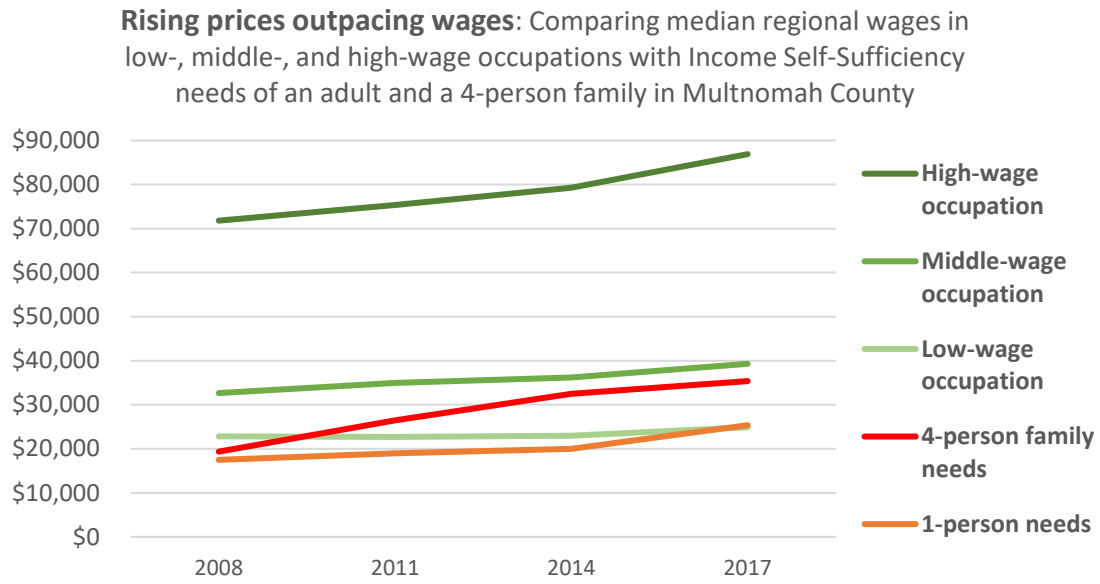


Local income self-sufficiency is declining, as rising prices outpace wages

The hardship of increasing income inequality is widely felt in the declining share of income self-sufficiency among households across the region. Income self-sufficiency is declining largely because the rising local cost-of-living is outpacing the relatively flat wages of low- and middle-wage workers, as shown in Figures 54 and 55. These charts measure local cost of-living trends by the Income Self-Sufficiency Standard (ISS), which calculates the cost of basic needs by family type at county-level prices. In contrast to the federal measures of 'poverty' in Census data by food budgets and 'low-income' in HUD housing subsidies by housing budgets, 'income self-sufficiency' is a more comprehensive measure, analyzing a full range of basic needs, diverse family types, and local prices. ISS data aims to track changes in the cost of living for people who barely make ends meet, something like a working-class inflation rate, in contrast to broader inflation measures that measure all consumer spending.

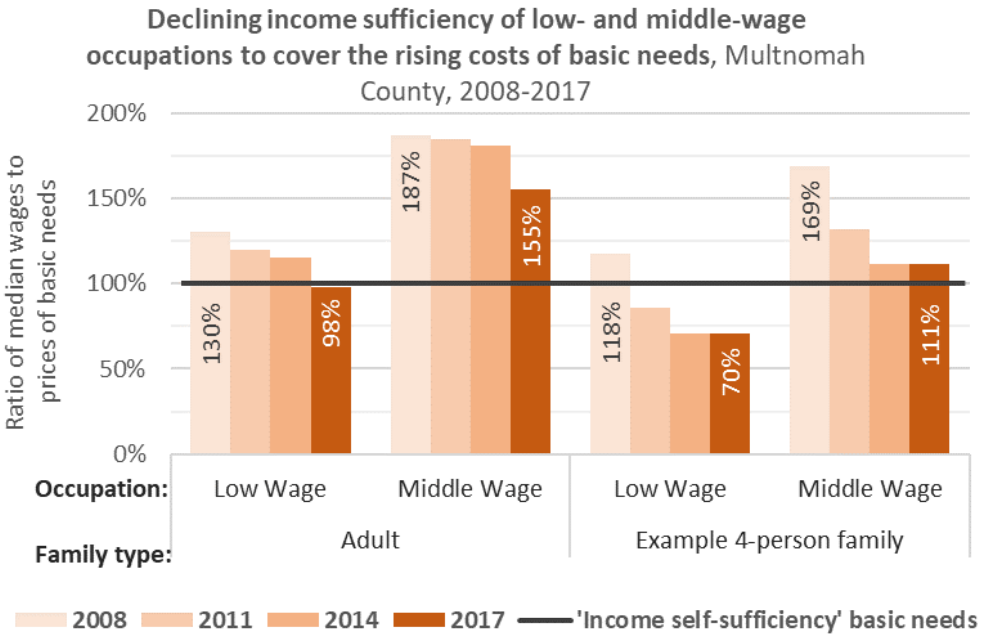
Median regional wages are compared to the rising cost-of-living trends for basic needs in Multnomah County during the last business cycle in Figures 54 and 55. In Multnomah County, ISS estimates of prices for housing, childcare, transportation, healthcare, miscellaneous household needs, and taxes all grew faster between 2008 and 2017 than the regional median wages of low- and middle-wage occupations.

