Importantly, the combination of stronger productivity and ongoing low unit labor costs means economic growth can remain a bit stronger without driving inflation higher. The expansion should still have room to run.

**Bottom Line:** The U.S. expansion has matured and is now the longest on record. That said, the economy remains healthy and the outlook calls for ongoing, but slowing growth this year and next. Risks remain but the next recession is not yet seen in the data. Better economic readings in the past month or two alleviate some of the concern earlier in the year. When combined with the Federal Reserve’s pivot, the economic expansion will endure. The challenge is for policymakers to properly gauge the economy as it transitions down to more sustainable rates of growth, and adjust policies as needed.

**Oregon Economy**

Oregon continues to see healthy rates of growth when it comes to employment, income, and GDP. However the state is no longer significantly outpacing the nation like it was a couple years ago. This is particularly true for job gains which are effectively matching the average state in recent quarters. Personal income growth remains stronger, meaning Oregon income per capita, per worker, and per household is rising faster than nationwide. This is a continuation of the so-called sweet spot where economic growth is strong enough to keep up with the growing population but also deliver ongoing gains to Oregonians. This pattern of growth is expected to continue until the next recession, whenever it comes.

Overall, the slowdown seen in the Oregon economy was not unexpected. In fact, over the course of the current 2017-19 biennium, Oregon’s employment, personal income, and population have closely tracked expectations from a couple of years ago. The reason is that the peak growth rates seen a few years ago were largely about putting the unemployed Oregonians from the Great Recession back to work. Once the labor market tightened, growth would slow as firms had to dig deeper into their resume stacks to fill open positions. Furthermore, given that 60 percent of new residents say they moved to Oregon for a job or to look for work, as job growth slowed, so too would migration into the state.

That said, the severity of the slowdown in the past year for both employment and population is a bit more than expected. In particular, population growth in 2018 was a noticeable step down relative to recent years. This slowdown was widespread as every major age group, except seniors, and every single region of the state experienced slower growth.
Additionally, Oregon is becoming increasingly reliant upon net in-migration for population growth as the natural increase in the population is tapering and will turn negative by 2027. That is, Oregon will see more deaths than births in a handful of years, which is a continuation of trends seen since the Great Recession.

Oregon’s birthrate not only has not recovered during the expansion, it continues to fall even in good economic times. Oregon’s birthrate in now about half a child below the replacement rate. Furthermore, Oregon deaths continue to rise somewhat faster than expected. The increases are above those due to an aging population. Health issues like obesity, heart disease, drug overdoses and the like are pushing back against the long-term advances in medical care and increases in life expectancy. All told, Oregon’s population would barely increase and in fact will shrink in the near future if it were not for new residents moving into the state.

Looking forward, the key question is how fast can and will Oregon’s economy grow? There are two sources of workers for businesses looking to expand: current residents who are not working today and new residents moving to Oregon. The latter we know has already slowed as the expansion matures, and is expected to slow further in the coming years. That said, even with the expected slowing in population growth, the majority of new workers in the economy will come from in-migration. This is due to the fact that participation gains among Oregon’s working-age population are nearly tapped out, but based on past expansions, not entirely so.

The share of prime working-age Oregonians with a job today is back to where it was prior to the Great Recession, and even a bit higher. This is tremendous economic news and these gains from 2014-2017 are the primary reason Oregon’s job growth outpaced the nation. That said, in the past couple of years, job growth among the prime-age cohort has essentially matched population gains. The employment rate has largely held steady, albeit at a higher rate than seen throughout much of the country. This steady employment rate, however, is a key driver of Oregon’s slower job growth, due to the fact that much of the slack is gone.

All told, Oregon’s employment outlook calls for slower gains this year and next. Our office expects some further participation gains in 2019, although not fully regaining the 1990s’ employment rates. That said, job growth should be stronger than underlying gains in the labor force. However, after this year, job growth will slower further due to a tighter labor market, somewhat fewer in-migrants, and slower U.S. growth as the tax cuts fade and past interest rate increases cool economic activity.

