Portland MSA Economic & Population Outlook
(October 2019)

Thomas Potiowsky
Portland State University

Portland State University, Northwest Economic Research Center

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NERC is based at Portland State University in the College of Urban and Public Affairs. The Center focuses on economic research that supports private and public policy decision-making, and relates to issues important to the Pacific Northwest and the Portland Metropolitan Area. NERC serves the public, nonprofit, and private sector community with high quality, unbiased, and credible economic analysis. Dr. Tom Potiowsky provides expert research direction and forecasting expertise. Peter Hulseman is NERC’s Senior Economist, and is responsible for model design and data management. Economist Emma Willingham designed this report and contributed to research, and additional support was provided by Katelyn Kelley and Hoang The Nguyen. All parties were involved in writing and review.

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TABLE OF CONTENTS

Introduction ............................................................................................................................................................ 1

Macroeconomic Trends: US and Oregon ........................................................................................................ 2

The Portland Housing Gap .................................................................................................................................... 8

The Portland MSA ................................................................................................................................................ 14

Comparing Across The Counties .......................................................................................................................... 22

   Clackamas ......................................................................................................................................................... 24

   Clark ................................................................................................................................................................. 26

   Columbia ......................................................................................................................................................... 28

   Multnomah ..................................................................................................................................................... 30

   Skamania ......................................................................................................................................................... 32

   Washington ................................................................................................................................................... 34

   Yamhill ............................................................................................................................................................. 36

Image & Data Sources ........................................................................................................................................... 38
A new entry for the record books: Portland MSA employment expansion is the longest on record, having surpassed the 1990’s expansion last September. And we now sit in October and are one month shy of a decade of job growth. While the length of this expansion is impressive, if we compare the same length of time (9 years and 9 months) of this expansion with that of the 1990s, jobs increased by 33.6% in the 1990s while increasing 24.4% in the 2010s.

The Portland MSA recorded the 4th fastest percentage gains in household income in the country from 2007 to 2018. This long expansion has also benefited the population across the board—regardless of age, sex, race, and income status, all subcategories have, on average, seen economic gains. We do need to recognize that while this is good news, these gains have not been equally distributed, and higher-income households witnessed the greatest gains.

Clues as to how long this expansion will continue seem to be out of our hands here in the Portland MSA. Signs of global economic slowing, a national manufacturing slump, and geopolitical risks around the world abound, including one in Washington, D.C. NERC is not bold enough to forecast a recession. Our bottom line outlook is for near-term slower economic growth, with a heightened risk of recession.

One of the benefits of a long economic expansion that has been a bit elusive here has been affordable housing. Our feature article takes a close look at affordable housing and reasons why our metro area demonstrates this gap of availability.

As always, we welcome your comments on the October 2019 forecast release as we strive for continual improvement.

Best Regards,

Tom Potiowsky
The U.S remains in its longest expansion to date for the time being (121 months as of this July), but increasingly, signs point to a heightened risk of recession in the next couple of years. On the other hand, while there are some factors that could indicate problems -- such as decreasing business investment, the ongoing trade war, and some international instability -- the underlying data do not yet indicate that we should begin to prepare for a recession.

In the US, analysis is complicated by the simultaneity of the Tax Cuts and Jobs Act (TCJA) and tariff escalations, and it is clear that the Fed’s challenge remains nuanced as muted inflation, rising wages and low unemployment continue to make headlines. In recent months, the Reserve has cut interest rates twice, reversing a three-year trend of increases and together manifesting the first decreases in eleven years. Chairman Jerome Powell expressed the growing view that many signs, most notably business non-residential fixed investment, point to a slowing economy, in part due to uncertainty regarding trade policy, and the shift in policy stance is a precautionary measure against recession.¹

Consumer spending is strong, as is sentiment, but low investment in structures by businesses may indicate a pullback from the type of boom that we might expect to see after a major corporate tax reduction. In short: Despite muddled policy impacts, the underlying data remains solid and there is no indication of an imminent recession.

REAL GDP

Real GDP grew at 3.1% in the first quarter of 2019 and 2.0% in the second: down slightly from the same time a year ago, but in excess of FOMC predictions for 2019, which have risen from 2.0-2.2% to 2.1-2.3%. Personal and government expenditures grew at averaged SAARs (seasonally adjusted annual rates) of 2.9% and 3.9%, both in the upper range observed since 2015.²

One troubling spot is private investment, which dropped at an SAAR of 6.3% in the second quarter after rising 6.2% in the first.³ The majority of this decrease is due to an 11.1% reduction in nonresidential structure investment -- it is possible that these falling outlays on manufacturing facilities reflect the blow to heavy industry dealt by the continuing trade war: new tariffs on Chinese goods have been levied ($125 billion in September, bringing the total to $550 billion), and increases to existing tariffs (on $250 billion in Chinese goods) were scheduled for October 15th at the time of writing.⁴ Private investment is one area where we would expect to see the TCJA’s impact, but in addition to the trade war, a strong dollar and global economic instability may be dampening activity as well. Exports have fallen by 5.7% SAAR in 2019Q2 (after rising 4.1% in the first quarter), and imports remain unchanged after falling by 1.5% SAAR in 2019Q1. The decrease in private investment reduced GDP growth by approximately 1.2%, and reduced trade activity lowered it a further 0.7% of the 2.0% reported.

Overall, the TCJA does not appear to have increased economic activity notably; see Figure 1. Government spending has changed the most, rising

![Figure 1: GDP and Component Growth Before and After TCJA](image)

Annual Percent Change, 2016Q2-2017Q4 and 2017Q4-2019Q2
from a bit under 1% in the eighteen months preceding implementation to an average of 2% SAAR in the eighteen months following, but all other components of GDP have fallen, notably in the case of private fixed investment. That said, we do not have a counterfactual of GDP growth without the TCJA, so we cannot say to what degree it would have impacted GDP growth absent exogenous factors like trade policy.