Figure 54. Median-wage and cost-of-living trends, 2008-2017



Source: BPS from OES and ISS data (Pearce). Nominal $ (not inflation adjusted). Example 4-person family: 2 working adults, preschooler and school-age child.

Figure 55. Declining real income of low- and middle-wage workers, 2008-2017



Source: BPS from OES and ISS data (Pearce). Nominal $ (not inflation adjusted) Example 4-person family: 2 working adults, preschooler and school-age child.

Market impacts of increasing income inequality appears to be a major factor in declining local income self-sufficiency: the declining share of middle-wage jobs puts downward market pressure on wages for non-college workers, while concentrated local growth of high-wage jobs and high-income households puts upward pressure on local prices. Figure 54 also indicates that most workers in high-wage occupations are relatively insulated from the economy's rising ISS cost pressures. The region's J-shaped wage distribution of new jobs, combining concentrated high-wage job growth and stagnant middle-wage jobs, appears to be making low- and middle-wage workers poorer, as indicated by their declining local buying power (real income) in Figure 55. More growth of high-wage jobs is widely considered a positive outcome for local job growth, but the wage distribution of new jobs is arguably a more apt measure of inclusive prosperity that clarifies who benefits.

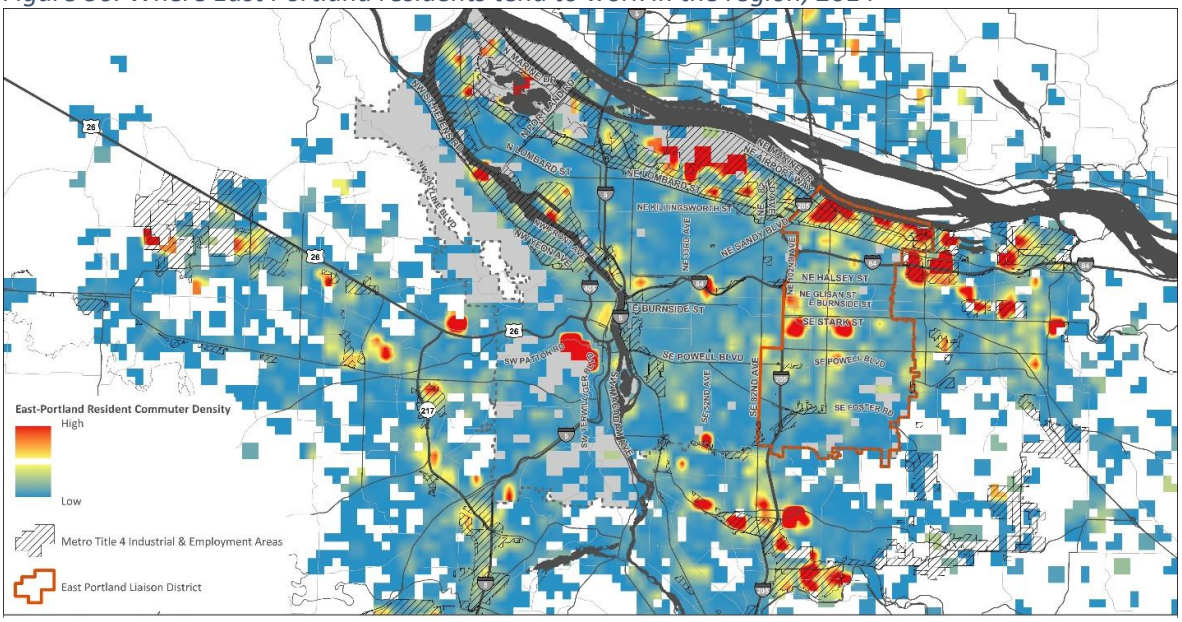
Thus, a larger share of the community is struggling financially. In Multnomah County, 34% of households were 'poor' in 2017, compared to 23% of households in 2008, measured by incomes that fall short of the Income Self-Sufficiency Standard. National research has similarly found downward wage mobility of non-college workers in large metropolitan area, called a diminishing 'urban wage premium,' reversing the historic trend that attracted the working class into large cities to get ahead (Autor, 2018).