Overall, the number of Oregonians available to work, our office’s measure of the potential labor force, is growing at near historic low rates. Growth is not expected to pick up much either due to the increasing number of Baby Boomer retirements in the coming decade. The combination of in-migration and the relative size of the Millennials and Gen Z means that Oregon will see ongoing growth, unlike some states in the Midwest and Northeast. However that growth will be slower than Oregon has experienced in past economic expansions.
See the Regional Section of this forecast for a detailed look at expected labor force growth across Oregon counties.

**Oregon’s Labor Market**

The Office of Economic Analysis examines four main sources for jobs data: the monthly payroll employment survey, the monthly household survey, monthly withholding tax receipts and the quarterly census of employment and wages. Right now all four measures of the labor market are improving. Jobs are being added, albeit at a slower rate. Wages are rising, both in aggregate and for each worker. The unemployment, while rising some in recent months, remains under what would historically be considered full employment for Oregon.

Since the fall, Oregon’s actual labor force has been growing just a hair faster than employment as measured by the household survey. As such, Oregon’s unemployment rate has risen from 4 percent last summer to 4.4 percent so far in 2019. There does not appear to be anything odd going on with the underlying dynamics of the household survey as the surveyed population growth and labor force participation rate are in-line with expectations. While such a low unemployment rate has only been seen a few times in Oregon’s modern history, it is important to continue monitoring these trends. To the extent that labor force is growing faster than job gains, it does signal some economic weakening. That said, this modest rise in the unemployment rate is all in unbenchmarked, or unrevised data. All told, the slight rise in Oregon’s unemployment rate is not yet a cause for concern but is an issue worth keeping a close eye on.

More importantly, wages in Oregon remain strong, although different measures of wages have diverged a bit in recent years. Withholding out of Oregonian paychecks continue to outstrip other measures of economic wages. This gap is larger than it has been historically. It is also seen across nearly all industries and not confined to a particular sector or two. Our office and the Department of Revenue continue to research the topic. One item impacting these trends is the increase in withholding out of retirement accounts (pensions and IRA distributions). Given the increase in retirements and stock market returns, such withholdings are an increasing share of all withholding in the state, but are not directly tied to the labor market. Even so, wage growth for Oregon workers remains strong. Oregon’s average wage, while lower than the nation’s, is at its highest relative point since the mills closed in the 1980s.

Overall, getting a handle of the health of Oregon’s labor market is being somewhat complicated by technical issues within the underlying payroll jobs data. For this reason the employment data in our office’s forecast is adjusted for two important technical purposes: seasonality at the detailed industry level and the upcoming
benchmark revisions\textsuperscript{3}. Specifically, our office uses the benchmarked, or revised employment data through 2018q3 and imputes the 2018q4 and 2019q1 employment data based upon the available preliminary Oregon estimates, national data, and our office’s economic forecast model. As such, for this quarterly forecast, the first pure forecast period is 2019q2.

In the first quarter, total nonfarm employment increased 1.8 percent over the past year. Growth was led by the private sector at 1.9 percent, while the public sector increased 1.3 percent. These rates of growth are a clear step down from the full-throttle rates seen a few years ago, however still remain fast enough to keep pace with population gains so far.

The nearby graph illustrates the number of job gains by major industry by the length of the bar. The percentage increase these changes represent is noted as well. The bars are color coded by growth rate relative to total employment growth. Industries with dark blue colored bars are growing at rates much faster than total employment, light blue bars represent industries which are growing approximately in line with the average, while grey bar industries are growing at rates significantly less than the statewide average.

So far in recovery, the large service sector industries have generally led job growth in terms of the number of jobs added and with above-average growth rates. These include jobs in professional and business services, health services, and leisure and hospitality industries. These three industries have gained nearly 16,000 jobs in the past year and account for 45 percent of all job gains across the state. Given these industries account for 38 percent of all Oregon jobs, they are increasing at a faster rate in the past year than the rest of the economy. This is in part due to slowdowns seen in retail, information and the public sector.