Meanwhile, a sustained decline in residential investment began in mid-2017 and is expected to continue through the end of the business cycle. Currently, it is estimated that trade policy uncertainty could impact output by over 1% into early 2020: not a far cry when considering that the latest data indicates that reduced trade activity dampened GDP growth to the tune of 0.7% this year, as described above.5

Personal consumption expenditures, which constitute 70% of the GDP, remain fairly strong at this point. It is likely that as firms face the fallout of trade restrictions, consumers will likewise begin to feel that squeeze, potentially dragging on consumption patterns. While the widely referenced Consumer Sentiment Index from the University of Michigan remains high at 93.2 in September, it is down nearly 7% from the same time last year—the largest drop since April of 2016.6 The CSI does not reliably correlate with spending, but personal consumption expenditures remain fairly strong at 4.6% SAAR (largely due to growth in durable goods, which at 13% SAAR showed double the growth observed in nondurables in 2019Q2).7 Note that this strong spending on durables does not match weakness observed in other data for the sector: this could be due to the ongoing trade skirmish. Unless larger economic factors begin to impact employment and wages, it can be expected that slow growth will continue.

**HOUSING**

Housing permits have remained fairly stable over the last two years, due to countervailing movements: slumps in both single- and multi-family permits were subsequently overcome in recent months, and the final result is a twelve-year high in August 2019 (Figure 3). Increased supply may help to temper the rising cost of housing in the near term, although housing providers did note that the impacts...
of trade policy in some parts of the country are hampering construction.8,9

**EMPLOYMENT**

In 2019, the US added an average of 161,000 jobs per month, down from an average of 223,000 in 2018. The labor force participation rate inched above 63% for the first time since 2013, but remains well below the 66-67% rate observed prior to the last recession, over a decade ago. Hiring in preparation for the 2020 Census has been minimal thus far. Health and Professional and Business Services continue to grow at the expected higher-than-average rates that they have maintained over the last year, adding 39,000 and 34,000 jobs respectively (approximately equivalent to their annual monthly averages). Other sectors remain stable, showing little growth or decline.10

After briefly dipping below the national growth rate in 2018, Oregon’s total nonfarm employment has pulled ahead again in recent months (Figure 4). Standout sectors for growth once again include Construction (4.1% from August 2018 to August 2019, with an emphasis on non-residential construction at 5.8%), Nondurable Manufacturing at 7.9% year-over-year growth, and Transportation and Warehousing at 8.7% (likely due to hiring at new local Amazon facilities). Retail Trade continues to fall, losing bit under 2% over the same time period.11 In contrast, Manufacturing has grown at a greater level than might be expected, coming in at 3.2% over the last year -- in addition to the strength in Nondurable Manufacturing mentioned previously, Transportation Equipment and Primary Metal Manufacturing are seeing YoY gains of 7.0% and 8.3% (although Durable Manufacturing has only grown as...
a whole by 1.1% YoY). However, in early October the Institute for Supply Management reported a fall in its manufacturing index, indicating contraction in the national market for the first time in three years and the lowest reading since July of 2009. This is thought to be a result of the ongoing trade war. As of 2018, Oregon had yet to see any impact of trade tensions on the export market, but this may change.

National unemployment rates continue to fall, nearly reaching previous lows in the early 2000s. The conventionally reported rate is at 3.5% -- a fifty-year low (Figure 5). In Oregon, the rate is at an even 4.0%, up by one tenth of a percent from last year, but discrepancies between urban and rural areas are clear: in Grant County, the rate is 7.1%, in contrast to the 3.9% observed in the Portland MSA.

**WAGES AND INFLATION**

In the second quarter of 2019, national earnings once again outpaced inflation with year-over-year weekly growth of 3.7%, in comparison to 1.8% year-over-year growth in the Consumer Price Index. The Federal Reserve’s preferred measure -- the Personal Consumption Expenditure Implicit Price Deflator (shown in terms of growth in Figure 6, with a similar core index that excludes food and energy) -- has remained fairly stable and within half a percent of the Fed’s 2% inflation target. The puzzle for the Fed is clear: inflation (especially for core elements) has remained stubbornly low since the recession, which has historically implied a need for decreased interest rates. And that is now the strategy being implemented -- the next section discusses various interest rates and current monetary policy.

In Oregon, income has been growing more quickly than the national rate, and in fact, Oregon’s average wage is at the highest observed level (in comparison to the rest of the nation) since the 1970s. Current growth levels are driven primarily by strong job gains (wages constitute 51% of personal income in the state), but additionally by proprietors’ income (revenues over costs, informally referred to as “profit” for smaller business owners), which has helped to close the historical gap observed between Oregon and the rest of the
nation. Although it accounts for only one tenth of income, proprietors’ income growth has exceeded 8% over the last five years, in comparison to a national rate of 2%. However, it should be noted that while Oregon’s relative position is strengthening, wage growth remains somewhat low for both the US and the state: note that if we take inflation out of national wage gains, we are left with YoY gains of 1.9% in real wages for the U.S, approximately equal to the target inflation rate and GDP growth.

On the national stage, wage growth has not been evenly distributed: three separate analyses of BLS data on wage growth in 2019 (by Indeed.com, the New York Times, and Goldman Sachs) have found it to be concentrated in lower-wage positions. This is likely due to a combination of the tight labor market, in combination with minimum wage legislation.16

### INTEREST RATES & THE FEDERAL RESERVE

As mentioned above, the Federal Reserve recently lowered the federal funds rate for the first time since the recession, citing the need for precaution if a global slowdown leads to recession. While most indicators remain positive, sliding business investment and the aforementioned manufacturing decline may spell trouble ahead, and this preemptive measure is designed to stimulate investment in the face of ongoing trade concerns. However, if the lessened activity is not due to an excessive cost on borrowing and is instead due to policy uncertainty, it is unclear how effective this approach can be. In theory, low rates could impact the Fed’s ability to stimulate the economy by lowering them further in the event of a recession—although it is likely inappropriate to consider hypotheticals that far in the future, as the role of the Reserve is to respond to current conditions.

Interest rates, which have been increasing over the last year, began to fall at the end of 2018. Real wages have been fairly stable this year for the US and Oregon, instead of rising, as low unemployment should imply. Even the Portland MSA, which pulled ahead of the nation in 2013, has remained fairly stable over the last six months. It is worth noting that the federal funds rate is now above the 10-year treasury rate: this is typically a phenomenon that precedes recessions (not quite visible in Figure 8), along with the yield curve inversion reported widely in recent months (with ten-year yield rates exceeding two-year or three-month yield rates). While changes like these can, and often do, correlate with the onset of recessions, there is no set interval by which they do so: in the last five cases, the recession occurred 10-33 months after the inversion.17

### THE OUTLOOK

In conclusion, while there are many elements (national and international) that could indicate trouble on the horizon, at this time the underlying data do not support fears of an imminent recession. Gross domestic product growth, housing permits, employment, and wages continue to increase, although private investment in structures has fallen and exporters are feeling the impact of the ongoing trade war. In the next section, we zero in the Portland MSA, where local data tells a similar story.


