

APPENDIX 4: EMPLOYMENT TRENDS

Introduction

This Appendix provides additional understanding of employment trends within the Metro region in recent years. The material includes information about overall employment levels, employment by sector, and occupation and wage trends at the regional level. Cities within the Metro planning area provide their own city-level numbers and analyses so this Appendix reports only regional-level data.

Overall employment

Tri-county employment has been growing steadily since the economy bottomed out in 2010. The region added 161,000 jobs from 2010 to 2017, with annual growth ranging from 2.3% to 3.4% over the last seven years. Total employment is now 12.1% higher than the pre-recession peak in 2007. Accordingly, unemployment in the three counties has been steadily declining. After peaking around 10% in 2009, the unemployment rate has now fallen below 4% (2018 Q1).

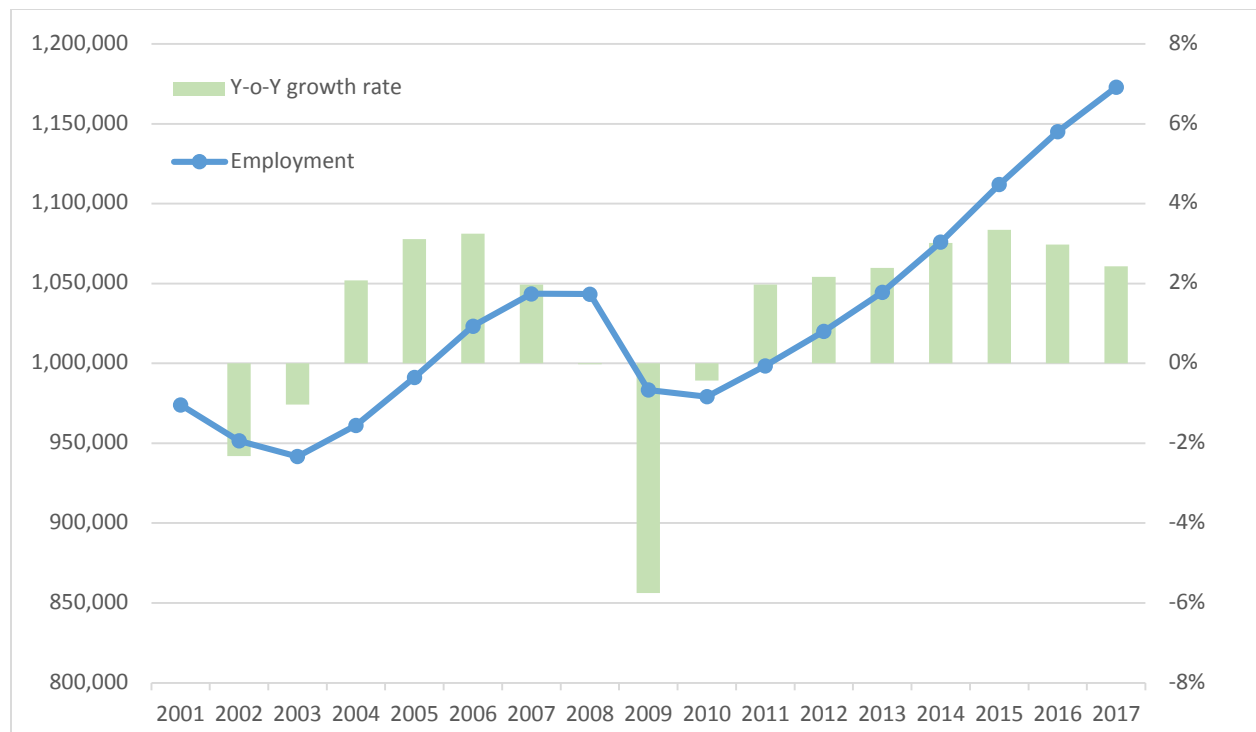


Figure 1: Three county employment and year-over-year growth rates 2001 to 2017 (CES, accessed April 2018)