In terms of illustrating how each industry has fared over the Great Recession and so far in recovery, the second graph shows both the depths of recessionary losses\textsuperscript{4} and where each industry stands today relative to pre-recession peak levels.

\textsuperscript{3} Each year the U.S. Bureau of Labor Statistics revise the employment data – a process known as benchmarking. The current establishment survey (CES), also known as the monthly payroll survey, is benchmarked against the quarterly census of employment and wages (QCEW), a series that contains all employees covered by unemployment insurance. The monthly CES is based on a sample of firms, whereas the QCEW contains approximately 96 percent of all employees, or nearly a complete count of employment in Oregon. The greatest benefit of the CES is the timeliness – monthly employment estimates are available with only a one month lag – and these estimates are reasonably accurate. However the further removed from the latest benchmark, the larger the errors. The QCEW is less timely as the data is released approximately 3-4 months following the end of the quarter. The greatest benefit of the QCEW is that is a near 100 percent count of statewide employment. For these reasons, the CES is usually used to discuss recent monthly employment trends, however once a year the data is revised to match the historical QCEW employment trends. The last month of official benchmark data is September 2018. The QCEW is currently available through September 2018, thus the preliminary benchmark used here covers the October 2018 – March 2019 period.

\textsuperscript{4} Each industry’s pre-recession peak was allowed to vary as, for example, construction and housing-related industries began losing jobs earlier than other industries or the recession’s official start date per NBER.
Currently, twelve major industries are at all-time highs. Private sector food manufacturing, education, and health never really suffered recessionary losses – although their growth did slow during the recession. Professional and business services and leisure and hospitality have each regained all of their losses and are leading growth today. Over the past couple of years retail emploment, other services, transportation, warehousing and utilities, and construction, in addition to the public sector have surpassed their pre-recession levels and are at all-time highs. Most recently, wholesale trade and metals and machinery manufacturing have rully regained their recessionary losses. Additionally non-durable manufacturing excluding food is nearly back; this growth is led by beverages (breweries), chemicals, and plastics and rubber. In total, the eleven private sector industries at all-time highs account for 70 percent of all statewide jobs. The public sector accounts for an additional 16 percent of all jobs.

With the Great Recession being characterized by a housing bubble, it is no surprise to see wood products, construction, mining and logging and financial services (losses are mostly real estate agents) among the hardest hit industries. These housing and related sectors are now recovering, although they still have much ground to make up. Transportation equipment manufacturing suffered the worst job cuts and is likely a structural decline due to the RV industry’s collapse5. With that being said, the subsectors tied to aerospace are doing better and the ship and boat building subsector is growing again. Metals and machinery manufacturing, along with mining and logging, have shown the largest improvements since the depths of the recession.

Coming off such a deep recession, goods-producing industries exhibited stronger growth than in past cycles. While all manufacturing subsectors have seen some growth, they are unlikely to fully regain all of their lost jobs. The good news, certainly in the short-term, is that much of the manufacturing sector has returned to growth in the past year following declines a year or two ago. All told, Oregon manufacturers typically outperform those in other states, in large part due to the local industry make-up. Oregon does not rely upon old auto makers or textile mills. The state’s manufacturing industry is comprised of newer technologies like aerospace and semiconductors. Similarly Oregon’s food processing industry continues to boom6.

All told, each of Oregon’s major industries has experienced some growth in recovery, albeit uneven. As the economy continues to recover there will be net winners and net losers when it comes to jobs, income and sales. Business cycles have a way of restructuring the economy.

For additional information on the most recent quarter’s employment forecast errors, please refer to Table A.1 in Appendix A.

5 http://oregoneconomicanalysis.com/2012/07/10/rv-workers-and-reemployment/
**Leading Indicators**

Over the past year both of the Oregon-specific composite leading indicators have largely moved sideways. In any given month about half of the individual indicators are positive and half are negative. Currently, if we step back and look at the bigger picture, the vast majority of indicators are still in expansion territory but clearly slowing down. This signals continued economic growth and not an impending recession, or at least not yet anyway.