7 BEA (2019).

8 Federal Housing Finance Agency. (September 24, 2019). News release: FHFA House Price Index up 0.4 percent in July; up 5.0 percent from last year. Retrieved from FHFA.gov.


The importance of having a reliable and safe home cannot be overstated: from health outcomes to earning potential, the connection between stable housing and individual well-being is well documented. However, the supply of affordable homes is not only dwindling throughout Portland, but also across Oregon and the broader United States. At the state level there are only 28 affordable and available homes for every 100 low-income renters, below the already morose national figure of 37. Common policy responses across housing-strapped U.S. metro areas have tended to focus on the price of housing facing buyers. Rent assistance, eviction limits, mandated low-income set-asides for builders, and even rent control have locally followed this national trend, sometimes in defiance of well-known economic principles, with results that are muted at best. The supply side of the market for affordable units is a more difficult and complicated target for policymakers, and is too often overlooked as a result. As we outline in the report, the affordability issue cannot be effectively addressed with a narrow focus on regulating housing market transactions. The supply of homes is always a hard limit on how affordable they can be. Attracting new supply, while difficult in rural areas of the state, hasn’t been the critical issue for the Portland MSA, where instead the problem is a mismatch in the supply of available affordable homes relative to their demand. In the following sections we will define this issue quantitatively, address its potential causes on both sides of the market, and discuss the public sector response.

Defining Housing Affordability

Two terms used often throughout this article are “affordable housing” and “affordability gap.” Generally speaking, for a home to be considered affordable it should cost less than 30% of a household’s gross income. To illustrate, a family making $75,000 annually could spend up to $22,500 a year, or $1,875 a month, and not be considered cost burdened by their housing expenses. The affordability gap is the deficit of affordable homes that are available to households based on their income. The width of this gap is determined by how many homes are affordable within each income group; there are four such groups as defined by U.S. Housing and Urban Development adjusted median family incomes (HAMFI), listed in Figure 9. A household is deemed “cost burdened” when spending more than 30% of its income on housing costs, and “extremely cost burdened” if housing costs exceed 50% of income.

Portland MSA Affordability Gap

Figure 10 matches and compares the number of renter households by their income group (i.e., the demand side) with total rental housing units by their affordability category (i.e., the supply side). Simply looking at the aggregate quantities of rental housing units supplied and demanded would suggest no demand deficit, but rather an excessive supply as the former (350.1 thousand units) exceeds the latter (340.2 thousand units). However, deliberate consideration at more disaggregate levels reveals the imbalance and mismatch between supply and demand with respect to housing affordability. Only a total of 94.1 thousand housing units are affordable to 135.6 thousand very low income renters (less than or equal to 50% HAMFI), implying an affordability gap of at least 41.4 thousand units. In particular, there are 74.4 thousand extremely low income renters but only 28.6 thousand housing units which may be affordable to them. A crude comparison would indicate that at least 61.5% of

<table>
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<tr>
<th>Figure 9: HUD Income Groupings</th>
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<tbody>
<tr>
<td>Extremely Low Income</td>
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the issue is less optimistic when taking availability into consideration. It is obviously incorrect that all housing units affordable to the lowest income renters are available to them, as those units are even more affordable to, and thus can be more easily rented by, those with higher incomes as well. Figure 11 disaggregates the shares of housing units in each affordability category by the levels of their occupied renters’ incomes. A sizeable share of the housing units, though affordable, are not available for the lower income renters. Prominently, the lowest income group occupies only 58.6% of the housing units affordable to them, leaving the remaining 41.4% to other higher income groups, including those earning more than 80% of HAMFI. Combining both affordability and availability, a rough calculation shows that not just 61.5%, but over 77.5% of the lowest income renters are actually housing cost-burdened in the Portland MSA -- a disturbingly large proportion (but far from unusual).

Whether a given housing unit is affordable to a given renter is jointly determined by its rental price and his or her income. Thus, in searching for clues to the causes of the affordability gap, it is natural to first examine the trends of rental prices and renters’ incomes, which are shown in Figure 12. Clearly, there is an ongoing divergence between income and rent in Portland. Between 2011 and 2016, while the median income of renters grows only by 15.7%, the average rent of one-bedroom units still somewhat incomplete -- the lowest income renters are housing cost-burdened. For higher income brackets, the affordability gap gradually narrows, and even disappears: the renters can afford more expensive housing, and at the same time the supply of more expensive housing units is more abundant. Low income renters (50-80% HAMFI) account for 21.8% of the renter population: half of the total quantity of supplied units are affordable to this group but unaffordable to those making lower than 50% HAMFI.

Unfortunately, the estimates in Figure 10, though striking, are
surges nearly 50%. Although the rent shows a slight decline while the income continues to rise in 2017, the gap remains large; over 20 percentage points. The renters thus have to spend larger shares of their incomes on renting units, suggesting that housing now is much less affordable (or stated differently, more cost-burdening) than it was seven years ago. We note this period captures the extreme ends of the business cycles which may prove unrepresentative of the larger trend—however it still accurately depicts the current state of affairs.

**Affordable Housing Stock (Supply)**

Of the approximately 350,000 rental units in the Portland MSA, roughly 29,000 (or 8%) are affordable to extremely low income households. Portland clearly has a significant undersupply of affordable homes. As discussed in the above section, the affordability gap is not a simple product of aggregate supply, but specifically the mismatch of supply relative to household income. While we deem the distribution of housing the more important issue, we recognize that total supply in the region is still underbuilt. Although new construction is not necessarily hard to come by throughout the city, it takes time for these homes to decline and become attainable to lower income groups. This process, known as filtering, has been documented across the MSA. Apartments built in Portland in the 1970s priced at 67% above the market a decade later in the 80s; thirty plus years later these same units dropped to 40% above market rentals. Analysis done by Syracuse Economics Professor Stuart Rosen indicates that in 2011, the national average rate of filtering for rental apartments was about 2.5-3% a year (without considering inflation). This means, barring upgrades, that roughly 72% of homes would filter down over a fifty year horizon. While this is a viable option for low-income housing in the long run, filtering does not provide a solution to the current housing gap.