Portland's working-class geographies

Portland's industrial districts and eastern neighborhoods have become unique working-class geographies in an increasingly higher-income city. These geographies provide economic equity advantages benefiting communities of color and working-class communities. The industrial districts are the city's largest source of jobs in middle-wage occupations that require less or no college. The East Portland neighborhoods have the largest shares of low- and moderate-income households. Laborshed analysis shows the mutual benefit and interdependence of these geographies as sources of workers and jobs. 'Working class' here refers loosely to people who rely on jobs that don't require bachelor's degrees. These geographies are approximated by Portland's major industrial districts and East Portland.

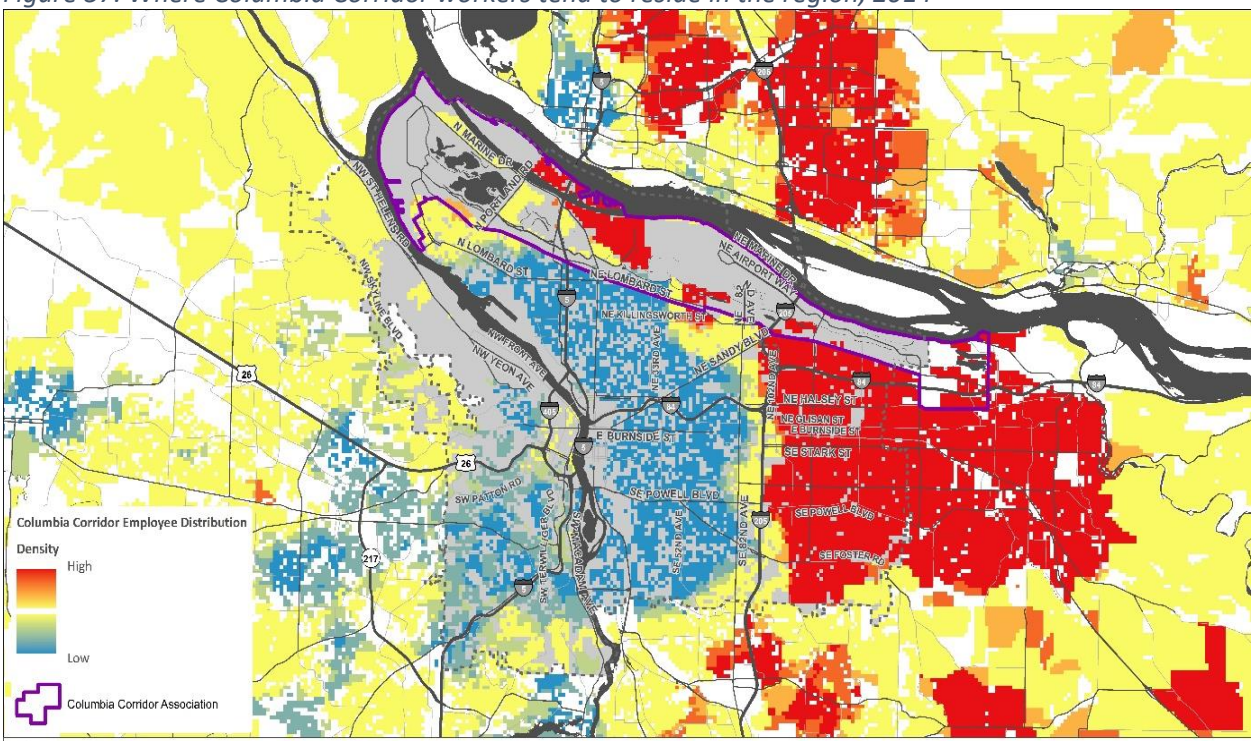
Working class laborshed benefits of middle-wage jobs – Portland's more economically vulnerable, racially diverse neighborhoods are concentrated in East Portland (see Figure 71 map in Appendix 1), as identified in updated Gentrification and Displacement Analysis citywide (BPS, 2018). The laborshed of East Portland (Figure 56), is a regional heat map showing where East Portland residents tend to work. Red areas show high concentrations of employment by East Portlanders, blue areas show relatively lower employment of East Portlanders, and yellow areas are neutral. The map shows that East Portlanders tend to work at higher concentrations in the region's industrial and 'mixed employment' (meaning generally back office and small industry) districts, which are shown by the cross-hatched areas in Figure 56, and hospitals. The nearby Columbia Corridor, Oregon's largest industrial district, stands out as providing the most significant employment benefits to East Portland neighborhoods. Most of the smaller, distributed concentrations correspond to the regional hospitals. As a regional job center, Portland's business districts generally serve the regional labor market, but individual neighborhoods benefit most from business districts across the region that match their workforce demographics, as shown in Figure 56. Working class neighborhoods benefit from industrial, back office, and hospital job growth.