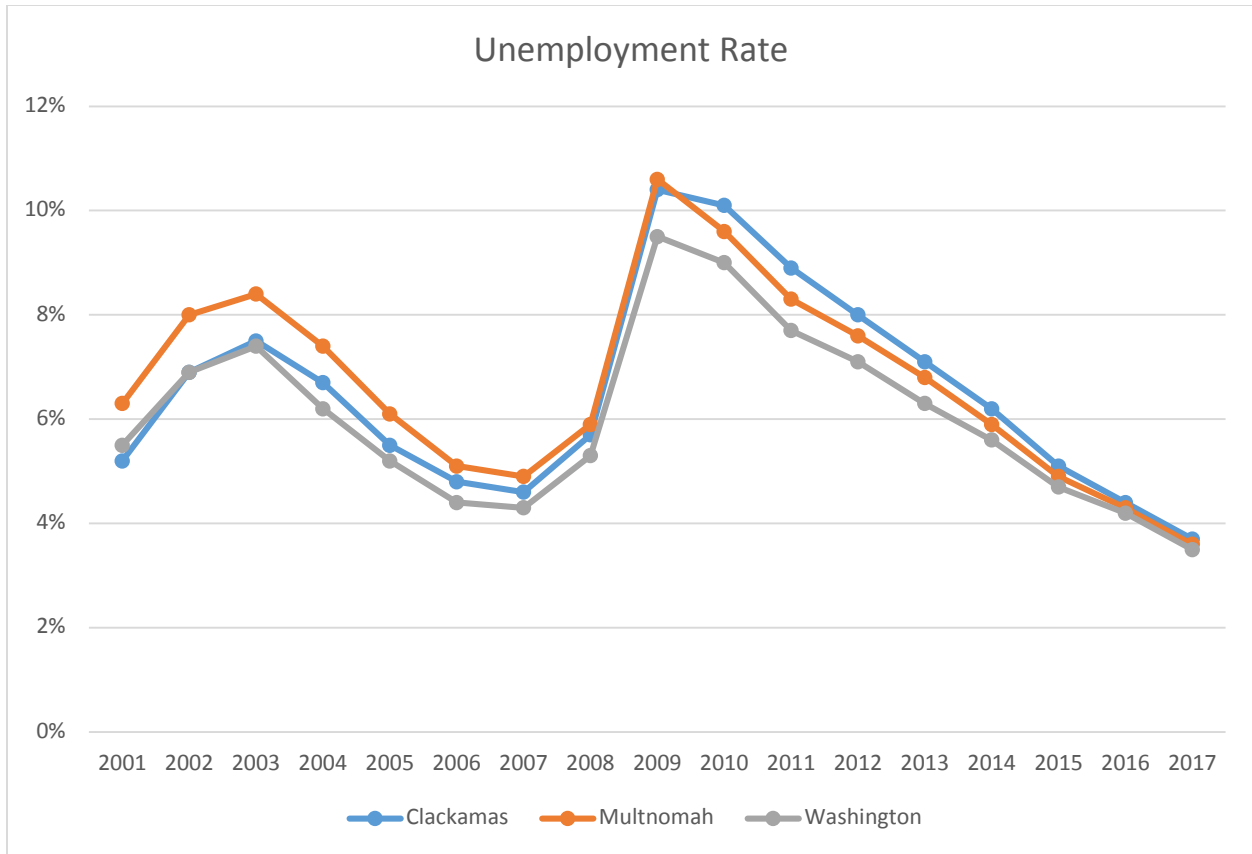


Figure 2: Three county unemployment rate 2001 to 2017 (LAUS, accessed April 2018)

Employment by market subarea

The market subareas across the Metro region have all seen employment increase since 2007. The strongest growth occurred within the central business district, which saw employment growth of 18.4% from 2007 to 2016. The central city subarea is defined here to include neighborhoods on both sides of the Willamette River. Inner north and east Portland, the outer west side, and the outer I-5 subareas also saw strong growth in the range of 15.3% to 16.4% growth. Outer Clackamas saw the weakest growth over this time period, with employment increasing by about 6.1% over nine years. The inner I-5 subarea saw significant employment losses and office vacancies during the recession, as many real estate-related businesses contracted during the housing crash. The most recent employment data suggest a strong comeback in this area over the last several years.