Some of the homes that would have filtered undergo renovations; upgrades to naturally occurring affordable housing (NOAH) throughout the MSA is an increasing phenomenon which squeezes an already limited stock. NOAH homes are categorized as unsubsidized, market-rate rental housing that is affordable to lower-income households. According to research done by Seyoung Sung and Lisa Bates, both professors of Urban Studies and Planning at Portland State University, sales of NOAH buildings are accelerating. Specifically, 90% of total apartment sales for the metro in 2016-2017 were NOAH properties. The majority of low income Americans do not receive government subsidies for housing, meaning that they rely on market-rate rentals for their living situations. In a tight housing market like Portland’s, NOAH homes are increasingly renovated to higher rent levels -- these upgrades displace lower income households who otherwise could have afforded the home.

If it takes time for housing to filter down, and NOAH homes are increasingly upgraded out of low-income affordable levels, why isn’t new, privately supplied low-income housing being produced? It is important to address the mindset of a developer when answering this question. Basic
economic principles tell us that in order for something to be produced, it should be profitable. When investors are deciding whether or not to buy into a property they look at the property’s capitalization rate (cap rate). Cap rates are the most common evaluation tool for property investors, as they explain the relationship between a property’s expected Net Operating Income (NOI) and its price. Tied into the property’s NOI is the monthly rent it charges. Holding all else constant, if rents are not high enough then the property’s NOI won’t be high enough -- this leads to cap rates that are too low for investors and as such, no building will be developed. Since developers tend to scout throughout the country, properties in the MSA are competing nationally for profitability, putting even more pressure on high rent capture.

Having explained (at least partially) why affordable homes are not being adequately supplied by the private sector, one potential solution is to bring in the public sector to achieve the desired outcome. Consider two public sector solutions to the lack of affordable supply: regulated affordable rental housing and the recently passed Oregon House Bill 2001, which relaxes single-family zoning laws.

Metro’s biannual Regional Inventory of Regulated Affordable Rental Housing reports a 2017 inventory of 42,430 units within the four-county Portland Metro. These units are defined as “housing that is made affordable through public subsidies and/or agreements or statutory regulations that restrict or limit resident income levels and/or rents.”

Figure 13 compares the number of regulated affordable units, the total number of units, and the number of low-income (< 80% HAMFI) units demanded for four Portland MSA counties. Together these counties make up 95% of the Portland MSA housing supply, and in this area, about 42,500 (13%) are regulated to remain affordable; with roughly 6,300 (2%) homes regulated to remain affordable to those in the extremely low income group (< 30% HAMFI). Multnomah County is home to the largest share of protected units in the region, with 26,630 homes, or 18% of its total rental housing supply restricted. Compared to the low-income demand in this county (103,220 units) this puts only a small dent in the overall affordability gap. Washington County has 8,050 regulated affordable units, compared to 55,200 low-income units needed. The story is similar for the other two counties, with low-income demand far outweighing the number of units mandated to remain affordable. This isn’t to say that the public sector needs to regulate enough units to match 100% of low-income demand throughout the region, but to point out that the current state of regulated affordable housing is only a drop in the bucket for what is needed to close the affordability gap.

With the bulk of rent restricted homes still unavailable to the most vulnerable population, the state has recently intervened in attempts to increase housing options. House Bill 2001 seeks to grow affordable housing supply across Oregon by requiring cities with populations of 10,000 and over to allow duplexes (in some cases tri- and quad-plexes) on land that was previously zoned only for single-family homes. The new policy has some precedent, following closely in line with a Minneapolis City Council plan that banned single-family zoning...
in December 2018. Portland City Council has been working on a similar policy, known as the Residential Infill Plan. Both policies aim to increase housing density and alleviate the affordability gap by reviving the middle housing market (homes that fall in between multifamily apartments and single-family homes). Several papers on land use and zoning throughout the U.S. indicate that exclusionary zoning policies disproportionately affect racial minorities and low socio-economic classes, and are the most common impediment to the creation of affordable housing in urban areas.

Driving Market Factors (Demand)

Demand for housing in Portland MSA has exhibited significant structural changes in terms of tenure since the recession. Between 2010 and 2016, while the homeownership rates were historically low, the number of owner-occupied housing units increased by only 1.0%, while the number of renter households increased by 12.8% (amounting to nearly 40,000 households). Additionally, half of the increase in the renting population was composed of very or extremely low-income groups (i.e. earning less than or equal to 50% of HAMFI). The demographic shift may be ascribed to baseline trends: the 20-30 year old cohort have recently become the largest cohort in size, and their expansion is primarily fueled by a steady increase of net migration of similarly-aged households into the area. As they are most likely studying or at the beginning of their career paths, they are unlikely to earn high incomes in the short run, and many, if not most, are not in the homebuying stage. They remain reliant on the rental market -- where they contribute not only to boosting rental prices, but also to increasing the demand for the low-priced housing segment and therefore the increasing shortage. In fact, a new study published by the Fed finds that homeownership for adults ages 24 to 32 fell by 9% from 2005 to 2014 -- the historical rise in student debt could be one explanation.

Rural Oregon

While this article focuses on housing affordability within the largely urban Portland MSA, the issue extends to rural Oregonians as well. Population growth in rural Oregon has outpaced the rest of the country, reaching rates double those observed nationally since the 1990s. New construction in small towns throughout the state has not kept up with the rise in demand, which puts pressure on housing prices in areas where budgets are already stretched: anecdotally, there were only four new homes produced in The Dalles in all of 2018. Income levels in rural Oregon have largely matched those of rural America at large, but Oregon home prices and rent are on average 30% and 15% more expensive respectively. It is clear the issue of housing affordability runs deeper than the state’s metropolises, and rural areas have more difficulty attracting new constriction (although even metropolises, where new supply enters constantly, face this challenge as well).