Figure 56. Where East Portland residents tend to work in the region, 2014



Conversely, the residential laborshed of Columbia Corridor jobs is represented in Figure 57, which is a regional heat map showing where Columbia Corridor workers tend to reside. Columbia Corridor workers commute from working class neighborhoods around the region, including the nearby East Portland, Cully, and East Columbia neighborhoods. Varying neighborhood affordability appears to result in occupational segregation across the regional labor market, reflecting the lower commuter density of Columbia Corridor workers from Portland's inner and westside neighborhoods.

Figure 57. Where Columbia Corridor workers tend to reside in the region, 2014



Appendix 1

Economic equity charts

Figure 63. Employment and wages in occupations in less-/no-college occupations, 2019

Employment and wages in occupations that typically do not require bachelor's degrees, 7-County Region, 2019

	Total	Annual wage quartiles (OES)			Educational attainment (IPUMS)			Middle-wage jobs,	
	jobs, 2019	25th		75th	HS or	Some	Bachelor's	no bachelor's	
	(OES)	Percentile	Median	Percentile	less	college	or higher	Jobs	Share
Total, all occupations	**1,209,420**	**31,350**	**45,350**	**72,100**	**23%**	**32%**	**44%**		
Middle-wage occupations	**568,450**							**394,755**	**100%**
Industrial occupations	**273,770**							**240,870**	**61%**
Transportation	98,070	28,800	35,910	47,210	49%	37%	13%	85,033	22%
Production	77,430	30,980	38,760	51,190	49%	38%	13%	67,225	17%
Construction	58,190	41,620	57,540	77,310	51%	39%	10%	52,367	13%
Installation & Repair	40,080	37,340	50,340	64,920	39%	51%	10%	36,245	9%
Office & health support	**294,680**							**153,884**	**39%**
Office Support	153,550	33,650	41,080	51,400	24%	46%	30%	106,886	27%
Healthcare Support	42,840	28,360	34,020	43,960	29%	53%	18%	35,145	9%
Protective Service	19,200	29,510	45,860	79,150	18%	44%	38%	11,853	3%
Low-wage occupations	**388,950**								
Sales	111,950	26,780	33,840	53,900	24%	37%	39%		
Retail Sales	54,890	25,355	27,822	32,061	32%	40%	28%		
Food Preparation	112,720	25,200	27,760	32,450	45%	38%	17%		
Building Maintenance	30,280	26,760	31,820	39,420	61%	31%	9%		
Personal Care	32,770	26,410	31,300	37,600	32%	42%	26%		
Farming	3,830	25,680	29,330	36,370	80%	12%	8%		

Source: Employment from OES 2019 data. Education from IPUMS 2019 5-year average data.

Figure 65. Reliance on middle-wage, less-/no-college occupations by race, 7-County Region, 2019