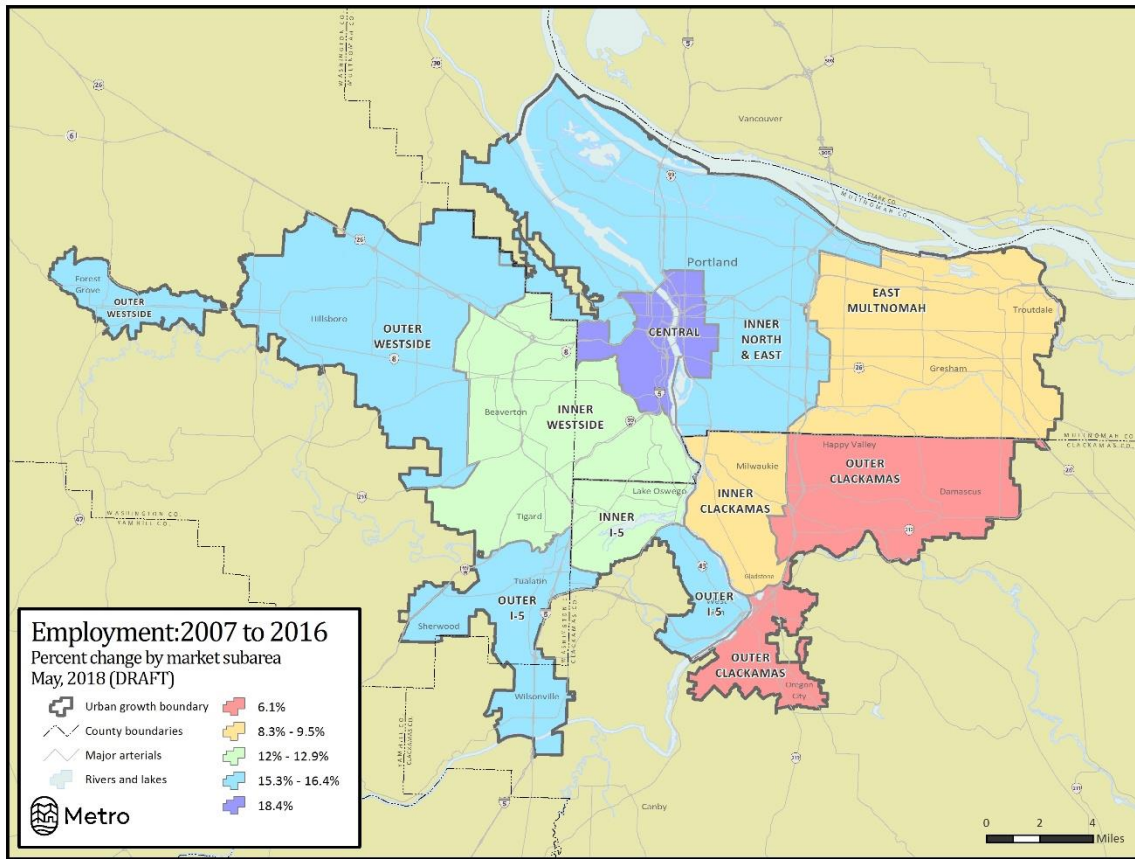


Figure 3: Employment changes by subarea within the Metro UGB 2007 to 2016 (QCEW, confidential data not publicly available)

Employment by industry

Overview

Prior to the recession, employment peaked in 2007 at 1.043 million jobs in the Portland-Vancouver-Hillsboro MSA (comprised of Clackamas, Columbia, Multnomah, Washington and Yamhill counties in Oregon, and Clark and Skamania counties in Washington). The region lost more than 64,000 jobs from 2007 to the depth of the recession in 2010. Some industries were hit much harder by job losses than others, particularly construction (NAICS 23)¹ and manufacturing (NAICS 31-33), while job growth since 2010 has also varied substantially across the regional economy. Construction jobs fell 31% from 2007 to 2010 as the housing market crashed and new residential development ground to a halt. The industry made a strong comeback from 2010 to 2017, adding 21,000 jobs, but this was just enough to return to pre-recession peak employment levels. Transportation, warehousing and utilities (NAICS 22, 48-49), manufacturing (NAICS 31-33), wholesale trade (NAICS 42), and financial activities (NAICS 51) all saw significant job losses during the recession and moderate increases during the recovery. Professional and

¹ Metro uses data that classifies jobs by the North American Industry Classification System (NAICS)

business service (NAICS 54-56) and leisure and hospitality (NAICS 71-72) jobs rebounded strongly after moderate job losses during the recession. The anomaly during the economic turmoil was private health and education (NAICS 61, 62), which continued to grow through the recession and beyond, increasing 10% from 2007 to 2010 and another 19% from 2010 to 2017.

The combined effect of the patterns of job losses and gains through the recession and beyond has been a shift in the regional employment mix toward a smaller share of goods-producing jobs and a larger share of service-providing jobs. This shift is consistent with the decline in the share of production jobs that has been ongoing for decades across the U.S. economy. In the Portland region in 2007, goods-producing jobs, including extractive industries, construction and manufacturing, represented about 18.6% of the region’s employment. That share fell to 15.7% in 2010 and has held steady around 16.2% for the last five years.

Table 1: Employment in the Portland-Vancouver-Hillsboro MSA 2007, 2010, and 2017 (CES, accessed May 2018)

NAICS	Industry	2007	2010	2017
11, 21	Mining and logging	1,600	1,100	1,300
23	Construction	66,000	45,600	66,900
31-33	Manufacturing	126,100	107,100	123,200
42	Wholesale trade	55,700	50,100	57,300
44-45	Retail trade	110,500	102,000	118,900
22, 48-49	Transportation, warehousing, and utilities	37,900	33,400	39,500
51	Information	25,000	22,700	25,700
52-53	Financial activities	70,700	62,200	70,300
54-56	Professional and business services	143,600	136,100	180,600
61-62	Education and health services	129,400	142,400	169,300
71-72	Leisure and hospitality	98,100	94,600	122,100
81	Other services	36,700	34,800	41,500
	Government	142,300	147,400	156,200
	Total nonfarm employment	1,043,600	979,200	1,172,900

Table 2: Employment change in the Portland-Vancouver-Hillsboro MSA during and after the recession (CES, accessed May 2018)

NAICS	Industry	2007-2010	2010-2017	2007-2017
11, 21	Mining and logging	-500	200	-300
23	Construction	-20,400	21,300	900
31-33	Manufacturing	-19,000	16,100	-2,900
42	Wholesale trade	-5,600	7,200	1,600
44-45	Retail trade	-8,500	16,900	8,400
22, 48-49	Transportation, warehousing, and utilities	-4,500	6,100	1,600
51	Information	-2,300	3,000	700
52-53	Financial activities	-8,500	8,100	-400
54-56	Professional and business services	-7,500	44,500	37,000
61-62	Education and health services	13,000	26,900	39,900
71-72	Leisure and hospitality	-3,500	27,500	24,000
81	Other services	-1,900	6,700	4,800
	Government	5,100	8,800	13,900
	Total nonfarm employment	-64,400	193,700	129,300