Conclusion

The affordability gap is created by the shortage of low-priced housing units affordable to the lowest income groups, and further aggravated by the crowding-out effects from the higher income households. Looking forward from the public sector, while the supply of regulated affordable rental housing seems to be too modest relative to demand, the prospect of newly drafted policies is uncertain. As shown by the documented trend of renovations on naturally occurring affordable housing to higher rent levels, one of the root causes has to do with the absence of financial incentive for the unregulated market to supply more low-priced units. Consequently, allowing for higher housing density may not give rise to more affordable units. What we do know is that filling this gap will require concerted efforts from both private and public sectors; new supply is an important piece of the affordability puzzle (especially in the long run), but requires redistribution in the short run in order to alleviate the malaise currently felt by Portland residents.
Campbell Townhouses, Portland
As we enter October of 2019, we are one month shy of ten years of employment expansion for the Portland Metropolitan Statistical Area (MSA). Just last September, the Portland MSA surpassed the longest job growth period on record. While the length of this expansion is impressive, if we compare the same length of time (9 years and 9 months) of this expansion with that of the 1990s, jobs increased by 33.6% in the 1990s while increasing 24.4% in the 2010s. However, the current expansion still shows it has some legs to keep going. While the Portland MSA hit a soft patch in 2018, with Year over Year (YoY) job growth thru August at 1.66% and ranked 153 out of the United States’ 399 largest metros, the 2019 YoY job growth thru August is 2.06% with a rank of 95. As we look over this expansion, recent job growth has slowed -- it maintains a good growth rate of 2%, but this is less than growth during the earlier years (2011 thru 2017).1

The unemployment rate for the MSA was 3.9% in August 2019, and has been around this rate since January 2017. As we noted in our last forecast release, the unemployment rate barely changing for this length of time is an indicator that the MSA is likely at full employment, with only structural and frictional reasons remaining for the unemployment we see. (Structural unemployment is that caused by skills mismatch, discrimination, and other external factors, while frictional employment is due to voluntary job turnover.) The business cycle downturn is now in the rear window. This section will discuss employment, income (along with wages and inflation), and housing dynamics for the most recent period, and the near term outlook for those variables. Additionally, this report includes our long term forecast for employment and income from 2030 to 2059. The population forecast is not changed for the October release and will show the same population outlook as our April 2019 release using the estimates from our friends at the Population Research Center at Portland State University. We will end with a comparison of the current forecast with the past two forecasts, and a summary of factors on our watch list that could impact our economic outlook.

EMPLOYMENT

With our forecast release occurring in October, we have revisions in the data thru 2019Q1 and preliminary data for 2019Q2, and thus report on these short term current job movements since our last forecast in April.

As we take a look at recent job growth, we are reminded that the most recent numbers are subject to revisions. We had a relatively weak 2019Q2, with the MSA growth at 0.6%. This follows on the heels of 2018Q4 at 3.0% and 2019Q1 at 2.3% growth respectively, potentially indicating a rather dramatic slowdown (which may be revised up in later data releases). Nothing tells us right now that job growth should have been this slow for 2019Q2, though we do believe job growth will slow in the coming quarters. Given that revisions only go back to 2019Q1 for the MSA, we take notice of the slow growth number for 2019Q2 but recognize that large revisions are possible.

Figure 14: Employment Growth in US, Oregon, and Portland MSA
YoY Growth Rate, Monthly, January 2000-August 2019 & September 2019-December 2020
As we look at quarterly YoY job growth, we see the Portland MSA picking up growth as we ended 2018 and into the first two quarters of 2019. Except for the first quarter of 2017, quarterly YoY job growth was above 2.5% from the third quarter of 2013 to the fourth quarter of 2017. Though job gains have picked up, they are in the low 2% range: the story of slowing job growth still holds.

Sectors that picked up job growth as we ended 2018 and moved into the first quarter of 2019 include construction, manufacturing, transportation, warehousing, and utilities, health services, financial activities, and professional and business services. Given this list, the bounce back was fairly widespread. Construction job growth continued to show strength through most of 2018 with strong finishes in the second half: quarterly seasonally adjusted annualized rates (SAARs) of 10.1% in 2018Q3 and 7.3% in 2018Q4. While construction job growth did slow in the first quarter of 2019, the sector maintains its position as one of the strongest business sectors. With the national slowdown in manufacturing, one would expect the same impact in Oregon and the Portland MSA, but local job growth in this sector has been fairly strong since from 2017Q2 to 2018Q3. However, possibly reflective of what is happening at the national level, manufacturing job growth here has slowed since 2018Q3 and manufacturing hours worked in the state are dropping in 2019.\(^2\)

Transportation, Warehousing, and Utilities continued a strong growth trajectory into 2019Q1, in large part related to Amazon center expansions in the second half of 2018. We believe both the population growth and aging population is assisting...
job growth in Health Services. The job growth numbers are jumping around a bit, which we attribute to seasonality adjustments following the reclassifications of state health service workers into Private Health Services. The average quarterly SAAR from 2018Q2 thru 2019Q1 has been 2.1%. Financial activities had negative job growth in 2018Q4 but bounced back to 3.9% SAAR. This strong showing in job growth is mostly led by Clark and Washington counties -- especially Clark, which has shown strong job growth in this sector since mid-2017. Professional and Business Services had a rough start thru the first three quarters of 2018 but then grew 4.4% in 2018Q4 and 3.0% in 2019Q1, once again led by Clark and Washington counties.

A few sectors experienced slower growth coming in 2019Q1. Wholesale job growth has slowed while retail continues to struggle. Retail job growth was -0.9% SAAR in 2019Q1 and has not seen a quarterly SAAR of growth above 2% since 2017Q1. Online shopping continues to put pressure on this sector. Leisure and hospitality had mixed growth for 2018 and entered 2019Q1 with 0.9% job growth. Stronger growth only appeared across the river for Clark and Skamania counties, with Clark's growth likely associated with the Waterfront Vancouver project.

Turning to our short-term outlook, we like to group our industrial sectors for employment by short term forecast growth strength: fast, medium, and slow. Fast, Medium, and Slow are subjective terms and these are relative measures of how these sectors compare to each other over the next two forecast years—from 2019Q3 to 2021Q2. Overriding this classification is our general short-term outlook, which has total job growth for the Portland MSA slowing to under 1% as we enter 2021.