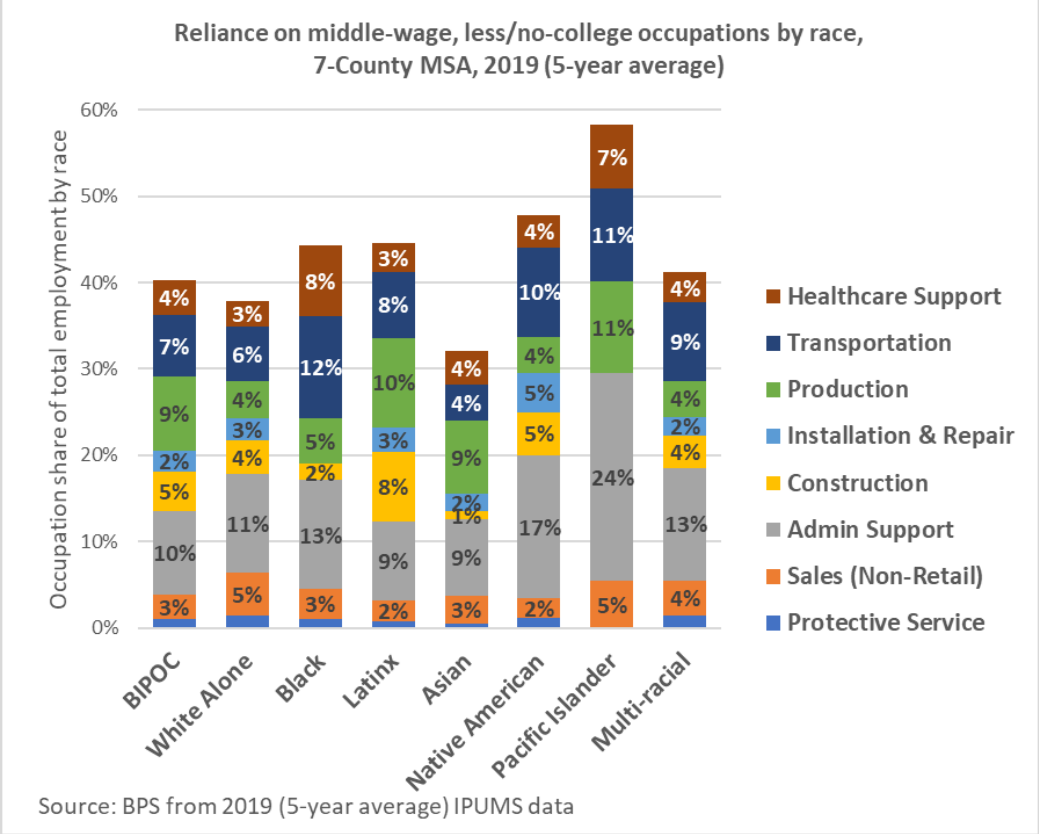


Figure 66. Wage impacts of office jobs by race and educational attainment

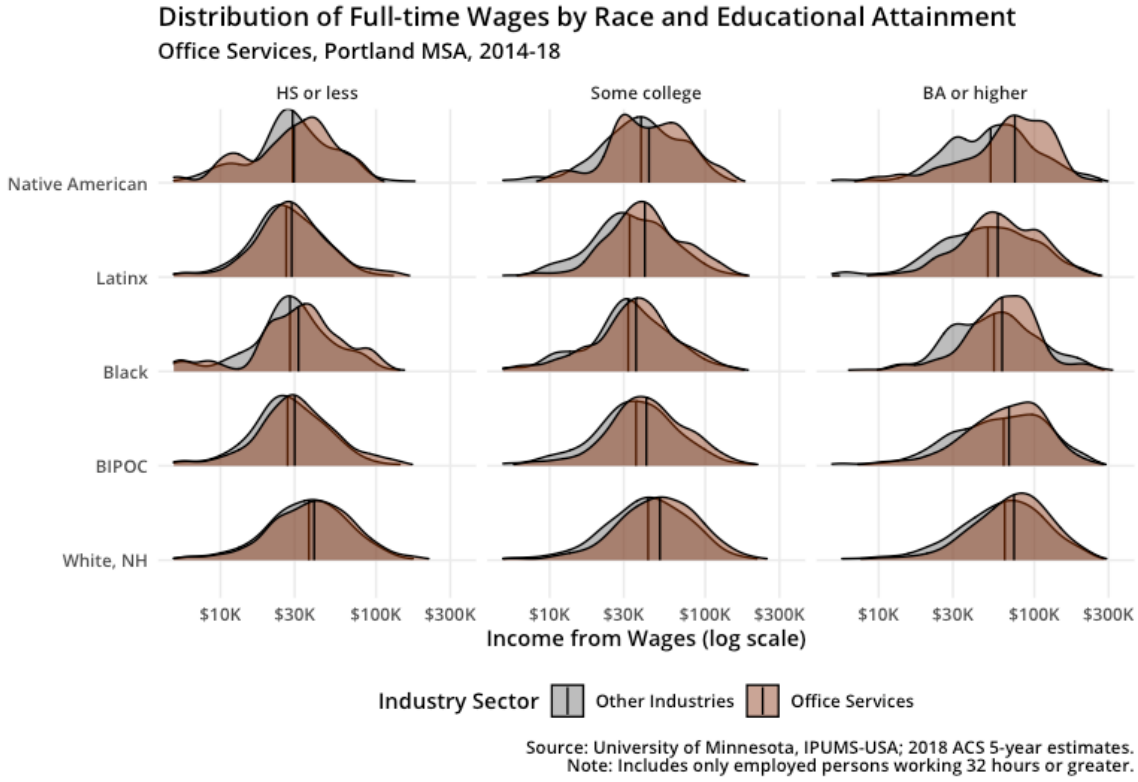


Figure 67. Wage impacts of education