Table 3: Percent change in employment in the Portland-Vancouver-Hillsboro MSA during and after the recession (CES, accessed May 2018)

NAICS	Industry	2007-2010	2010-2017	2007-2017
11, 21	Mining and logging	-31.3%	18.2%	-18.8%
23	Construction	-30.9%	46.7%	1.4%
31-33	Manufacturing	-15.1%	15.0%	-2.3%
42	Wholesale trade	-10.1%	14.4%	2.9%
44-45	Retail trade	-7.7%	16.6%	7.6%
22, 48-49	Transportation, warehousing, and utilities	-11.9%	18.3%	4.2%
51	Information	-9.2%	13.2%	2.8%
52-53	Financial activities	-12.0%	13.0%	-0.6%
54-56	Professional and business services	-5.2%	32.7%	25.8%
61-62	Education and health services	10.0%	18.9%	30.8%
71-72	Leisure and hospitality	-3.6%	29.1%	24.5%
81	Other services	-5.2%	19.3%	13.1%
	Government	3.6%	6.0%	9.8%
	Total nonfarm employment	-6.2%	19.8%	12.4%

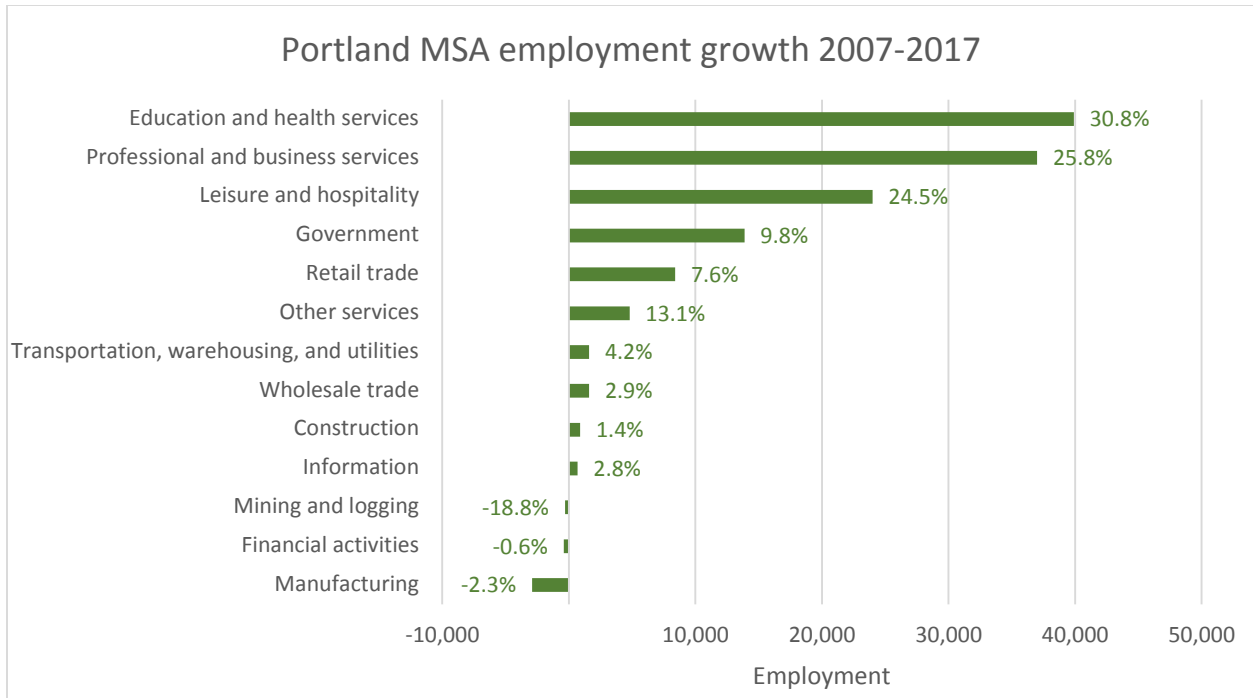


Figure 4: Ten year employment change in the Portland-Vancouver-Hillsboro MSA from 2007 to 2017 (CES, accessed May 2018)