For our fast job growth industrial sectors, we have Professional and Business Services; Health Services and Education; Federal Government; and Durable Manufacturing. Professional and Business Services includes a wide range of activities including legal and accounting services, engineering, computer system design, management of companies, administrative support, and waste management. This sector supports a number of other sectors, from Manufacturing to Leisure and Hospitality. We expect continued strong growth in Clark, Clackamas, and Washington counties. Multnomah County was especially strong in this sector but had relatively slow job growth in both 2018Q4 and 2019Q1. We expect Multnomah County to pick up in the near term, helped by the planned downtown expansion of Amazon web service workers. Health Services and Education is really driven by health services, and we expect changing demographics to continue to play a role. At this time, we do not incorporate the possibility of political plans that call for "Medicare for All." The Federal Government makes this fast category mainly due to the coming Decennial Census, and temporary hiring of Census workers. It may seem odd to have Durable Manufacturing in the fast category, but we were impressed with its recent strong job growth, and anticipate the third phase of D1X on the Intel Ronler Acres campus in Washington County. At the same time, we cannot ignore what is happening at the national level, and the recent slowdown in the growth of manufacturing jobs and decline in manufacturing hours worked in the state. Our placement of Durable Manufacturing in the fast category may be short-lived.

For our medium job growth industries we have Other Services; Information; Leisure and Hospitality; Construction; Local Government; and Financial Activities. Other Services includes repairs and maintenance along with a host of personal services. This sector could easily be in our fast growth category given its recent job growth the last 4 quarters leading up to 2019Q2. Information's largest employment segment in this sector is publishing, which includes software publishers in addition to newspapers, magazines and the like. We expect this sector to grow just under 2% for the second half of 2019 and slow to 0.5% going into 2021. Leisure and Hospitality was in our slow growth category for our previous forecast but ended 2018 with a strong job report. There are a number of hotels still opening in and around downtown Portland, as well as many opening in Beaverton (Washington County) and Vancouver (Clark County). Countering this action, there appears to be a shakeout among our microbrewery sector, as a number of restaurant establishments are closing. While these are not “big” numbers, our expectation is that Leisure and Hospitality will start to slow as both hotel and food establishment openings slow over time. Construction has remained strong, with large job gains; however observed slowing of multi-family and single family permits may foreshadow similar slowing for this sector. On the upside, there are a number of public works in the pipeline, including affordable housing, new and upgraded schools, and road projects. We assume that these
projects will keep Construction in our medium growth category. Financial Activities job growth is expected to be 1.7% annually for 2019 and slow to 0.8% for 2020. Again, we expect Clark County to lead the growth in this sector, as it has historically outperformed the other counties.

For our slow job growth industrial sectors, we have Retail; Wholesale; Nondurable Manufacturing; State Government; Transportation, Warehousing, and Utilities; and Mining and Logging. The outlook for Retail is to average 0.6% annualized job growth over the next two years. Wholesale is very similar at 0.5% for the next two years. As previously mentioned, online shopping is stiff competition for brick-and-mortar retailing. Transportation, Warehousing, and Utilities is forecast...
to slow its job growth to an annual average of 0.4% over the next two years. We are moving past the Amazon distribution center openings, though we expect our strategic location between Washington state and California to keep this sector going, especially in Washington and Clackamas Counties. Nondurable Manufacturing covers a wide range of businesses, with most employment in either food and beverage or paper and printing businesses. The forecast is for this sector to grow jobs, on an average annual basis, at 0.5% over the next two years.

**INCOME, WAGES, AND INFLATION**

Since 2018 Metro personal income numbers will not be released until November 2019, our short term forecast has not changed. To quote our April 2019 forecast release: “Our projection for Portland MSA personal income growth for 2018 is 5.1%, followed by 4.8% in 2019 and 5.5% in 2020. The strongest projected growth for 2018 is expected in Washington and Clark Counties. Wages and salaries, the largest component of personal income, is projected to growth 5.1% in 2018, 4.8% in 2019, and 6.1% in 2020 for the Portland MSA. Strongest growth in wages and salaries should be in Washington, Clark, and Clackamas Counties.”

We now have a bit more data on the new Pacific CPI-U measure of prices. Figure 18 compares the average annual rate of change in prices (inflation) on a half year basis. As the chart shows, the West and Pacific regions have a higher inflation rate than the US. Most of this difference is due to housing expenses. An encouraging sign is the lower inflation rate for all regions for the first half of 2019.

**Figure 18: CPI Measures, Average Annual Rates of Change from Half Year**

<table>
<thead>
<tr>
<th>Year</th>
<th>US CPI-U</th>
<th>West CPI-U</th>
<th>Pacific CPI-U</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018H1</td>
<td>2.5%</td>
<td>3.3%</td>
<td>3.2%*</td>
</tr>
<tr>
<td>2018H2</td>
<td>2.4%</td>
<td>3.4%</td>
<td>2.9%*</td>
</tr>
<tr>
<td>2019H1</td>
<td>1.7%</td>
<td>2.7%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

*Monthly annual rates are not available. Calculated based on half-year index and base year 100.0

**Figure 19: S&P CoreLogic Case-Shiller Index for Select Areas**

YoY Percent Change, Monthly, January 2000-July 2019
Based on the latest S&P CoreLogic Case-Shiller 20-City Composite Index, house prices in the city of Portland rose 2.5% for the year ending in July 2019 (Figure 19). This ranks Portland 14th in the 20-city index. For comparison, one year ago Portland housing prices were rising by 5.6%. House prices continue to slow throughout the nation with the top city, Phoenix, only rising 5.8%. Seattle had the distinction of ranking 20th and was the only city to see a drop in prices of -0.6%.

Both housing availability and affordability have been on the minds of civic leaders throughout the state and in the Portland MSA. Two bills that became law following the 2019 Oregon Legislative Session may have a huge impact on housing. These are essentially companion Bills: HB 2001 and SB 534. HB 2001 allows duplexes in cities with a population greater than 10,000 on single family zoned lots. This is a sweeping change to single-family zoning. SB 534 basically allows homes to be built on any “legal” lot, even if that lot is smaller than 5,000 square feet. Sometimes referred to as “skinny lots,” these are typically around 25 by 100 feet. This will be especially important for the concentrated population in urban areas of the Portland MSA and could result in more in-fill housing developments.