In March there are only two clear indicators flashing red: semiconductor billings and manufacturing hours worked. Interestingly enough, however, is that each industry these indicators pertain to continues to add jobs in Oregon. Of course, being *leading* indicators, they suggest less growth moving forward. For semiconductors, the industry is going through a rough patch as evidenced by recent quarterly earnings reports and conference calls. For manufacturing hours worked, as discussed in recent quarters, hours within food manufacturing is down to such a large extent it is pulling the total manufacturing hours down with it. This bear monitoring moving forward. But for the time being, the flipside of significantly fewer hours worked per employee is that the total number of employees in the sector continues to rise.

Outside of those two indicators, most are bouncing around from positive to negative depending upon the latest monthly reading. Two other indicators weighing on the composite series include the interest rate spread and industrial production. As discussed earlier, an inversion of the yield curve is a leading indicator. While the most-watched spread has yet to invert, it does continue to narrow. On industrial production, the overall manufacturing sector is seeing ongoing gains but slower ones. This is also seen in expansionary, but lower readings of the manufacturing purchasing managers index in 2019. Further complicating the goods-producing outlook is the ongoing strength of the U.S. dollar and trade-weighted Oregon dollar. A stronger dollar makes US- and Oregon-made goods more expensive to foreign buyers and lessens the impact on growth of net exports.

All told the data flow and Oregon’s leading indicators remain more of a mixed bag in the past year. Given that most U.S. data has firmed in recent weeks, with the exception being manufacturing for the most part, it is expected Oregon’s data will also firm.

In general, economic forecasters see a heightened risk of recession so far in 2019 but are not altering their baseline forecasts accordingly. They are acknowledging the risks, however. University of Oregon professor Jeremy Piger has created a real time probability of recession model, and finds there is a 1.9 percent chance the U.S. has entered into a recession. However, another recession will come, of that we can be sure. IHS Markit puts

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7 [http://pages.uoregon.edu/jpiger/us_recession_probs.htm/](http://pages.uoregon.edu/jpiger/us_recession_probs.htm/)
the probability of recession in the next year at 30 percent, while the Wall Street Journal Economic Forecasting Survey puts it at 26 percent.

Hopefully Oregon’s leading indicators will give a signal in advance of the next recession, which neither is doing today. While past experience is no guarantee of future performance, Oregon’s leading indicator series do have a good track record in their relatively brief history. Both series flattened out in 2006 and began their decline in advance of the Great Recession. Similarly both Oregon series reached their nadir in March 2009, a few months before the technical end of the recession (June 2009 per NBER) and about 9 months in advance of job growth returning to Oregon.

**Short-term Outlook**

While Oregon’s economic expansion continues, growth has slowed and stabilized. In recent years, the state has enjoyed robust, full-throttle rates of job gains in the 3-3.5 percent range, or nearly 5,000 jobs per month. No longer is this the case. Oregon is expected to continue to see healthy job gains – a bit more than 2,000 per month or about 2 percent over this year and into 2020 – but the state is now past its peak growth rates for this expansion. Importantly, such gains remain strong enough to hold unemployment down and account for ongoing population growth.

After these near-term job gains, supply side constraints and longer-run demographic trends weigh on growth to a larger degree. These supply side constraints include a tighter labor market, infrastructure, energy costs, capacity utilization and the like. The large wave of retiring Baby Boomers will weigh on job growth rates for the coming decade. There will be enough jobs overall, as the generational churn is hidden underneath the labor market’s surface.

The general characteristics of the current forecast remain the same as in recent quarters. Our office factored in the lower 2018 population estimates last quarter. Personal income is lowered slightly in 2019 and 2020 before being raised a some over the forecast horizon. The upward revisions are to non-wage income. Employment is largely unchanged, but up a tenth of a percent through 2023. This reflects upward revisions to construction, manufacturing and leisure and hospitality. The outlook for retail trade has been downgraded. Finally, the unemployment rate forecast is increased by up to half a percentage point over the next couple of years, largely in keeping with the tracking in recent months and expectations of future labor force participation rates.