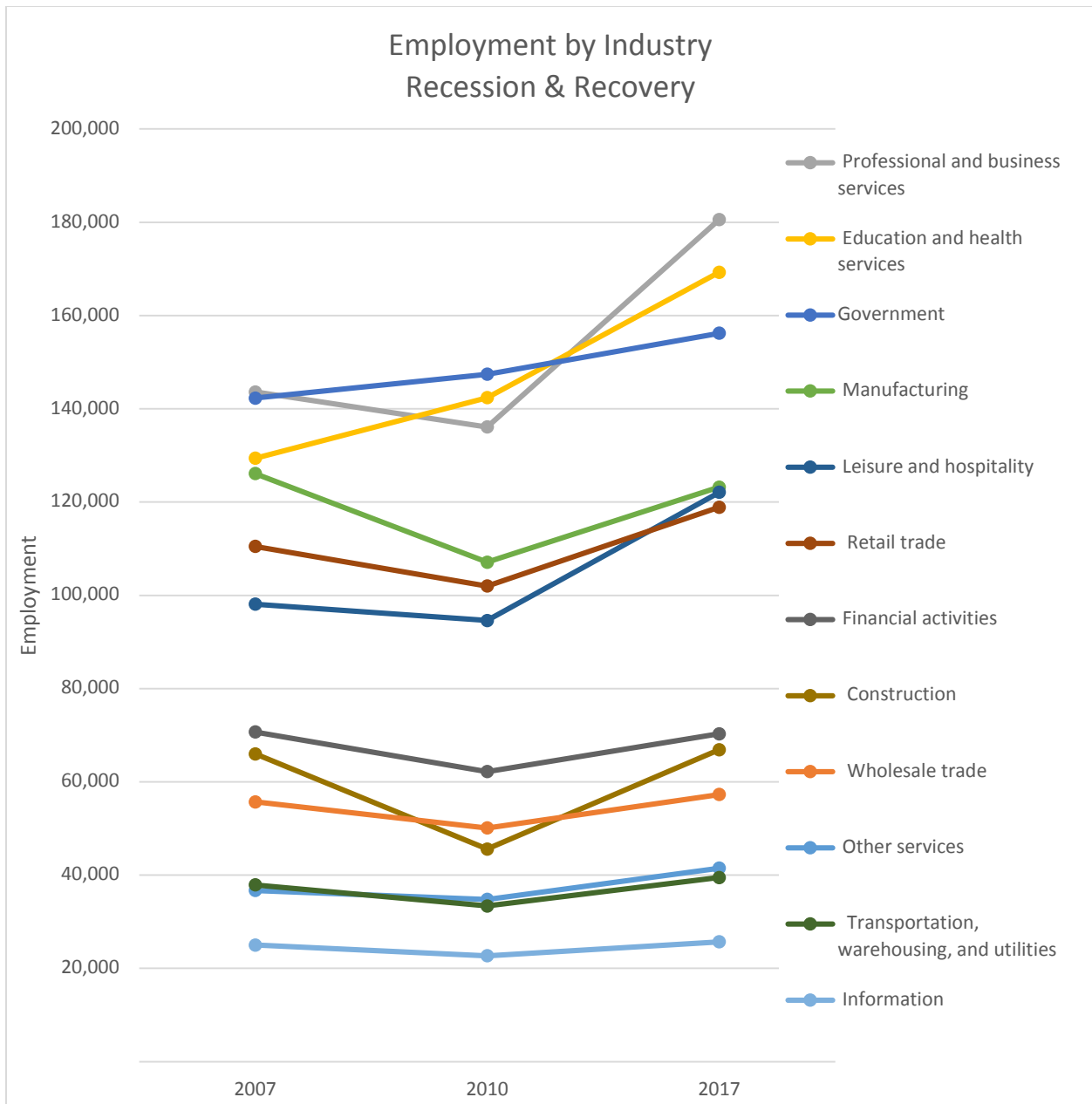


Figure 5: Changing industry mix in the Portland-Vancouver-Hillsboro MSA 2007, 2010, and 2017 (CES, accessed May 2018)

A closer look at retail

The rise of online shopping is changing the way that consumers purchase a variety of product types. E-commerce now represents about 9% of retail sales nationally, and online sales are increasing much faster than retail sales overall. These changes in purchasing habits will have an impact on the number and types of jobs the industry employs as well as the locations and building types that support the activity of providing goods to customers.

The following statistics show employment in the retail industry over the last ten years, plus two additional NAICS codes related to product warehousing and delivery. The “nonstore retailers” category

(NAICS 454) includes catalog and internet-based businesses that fulfill orders by mail as well as vending machine operators and other nonstore vendors; about 58% of sales in the nonstore category are due to e-commerce. These businesses sell a variety of products, from clothing and books to furniture and computers. Employment in nonstore retailers increased by nearly 27% from 2007 to 2017. Shipping and delivery employers grew by 31% over the same period, while warehousing employment grew nearly 9%.

Table 4: Retail employment by NAICS in the Oregon portion of the Portland-Vancouver-Hillsboro MSA 2007 and 2017 (QCEW, accessed April 2018)

NAICS	Industry	2007	2017	Change	Percent change
44-45	Retail	93,266	100,183	6,917	7.4%
442	Furniture and home furnishings stores	4,466	3,758	- 708	-15.9%
451	Sporting goods/hobby/book/music stores	5,617	5,184	- 433	-7.7%
448	Clothing and clothing accessories stores	10,783	10,067	- 716	-6.6%
447	Gasoline stations	3,856	3,749	- 107	-2.8%
444	Building material & garden supply stores	6,920	6,912	- 8	-0.1%
441	Motor vehicle and parts dealers	12,405	12,404	- 1	0.0%
443	Electronics and appliance stores	3,730	3,772	42	1.1%
446	Health and personal care stores	4,146	4,359	213	5.1%
452	General merchandise stores	16,202	18,672	2,470	15.2%
445	Food and beverage stores	16,942	20,118	3,176	18.7%
454	Nonstore retailers	2,663	3,372	709	26.6%
453	Miscellaneous store retailers	5,538	7,816	2,278	41.1%
492	Couriers and messengers	4,577	6,005	1,428	31.2%
493	Warehousing and storage	3,930	4,275	345	8.8%