and healthcare jobs by race and educational attainment

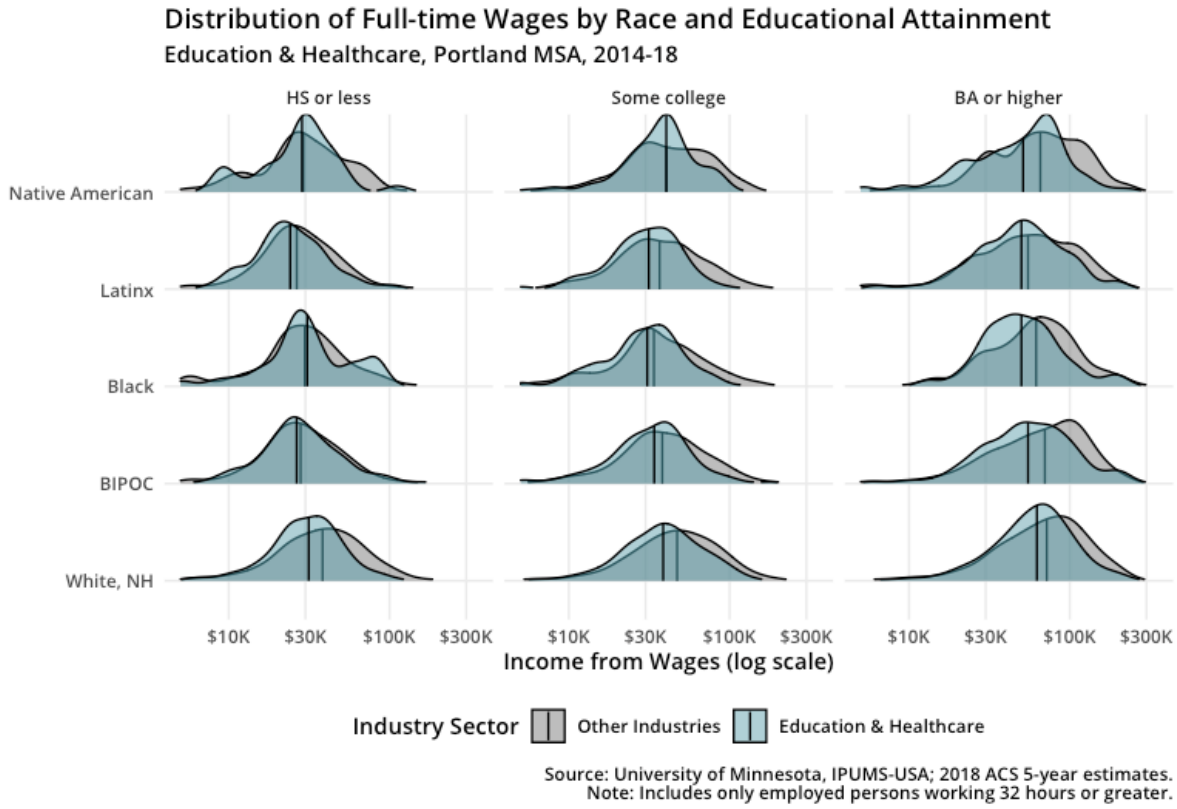


Figure 68. Wage impacts of retail and consumer service jobs by race and educational attainment