### Economic Forecast Summary

<table>
<thead>
<tr>
<th></th>
<th>Quarterly</th>
<th>Annual</th>
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<tbody>
<tr>
<td><strong>Personal Income, Nominal</strong></td>
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<tr>
<td>U.S.</td>
<td>3.6</td>
<td>3.8</td>
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<tr>
<td>Oregon</td>
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<td>4.4</td>
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<tr>
<td><strong>Wages and Salaries, Nominal</strong></td>
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<tr>
<td>Oregon</td>
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<tr>
<td><strong>Population</strong></td>
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<tr>
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<td>0.7</td>
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<tr>
<td>Oregon</td>
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<tr>
<td><strong>Housing Starts</strong></td>
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<tr>
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<tr>
<td>Oregon</td>
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<tr>
<td><strong>Unemployment Rate</strong></td>
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<tr>
<td>U.S.</td>
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<td>3.6</td>
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<tr>
<td>Oregon</td>
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<tr>
<td><strong>Total Nonfarm Employment</strong></td>
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<tr>
<td>Oregon</td>
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<td>2.0</td>
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<tr>
<td><strong>Private Sector Employment</strong></td>
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<tr>
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<tr>
<td>Oregon</td>
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</table>
There was one large technical revision at the start of 2018 that will impact Oregon job growth rates for those digging into the details. This has to do with how home health workers are treated in the data. A decade ago, such workers were counted as independent contractors. As such they would be counted in the household survey but not the employer survey. Back in 2010, these home health workers were brought into the employer survey, or the Current Employment Statistics (CES) as government employees. While many of these workers were paid via public sector programs, such employees really were not government workers per se. Beginning in 2018, home health workers are now being counted as private sector health workers, specifically in the social assistance subsector. The end result here is that the forecast now shows government employment in Oregon declining by nearly 5 percent in 2018, while private sector health care grows by nearly 10 percent in 2018. Absent this reclassification, the underlying outlooks for both the private and public sectors remains relatively unchanged.

The state’s new minimum wage law, passed during the 2016 legislative session, will also impact the Oregon economy over the forecast horizon. Using estimates provided by the Oregon Legislative Revenue Office, along with the academic literature, our office’s outlook includes a slowdown in job growth due to the higher minimum wage moving forward. While the impact is small when compared to the size of the Oregon economy, it does result in approximately 40,000 fewer jobs in 2025 than would have been the case absent the legislation. Our office is not predicting outright job losses due to the higher minimum wage, however we are expecting future growth to be slower as a result. In the near term, the higher minimum wage boosts overall state income as low-wage workers receive raises. Over the medium term, employers are expected to adjust to the higher wages and increase worker productivity, possibly via capital for labor substitutions. Our office has incorporated these overall effects into the outlook for wages and in the industries which employ the largest numbers of low-wage workers. These include the obvious like leisure and hospitality, and retail trade, but also health care and food processing manufacturing, among others. To date, the higher minimum wage in Oregon does not appear to be a binding constraint on the economy. Wages are higher today in large part due to the tight labor market where firms must bid up compensation to attract and retain workers.

Private sector growth, measured by the number of jobs created, will be dominated by the large, service sector industries like professional and business services, leisure and hospitality and health.

Nevertheless, goods-producing industries, while smaller, had previously been growing at above-average rates. Expectations in recent forecasts have been that these goods-producing industries would slow. Growth over the next few years would be considerably less than that seen in the past few years.