The rise of e-commerce has had an uneven impact on the retail industry so far. National sales data suggest that nonstore retailers are squeezing traditional store outlets that primarily sell furniture (NAICS 442), electronics (NAICS 443), clothing (NAICS 448), and sporting goods, hobby supplies, books and music (NAICS 451). Some of these impacts can be seen in the region's jobs numbers, with declining employment over the last ten years in three of these store types. However some other retail types have shown strong growth in recent years, including grocery stores (NAICS 445), general merchandise stores (NAICS 452), and miscellaneous specialty retailers (NAICS 453). It remains to be seen whether e-commerce will have a significant impact in these product spaces in the future.

Large online retailers are increasingly developing smaller warehouses and fulfillment centers throughout the country so that they can deliver products to their customers quickly, wherever they are. Amazon recently opened a package sorting facility in Hillsboro and will be opening fulfillment centers in industrial parks in Troutdale and Portland in 2018. At this point, it is unclear what the implications will be of the shift from brick-and-mortar stores to e-commerce fulfillment centers for employment, wages, traffic congestion, and other issues of local interest.

NAICS-based definitions do not capture the full story of e-commerce because many traditional retailers that classify themselves as something other than “nonstore retailers” are also doing an increasing share of their business online. For example, many grocery and general merchandise stores now offer online ordering with same-day pick-up in the store. If customers take advantage of these services in large numbers then the land use impacts of the shift toward e-commerce may be muted. On the other hand, if the trend toward online purchasing with home delivery continues, the retail industry may continue to shift toward larger regional warehouse and distribution centers in industrial areas and away from store fronts close to customers.

Wage polarization

Previous sections of this report described industry-level changes in employment since the recession, but the polarization of jobs into low and high wages is best examined at the occupational level. This section describes changes in occupational employment and wages in the Portland MSA from 2007 to 2017. The Oregon Office of Economic Analysis (OEA) has done more extensive analysis of occupational and wage trends at the state level for those interested in more details:

<https://oregoneconomicanalysis.files.wordpress.com/2013/10/oregon-job-polarization.pdf><https://oregoneconomicanalysis.com/2018/04/03/oregon-job-polarization-2017-update/>

Using 2007 median wage data, the 22 occupational categories reported in the Occupational Employment Statistics (OES) from BLS were divided into four wage categories. These are the same groupings used for the OEA analysis, though their bin breaks were defined using 2012 wage data. One noticeable difference from 2007 to 2017 is that wages for sales jobs, which include cashiers and other retail workers, fell by more than 10% in real terms. This places sales occupations more in line with low wage jobs than with lower-middle wage jobs in 2017. However, for comparability with prior analyses, this report maintains the definitions in the table below.

Table 5: Occupations by wage category in the Portland-Vancouver-Hillsboro MSA 2007 and 2017 (OES, accessed March 2018)

Wage category (2007\$)	Occupation	Median wage (nominal \$)		Change in real median wage	Change in employment
		2007	2017	2007 to 2017	2007 to 2017
Low (<\$25,000)	Food Preparation	\$19,350	\$24,340	4.8%	25.5%
	Personal Care	\$21,420	\$26,090	1.5%	82.4%
	Building Maintenance	\$22,260	\$29,050	8.8%	12.0%
	Farming	\$23,470	\$30,310	7.6%	39.1%
Lower Middle (\$25,000 - \$35,000)	Sales	\$28,160	\$30,370	-10.1%	4.8%
	Transportation	\$28,170	\$35,670	5.5%	-6.4%
	Healthcare Support	\$27,950	\$36,170	7.8%	20.7%
	Production	\$30,440	\$36,380	-0.4%	-12.7%
	Administrative Support	\$31,290	\$37,980	1.2%	-3.7%
Upper Middle (\$35,000 - \$45,000)	Protective Service	\$38,440	\$41,740	-9.5%	22.9%
	Community Service	\$37,050	\$46,920	5.5%	20.2%
	Installation and Repair	\$41,810	\$47,970	-4.4%	-0.1%
	Arts and Entertainment	\$41,740	\$50,670	1.2%	41.5%
	Education	\$42,810	\$51,920	1.1%	10.6%
	Construction	\$41,480	\$52,920	6.3%	-6.8%
High wage (> \$45,000)	Scientists, including Social	\$55,260	\$62,750	-5.4%	-22.5%
	Business and Finance	\$52,890	\$67,930	7.0%	34.0%
	Legal	\$66,460	\$77,490	-2.8%	27.1%
	Architects and Engineers	\$61,480	\$82,530	11.9%	28.7%
	Healthcare Practitioners	\$65,950	\$83,970	6.1%	26.0%
	Computer and Math	\$69,920	\$87,910	4.8%	52.9%
	Management	\$87,050	\$100,900	-3.4%	57.9%

Median annual wages in the region range from a low of around \$24,000 for food preparers to a high of about \$101,000 for managers across all industries. The chart below shows the median wage by occupation as well as the cumulative share of employment as the median wage increases. The chart shows for example, that about 54% of jobs in the region are in occupations that earn a median income of less than \$40,000. About 26% of jobs in the region are in occupations in the high income category, earning more than \$60,000 in 2017 dollars.