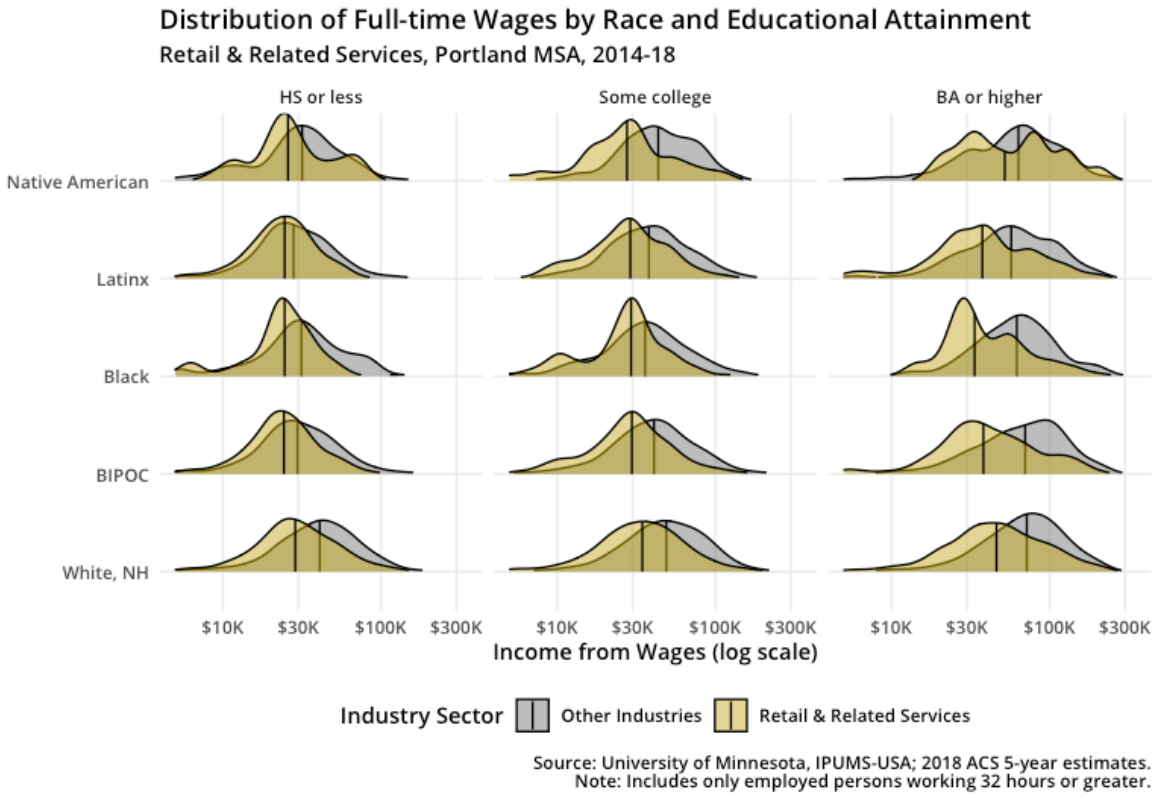


Figure 69. Wage impacts of transportation and warehousing jobs by race and educational attainment