This movement to address the inadequacies of housing is also further introducing the public sectors (i.e., state and local governments) into the housing business. As reported in our April 2019 forecast release, a number of public and private-public partnerships with be building affordable housing units through the Portland MSA.

While the underlying economic conditions influence housing permits, the month-to-month and quarter-to-quarter numbers are also influenced by population, weather, and government policies. Our two-year outlook, shown in Figure 20, is for single-family permits to increase slightly while multifamily permits mildly decrease. As we move into 2021 thru 2018, we expect annual single-family permits to be approximately between 10,200 to 9,200 units and multifamily to be around 7,600 to 6,800 units. Single-family permits will be well below the peak year of 2005, and multifamily below the recent bump up in 2017. We are finally working our way thru the bunching of multifamily permitting that occurred before the inclusionary zoning law took effect in Multnomah County. We also move the traditional permitting split in the Portland MSA of 70-30 for single- compared to multifamily to favor multifamily with a split of 57-43.

Figure 21 compares employment projections for the Portland MSA in our previous three forecasts to this one. We do not have complete data at the time of our release for 2019Q3 and 2019Q2 is preliminary. Note that 2018Q4-2019Q2 (italicized) are historic, not forecast. But we use the word “historic” with caution, as these numbers will be revised. Looking at the history of 2019Q2 from the April 2019 Forecast, this quarter was much slower than anticipated, but as discussed in the employment section, we suspect revisions will adjust this number upwards. The end of 2018 and 2019Q1 picked up some steam and came in faster than we forecast, so for the year, 2018 came in slightly faster at 1.90% compared to our April forecast of 1.79%. We take the faster outcome for 2018 and a strong 2019Q1, with other factors into account, and slightly extend the staying power of the expansion by raising our near term forecast thru 2021.

Given the long length of time for this expansion, we have been asked why we do not forecast a recession in 2020 or 2021. There is no doubt that the
risks for a recession have heightened and as reported in our section on the United States economy, the Federal Reserve has responded with two interest rate cuts. At this time, we do not see a particular imbalance or speculative bubble occurring in the economy as has preceded other recessions. We will remain vigilant in looking for signs of a possible coming recession. The fact remains -- the Portland MSA has never missed a US recession.

As mentioned, there are other factors that come into play for our forecast besides the most recent numbers since our last forecast. Here is a brief sample of special events, data releases, and factors to track that have influenced our forecast over the ensuing months, taken from research and expert consultations:

- World and US economic performance, the ongoing trade war with China, Brexit, and the possibility of increased or additional tariffs on some members of the European Union.
- Oregon Economic Outlook report from the Oregon Office of Economic Analysis, population forecasts from the Research Population Center at Portland State University.
- Intel’s planned expansion, Daimler’s move into automated trucks, new hotels, and an evolving retail business environment.
- Past policies at the state and local levels, especially budgeting, transportation and housing, that continue to play out their full impact on the region.

The actual direction of the economy in the future is subject to many events, some of which are known but have impacts that are difficult to tease out or assess in entirety, and some for which impacts are unknown. Here is a partial list of potential headwinds and tailwinds that could significantly impact our outlook:

- Federal Reserve interest rate policy going forwards
- Oregon State and local government budget problems
- Broad tariffs that may raise costs of imported supplies and finished products to businesses and consumers, and possible retaliatory tariffs that may hamper exported goods and services
- Possible new housing policies both in and outside of Multnomah County
- Immigration regulation
- Geo-political risks
- Climate change

We had “Climate change” in our list of longer-term issues but believe that it is an issue that has bearing on our economy today. Unknown is the extent that climate change will impact our economy and whether policy changes will be able to mitigate the negative impact. Longer-term issues include income inequality and cyber security, all of which are likely already shaping current trends but the influence of which may intensify over the coming years.

---


### Figure 22: Forecast SAAR Growth Rates for All Industries, Portland MSA
Seasonally Adjusted Annual Rates, 2019Q3-2021Q2

<table>
<thead>
<tr>
<th></th>
<th>2019Q3</th>
<th>2019Q4</th>
<th>2020Q1</th>
<th>2020Q2</th>
<th>2020Q3</th>
<th>2020Q4</th>
<th>2021Q1</th>
<th>2021Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Nonfarm</strong></td>
<td>2.0%</td>
<td>1.8%</td>
<td>1.8%</td>
<td>2.0%</td>
<td>0.8%</td>
<td>1.0%</td>
<td>0.8%</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Private Nonfarm</strong></td>
<td>2.2%</td>
<td>2.0%</td>
<td>1.8%</td>
<td>1.6%</td>
<td>1.4%</td>
<td>1.2%</td>
<td>0.8%</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td>2.2%</td>
<td>1.4%</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>Mining and Logging</strong></td>
<td>0.4%</td>
<td>0.5%</td>
<td>0.1%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>0.5%</td>
<td>0.0%</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>Manufacturing</strong></td>
<td>1.1%</td>
<td>1.0%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.6%</td>
<td>1.7%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>Durable Manufacturing</strong></td>
<td>1.3%</td>
<td>1.1%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>Nondurable Manufacturing</strong></td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.3%</td>
<td>0.1%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>Trade, transportation, and utilities</strong></td>
<td>1.1%</td>
<td>1.1%</td>
<td>0.8%</td>
<td>0.6%</td>
<td>0.4%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Transportation, warehousing, and utilities</strong></td>
<td>1.2%</td>
<td>1.1%</td>
<td>0.6%</td>
<td>0.3%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>Retail</strong></td>
<td>1.3%</td>
<td>1.1%</td>
<td>0.9%</td>
<td>0.6%</td>
<td>0.5%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
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<tr>
<td><strong>Wholesale</strong></td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>Health Services and Education</strong></td>
<td>3.5%</td>
<td>3.4%</td>
<td>3.3%</td>
<td>3.0%</td>
<td>2.4%</td>
<td>2.2%</td>
<td>2.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Financial Activities</strong></td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.5%</td>
<td>0.6%</td>
<td>0.5%</td>
<td>0.8%</td>
<td>0.6%</td>
<td>0.5%</td>
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<tr>
<td><strong>Information</strong></td>
<td>1.9%</td>
<td>1.9%</td>
<td>1.5%</td>
<td>0.8%</td>
<td>0.4%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>Professional and Business Services</strong></td>
<td>3.9%</td>
<td>3.4%</td>
<td>3.4%</td>
<td>2.9%</td>
<td>2.6%</td>
<td>2.2%</td>
<td>1.5%</td>
<td>1.6%</td>
</tr>
<tr>
<td><strong>Leisure and Hospitality</strong></td>
<td>1.7%</td>
<td>1.6%</td>
<td>1.3%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>0.7%</td>
<td>0.2%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>Other Services</strong></td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.4%</td>
<td>1.1%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.4%</td>
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<tr>
<td><strong>Government</strong></td>
<td>0.8%</td>
<td>0.7%</td>
<td>1.4%</td>
<td>5.0%</td>
<td>-3.0%</td>
<td>-0.8%</td>
<td>0.7%</td>
<td>0.5%</td>
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<tr>
<td><strong>Federal Government</strong></td>
<td>-0.2%</td>
<td>-0.2%</td>
<td>6.5%</td>
<td>39.8%</td>
<td>-24.8%</td>
<td>-10.4%</td>
<td>0.9%</td>
<td>-0.2%</td>
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<tr>
<td><strong>State Government</strong></td>
<td>0.8%</td>
<td>0.6%</td>
<td>0.5%</td>
<td>0.4%</td>
<td>0.8%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>Local Government</strong></td>
<td>0.9%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>
COMPARING ACROSS THE COUNTIES