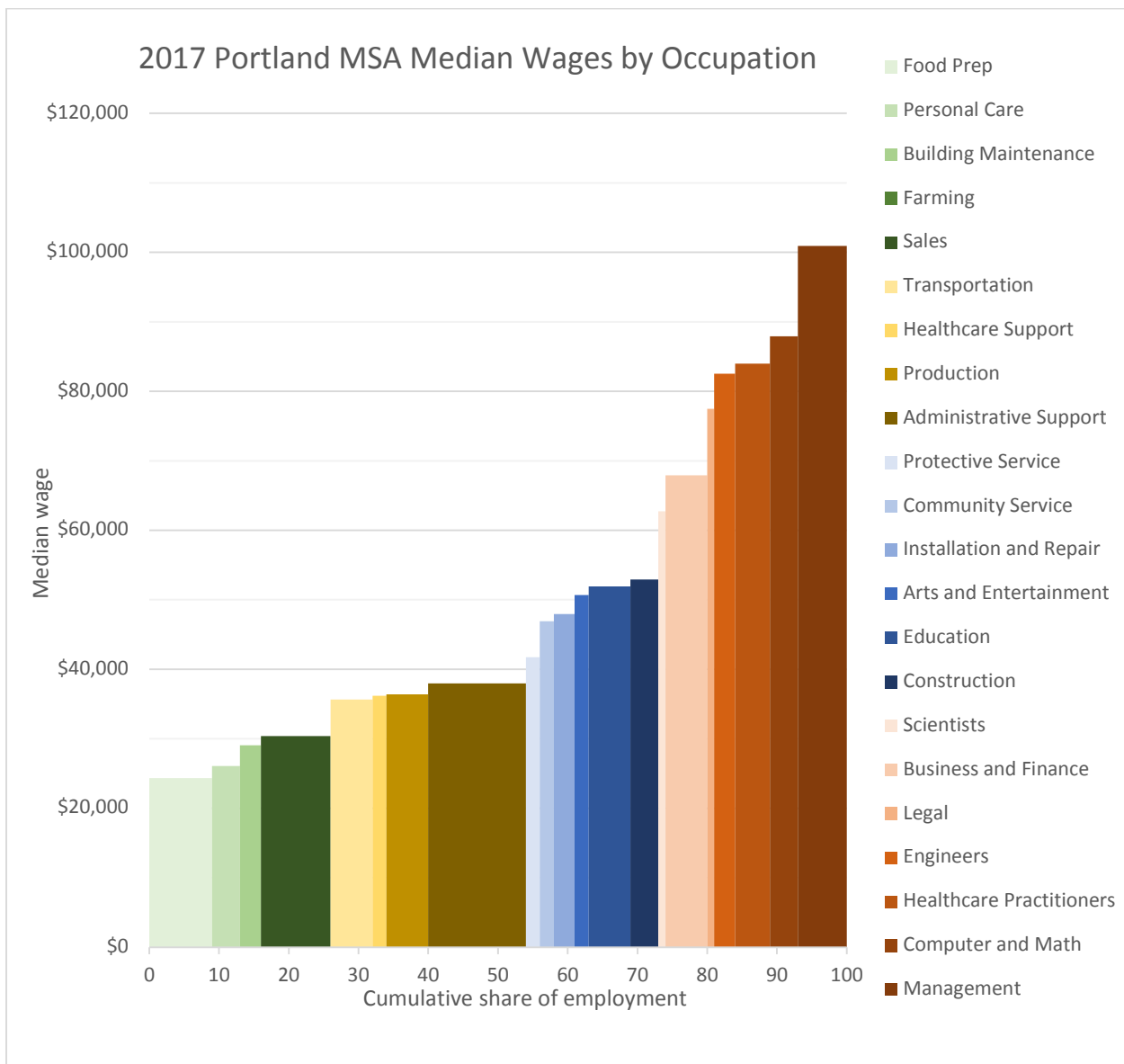


Figure 6. 2017 median wage and cumulative employment share by occupation in the Portland-Vancouver-Hillsboro MSA (OES, accessed March 2018)

Wage polarization has been a long term trend both locally and nationally and the recent recession only accelerated the shift toward more high and low wage jobs and fewer middle wage jobs. Middle wage occupations comprised nearly 65% of the jobs in the Portland MSA as of 2007, but that share declined to less than 58% by 2017. Middle wage occupations saw significant losses from 2007 to 2010 and were slow to recover once the economy turned around. Middle wage job growth has picked up in the last couple of years, and as of 2017 the region finally recovered the number of middle wage jobs that were lost during the recession. But low and high wage jobs have fared much better, both during and after the recession, leading to increasing wage polarization. The polarization trend is expected to continue in the future for the Portland region and the U.S. as a whole, in large part due to globalization and technological change.