Even construction is expected to add jobs at a slower pace even as the housing rebound continues. This is in part due to the fact that growth must cool off after the exceptionally strong gains in construction in recent years. Additionally construction employment growth has far outpaced increases in new home construction. One side effect of this pattern is that productivity within the construction industry is declining. More workers producing fewer units of new housing or remodel activity means industrywide productivity is lower today than a decade or two ago. This is evident in the national data as well and is something researchers continue to dig into. No consensus has been reached as of yet.
Manufacturing is expected to see growth, albeit slow growth in the coming years. The good news is that after sustaining losses during the middle of 2016, manufacturing employment in Oregon has added jobs again. As the manufacturing cycle continues to strengthen some, additional gains are expected. This growth will be strongest among the state’s food processors, and beverage manufacturers, predominantly breweries. That said, any further global weakening or strengthening of the dollar will weigh further on the outlook. Oregon as a whole is not expected to fully regain all of its Great Recession related manufacturing job losses. That said, both the Portland and Medford metro regions have fully regained their losses. Nationwide about 1 out of 5 metros have done so as well.

Public sector employment at the local, county and state level for both education and non-education workers is growing in Oregon, as state and local revenues continue to improve along with the economy. Over the forecast horizon, government employment is expected to grow roughly in line with population growth and the increased demand for public services, albeit just a hair faster than population growth alone. One public sector risk to the outlook is PERS. The extent to which government hiring by local and state entities is impacted in the coming years as contributions increase is unknown.

Along with an improving labor market, stronger personal income gains are here, although tax law changes have pushed around growth rates in the recent past (see the expiring Bush tax cuts and the fiscal cliff) and may do so again moving forward. Personal income is forecasted to grow 5.0 percent in 2019, picking up to 5.5 percent in 2020 and then tapering thereafter to 5.3 percent in 2021, 5.0 percent in 2022 and 4.5 percent in 2023.

As the economy continues to improve, household formation is increasing too, which will help drive up demand for new houses. Household formation was suppressed earlier in the recovery, however the improving economy and increase in migration have returned in full force. Even as more young Oregonians are living at home, as the Millennials continue to age into their late-20s through their mid-30s, demand for housing will increase as well. In fact, given the underlying demographics, household formation should outpace overall population growth in the coming years.

Housing starts to begin the year have totaled just over 19,000 at an annual pace. A level of about 21,000 starts is Oregon’s long-run average, at least prior to the housing bubble. The outlook calls for further gains as housing production increases to meet demand. Starts will total 20,600 in 2019, and increase to 21,800 in 2020. Over the extended horizon, starts are expected to average around 24,000 per year to meet demand for a larger population and also, partially, to catch-up for the underbuilding that has occurred in recent years.

A more complete summary of the Oregon economic outlook and forecast changes relative to the previous outlook are available as Table A.2 and A.3 in Appendix A.
Forecast Risks

The economic and revenue outlook is never certain. Our office will continue to monitor and recognize the potential impacts of risk factors on the Oregon economy. Although far from comprehensive, we have identified several major risks now facing the Oregon economy in the list below:

- **U.S. Economy.** While Oregon is more volatile than the nation overall, the state has never missed a U.S. recession or a U.S. expansion. In fact, Oregon’s business cycle is perfectly aligned with the nation’s, at least when measuring peak and trough dates for total nonfarm employment. If anything, Oregon actually leads the U.S. by a month or two. The fact that there are a fewer worrisome trends at the U.S. level but the slowdown has hit Oregon means there should be some concerns about the outlook. Should the U.S. fall into recession, Oregon will too. That said, should the U.S. economy accelerate, Oregon’s economy should receive a similar boost as well.

- **Housing affordability.** Even as the housing market recovers, new supply has not kept up with demand (both from new households and investor activity). This applies to both the rental and ownership sides of the market. As such, prices have risen considerably and housing (in)affordability is becoming a larger risk to the outlook. Expectations are that new construction will pick up in the next year or three, to match the increase in demand, which will alleviate some price pressures. However to the extent that supply does not match demand, home prices and rents increasing significantly faster than income or wages for the typical household is a major concern. While not included in the baseline outlook, significantly worse housing affordability may dampen future growth given Oregon’s reliance on net in-migration.