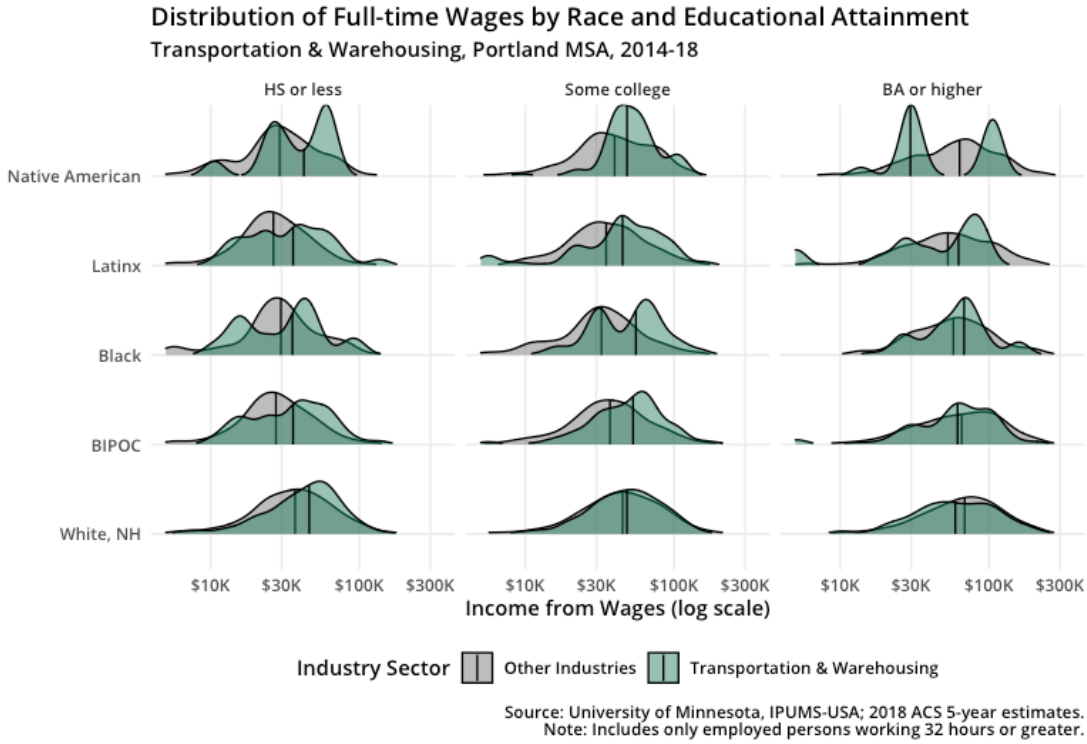


Figure 70. Gentrification typology and risk assessment, 2018

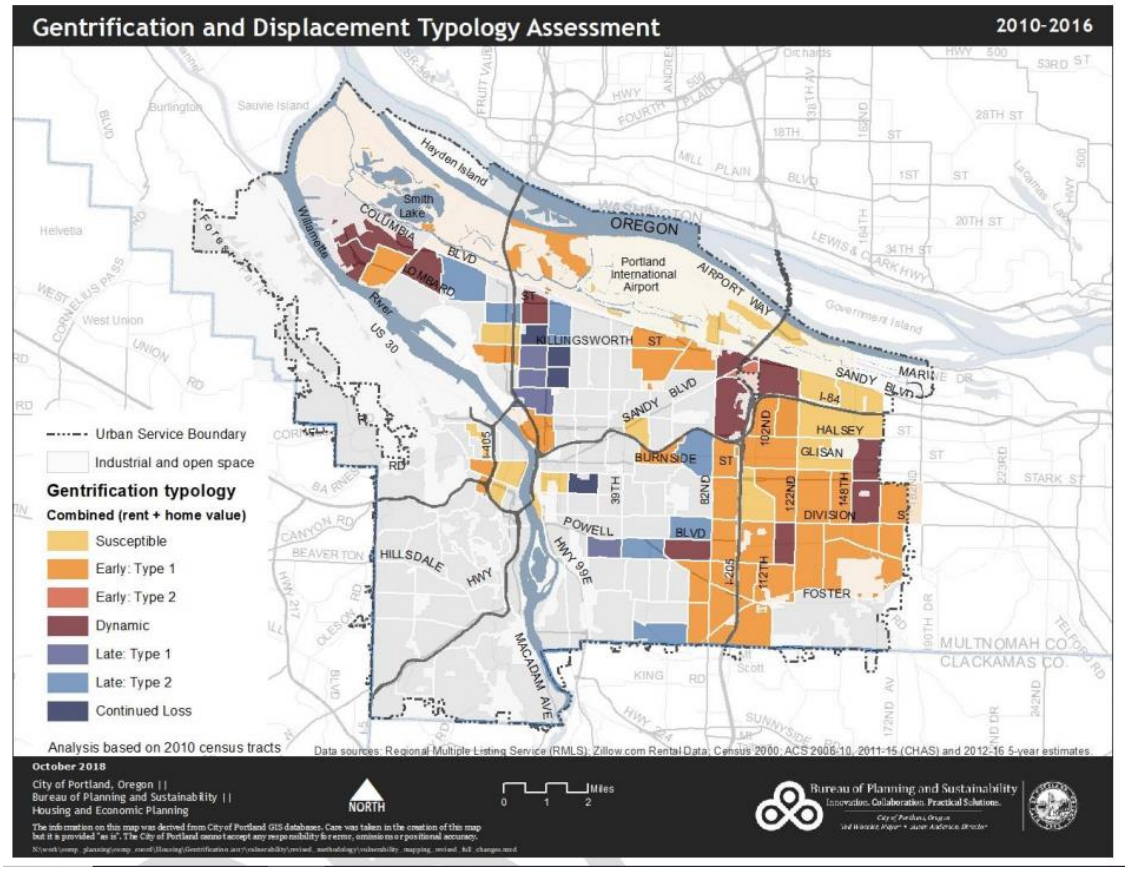


Figure 71. Economically vulnerable communities assessment, 2018