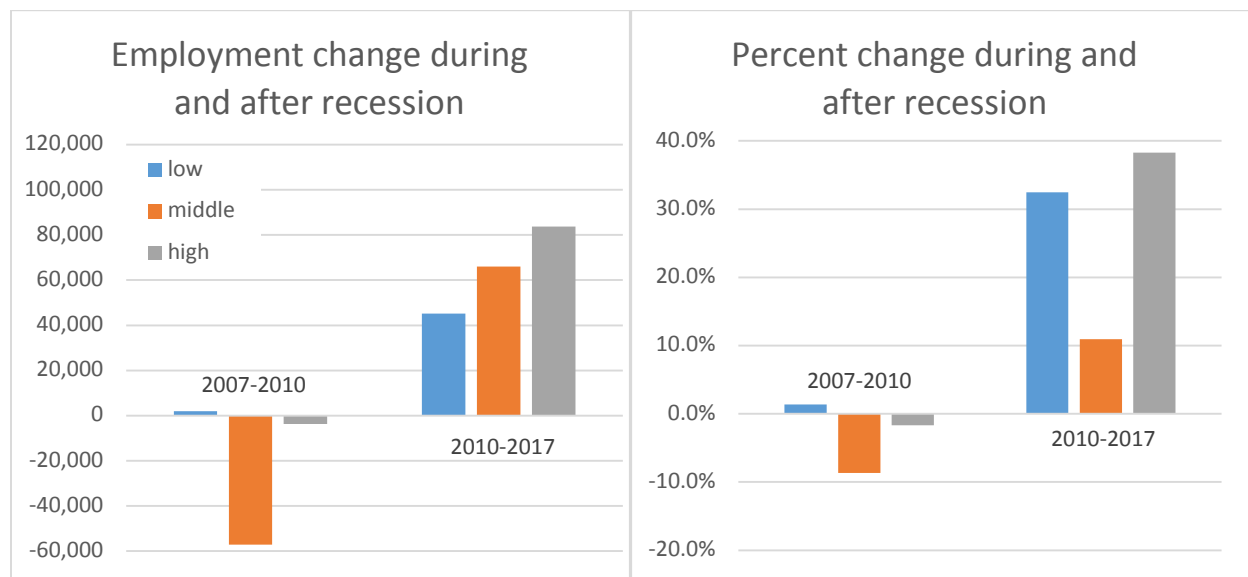


Figure 7: Change in low, middle, and high wage jobs during and after the recession in the Portland-Vancouver-Hillsboro MSA (OES, accessed March 2018)

Occupations within the middle wage category have also seen different trajectories over the last ten years. Around 13,200 production occupation jobs were lost during the recession and only 4,600 of those jobs had been recovered as of 2017. Production workers face continuing pressure from globalization and automation in the manufacturing industry. Administrative and office support occupations also saw significant job losses and weak recovery, consistent with the longer term trend as advances in technology change the nature of office work and the need for support staff. On the other hand, employment in several middle wage occupations that are primarily driven by population and demographic change continued to grow during and after the recession. These jobs include healthcare support workers, police officers, and teachers.

Data sources

OES - Occupational and wage data for the Portland-Vancouver-Hillsboro Metropolitan Statistical Area (MSA) come from the Occupational Employment Statistics (OES) program at the Bureau of Labor Statistics (BLS). <https://www.bls.gov/oes/>

LAUS - Unemployment data come from Local Area Unemployment Statistics (LAUS) program, accessible from the Oregon Employment Department (OED) and BLS. <https://www.qualityinfo.org/ed-uesti>

CES - Current Employment Statistics (CES) are reported from the Official Oregon Series available from OED. The CES program produces detailed industry estimates of nonfarm employment. <https://www.qualityinfo.org/ed-ceest>

QCEW - Retail industry and subregional employment statistics are reported from the Quarterly Census of Employment and Wages (QCEW) available from OED. County and MSA statistics are available online from <https://www.qualityinfo.org/ed-ewind>. Subregional statistics are derived from confidential microdata obtained from OED.

Participating employers have some flexibility in how they report the location and sector of employment, which may lead to inconsistencies in the data over time. There are two significant potential sources of error related to this issue:

- (1) The NAICS code is self-reported, so employers may change their NAICS designation(s) over time for a variety of reasons. Some employers have multiple records at the same address, so that each reporting unit can be assigned the most appropriate NAICS designation. As employers fine-tune their reporting for unemployment insurance purposes, comparisons over time may show shifts in the regional industry mix that do not represent any real changes in the jobs that people are doing.
- (2) Firms that have employees spread across multiple sites (for example, a large retail chain) typically report each location as a separate establishment. The multi-establishment reporting may not be consistent across different data sets, and has generally tended toward more detail over time. These inconsistencies may result in geographic shifts in the employment data when there have not been any real changes in where jobs are located.

E-commerce sales data: <https://www.census.gov/data/tables/2015/econ/e-stats/2015-e-stats.html>