- **Global Spillovers Both Up and Down.** The international list of risks seems to change by the day: a hard Brexit, sovereign debt problems in Europe, equity and property bubbles in places like Canada, South America and Asia, political unrest in the Middle East and Venezuela, nuclear arsenal concerns with North Korea, and commodity price spikes and inflationary pressures in emerging markets. In particular, with China now a top destination for Oregon exports, the state of the Chinese economy – and its real estate market, or public debt burden – has spillover effects to the Oregon economy. Any economic slowing in Asia is a potential threat to the Pacific Northwest.

- **Federal fiscal policy.** The uncertainty regarding federal fiscal policy remains a risk. Some policies are likely to impact Oregon than the typical state, while others maybe not as much. The good news for Oregon is that outside of outright land ownership, the federal government has a relatively small physical presence in the state. This means that direct spending reductions are less likely to hurt Oregon. Of course, it also limits the local benefit from any potential increases in federal spending, as was recently passed by Congress in early 2018. In terms of federal grants as a share of state revenue, Oregon ranks 29th highest. For federal procurement as a share of the economy, Oregon ranks 48th highest. Oregon ranks below average in terms of military-dependent industries as well. The one area that Oregon ranks above average is in terms of direct federal employment, ranking 19th highest among all states. Oregon also is exposed to an above-average share of federal transfer payments to households. Transportation funding is also a major local concern. Overall, the direct impact may be less than in other states but the impact will be felt nevertheless, particularly as our closest neighboring states have large federal and military workforces.
• Climate and Natural Disasters. Weather forecasting is even more difficult than economic forecasting a year or two into the future. While the severity, duration and timing of catastrophic events like earthquakes, wildfires and droughts are difficult to predict, we do know they impact regional economies. Fires damage forests and tourism. Droughts in particular impact our agricultural sector and rural economies to a larger degree. Whenever Cascadia, the big earthquake, hits, we know our regional economy and its infrastructure will be crippled and in need of immediate repairs. Some economic modeling suggests that Cascadia’s impact on Oregon will be similar to Hurricane Katrina’s on New Orleans. Longer-term issues like the potential impact of climate change on domestic migration patterns are likewise hard to predict and outside our office’s forecast horizon. There is a reasonable expectation that migration flows will continue to be strong as the rest of the country becomes less habitable over time.

• Commodity price inflation. Always worrisome is the possibility of higher oil (and gasoline) prices. While consumer spending has held up pretty consistently in this recovery, anytime there is a surge in gas prices, it eats away at consumers’ disposable income, leaving less income to spend on all other, non-energy related goods and services. This impact is certainly more muted today, but a risk nonetheless.

• Federal timber policy. Even with a temporary reinstatement of payments, it has been and it is clear that federal policymakers will not reinstate the program the same as before, however negotiations are ongoing for more sustainable timber harvests and related revenue. In the meantime, reductions in public employment and services are being felt in the impacted counties. For more information from a historical perspective, see two recent blog posts, here and here.

• Initiatives, referendums, and referrals. Generally, the ballot box and legislative changes bring a number of unknowns that could have sweeping impacts on the Oregon economy and revenue picture.

Alternative Scenarios

The baseline forecast is our outlook of the most likely path for the Oregon economy. As with any forecast, however, many other scenarios are possible. In conjunction with the Legislative Revenue Office, this forecast provides three alternative scenarios, which are modeled on growth patterns over previous business cycles.

Optimistic Scenario:

The expansion is able to gather steam despite fading fiscal policy. The relatively lackluster economic growth seen in the earlier stages of recovery, the manufacturing weakness in 2015 and 2016 and the slowing in U.S. personal income all recede into the rearview mirror of history and the U.S. economy builds momentum throughout 2019. The economy is soon firing on all cylinders. Economic growth remains above potential longer, resulting in stronger job and income gains. This stronger growth leads to more consumer spending and more business investment. The productivity gains in recent quarters prove sustainable.