POPULATION

<table>
<thead>
<tr>
<th>County</th>
<th>Population (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clackamas</td>
<td>419,425</td>
</tr>
<tr>
<td>Clark</td>
<td>479,500</td>
</tr>
<tr>
<td>Columbia</td>
<td>51,900</td>
</tr>
<tr>
<td>Multnomah</td>
<td>813,300</td>
</tr>
<tr>
<td>Skamania</td>
<td>11,890</td>
</tr>
<tr>
<td>Washington</td>
<td>606,280</td>
</tr>
<tr>
<td>Yamhill</td>
<td>107,415</td>
</tr>
</tbody>
</table>

Share of Portland MSA (2018)

Current and Forecast Population Growth Rate

Historic Net Migration by County
HISTORIC AND FORECAST INCOME PER CAPITA (THOUSANDS OF DOLLARS)

Single Family/Multifamily Split in Housing Construction

Note: Columbia, Skamania, and Yamhill Counties do not have consistent multifamily construction.
CLACKAMAS COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

- Durable Manufacturing: 14,627
- Retail: 19,101
- Professional and Business Services: 21,583
- Health Services and Education: 24,584
- Leisure and Hospitality: 17,017
- Other Industries: 68,067

AVERAGE ANNUALIZED EMPLOYMENT GROWTH IN MAJOR INDUSTRIES

- Pre-recession: 2004-2007
- Recession: 2008-2009
- Post-recession: 2009-2019Q2
- Early Forecast: 2019Q3-2023Q2
- Late Forecast: 2023Q3-2029
EMPLOYMENT IN NOTABLE FAST- AND SLOW-GROWTH INDUSTRIES, INDEXED TO 2005Q1

HISTORIC AND FORECAST AVERAGE ANNUALIZED NONFARM WAGE GROWTH

HISTORIC AND FORECAST HOUSING PERMITS, SINGLE FAMILY AND MULTIFAMILY
CLARK COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

AVERAGE ANNUALIZED EMPLOYMENT GROWTH IN MAJOR INDUSTRIES
COLUMBIA COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

AVERAGE ANNUALIZED EMPLOYMENT GROWTH IN MAJOR INDUSTRIES

NORTHWEST ECONOMIC RESEARCH CENTER
EMPLOYMENT IN NOTABLE FAST- AND SLOW-GROWTH INDUSTRIES, INDEXED TO 2005Q1

HISTORIC AND FORECAST AVERAGE ANNUALIZED NONFARM WAGE GROWTH

HISTORIC AND FORECAST HOUSING PERMITS, SINGLE FAMILY AND MULTIFAMILY
MULTNOMAH COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

Average Annualized Employment Growth in Major Industries

NORTHWEST ECONOMIC RESEARCH CENTER
EMPLOYMENT IN NOTABLE FAST- AND SLOW-GROWTH INDUSTRIES, INDEXED TO 2005Q1

HISTORIC AND FORECAST AVERAGE ANNUALIZED NONFARM WAGE GROWTH

HISTORIC AND FORECAST HOUSING PERMITS, SINGLE FAMILY AND MULTIFAMILY
SKAMANIA COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

AVERAGE ANNUALIZED EMPLOYMENT GROWTH IN MAJOR INDUSTRIES

NORTHWEST ECONOMIC RESEARCH CENTER
WASHINGTON COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

Average Annualized Employment Growth in Major Industries

NORTHWEST ECONOMIC RESEARCH CENTER
**Employment in Notable Fast- and Slow-Growth Industries, Indexed to 2005Q1**

![Graph showing employment trends in various industries, indexed to 2005Q1.](image)

- **Construction**
- **Durable Manufacturing**
- **Health Services and Education**
- **Professional and Business Services**
- **Transportation, warehousing, and utilities**
- **Leisure and Hospitality**

**Historic and Forecast Average Annualized Nonfarm Wage Growth**

![Graph showing historic and forecast average annualized nonfarm wage growth.](image)

**Historic and Forecast Housing Permits, Single Family and Multifamily**

![Graph showing historic and forecast housing permits for single family and multifamily homes.](image)
YAMHILL COUNTY

MAJOR INDUSTRIES: TOTAL JOBS 2018Q4

- Manufacturing: 6,990
- Retail: 3,679
- Local Government: 3,755
- Health Services and Education: 7,948
- Leisure and Hospitality: 3,796
- Other Industries: 8,679

AVERAGE ANNUALIZED EMPLOYMENT GROWTH IN MAJOR INDUSTRIES

- Pre-recession: 2004-2007
- Recession: 2008-2009
- Post-recession: 2009-2019Q2
- Early Forecast: 2019Q3-2023Q2
- Late Forecast: 2023Q3-2029
**IMAGE & DATA SOURCES**

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**Data Sources:**

Income and GDP – BEA

CPI and Wages - BLS

Employment – BLS, Oregon Employment Department, Washington State Employment Security Department


Interest Rates – U.S. Treasury and Freddie Mac

Housing Permits - U.S. Census