In Oregon, job gains are broad based with strong growth in all private sector industries. The unemployment rate remains lower than under the baseline scenario as individuals are able to find employment more readily and income growth accelerates. The labor force participation gap closes and even turns positive as more Oregonians

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enter the labor market. The increase in employment and income support a self-sustaining economic expansion in which new income fuels increased consumer spending (and debt reduction) which begets further increases in employment. Such an expansion increases housing demand as newly employed households (and increasing income for existing households) find their own homes after doubling-up with family and friends during the recession. This results in new construction returns to normal levels about a year earlier than the baseline.

### Mild Recession Scenario:

The slowdown in Oregon employment, population and GDP in 2018 carries over into 2019. The housing market stall worsens, removing one potential driver of growth. Strained trade relations result in falling exports, business confidence tumbles and so does capital spending. The U.S. dollar strengthens, choking off the manufacturing cycle. These factors are enough weight on the recovery that by late-2019 the economy slides back into recession. Job losses ensue and while not severe – about 49,000 jobs in Oregon when it is all said and done – it takes a toll on business income, housing starts and personal income. The unemployment rate returns to nearly 8 percent. The net effect of the mild recession is an extended period of prolonged economic weakness, not unlike Japan’s so-called Lost Decade(s). Although inflation is expected to remain positive, a key difference.

### Severe Recession Scenario:

After expanding for 10 years at relatively lackluster growth rates, the U.S. economy falls back into recession. Industrial production declines and the slower personal income growth in the U.S. worsens. Strained trade relations develop into an all-out trade war. The Fed, already lacking in traditional monetary policy ammunition, is not able to stave off such an impact. While the catalyst may be different, the economic effect is similar to late 2008 and early 2009, although not quite as severe when the dust settles. This is little comfort when the unemployment spikes back to 10 percent and more than 144,000 Oregonians lose their jobs by early-2021.

Besides the domestic economic headwinds and Federal Reserve tightening, the likely culprit in this scenario is either a meltdown of the financial markets sparked by some geopolitical shock, or quickly rising inflation. Economic growth in the U.S., while fairly steady as of late, is not nearly strong enough to withstand an external financial shock of this magnitude, nor a Federal Reserve quickly raising rates to fight inflation. Further economic effects of a recession this size are personal income losses of around 5 percent, about three-quarters the size of the Great Recession losses in Oregon. Housing starts plummet to near historical low levels of construction and home prices decline further. On the bright side, when construction does rebound, it will result in a surge of new
home building that will rise above the state’s long term average level of building due to pent-up demand for housing and that the state will have under built housing during this time period.

**Extended Outlook**

IHS Markit (formerly IHS Economics and IHS Global Insight) projects Oregon’s economy to fare well relative to the rest of the country in the coming years. The state’s Real Gross State Product is projected to be the seventeenth fastest among all states across the country in terms of growth with gains averaging 2.0 percent from 2018 through 2023. Total employment is expected to be the eighth strongest among all states at an annualized 1.0 percent, while manufacturing employment will be the fourth fastest in the country at 0.4 percent. Total personal income growth is expected to be 4.6 percent per year, the sixteenth fastest among all states, according to IHS Economics.

Our office is equally, if not more bullish in terms of Oregon’s relative growth prospects. Much of Oregon’s advantage comes from population growth, specifically the ability to attract and retain young, working-age households. Our office expects population growth to average 1.2 percent over the next handful of years. Recently, IHS lowered their forecast for Oregon population growth to 1.0 percent over the same time period. These differences are not inmaterial. It amounts to a 5 year difference of nearly 45,000 Oregonians of which between two-thirds and three-fourths would be among the working-age population. As such, our overall economic outlooks have diverged just a bit.

OEA has identified three main avenues of economic growth that are important to continue to monitor over the extended horizon: the state’s dynamic labor supply, the state’s industrial structure and the current number of start-ups, or new businesses.

Oregon has typically benefited from an influx of households from other states, including an ample supply of skilled workers. Households continue to move to Oregon even when local jobs are scarce, as long as the economy is equally bad elsewhere, particularly in California. Relative housing prices also contribute to migration flows in and out of the state. For Oregon’s recent history – data available from 1976 – the labor force in the state has both grown faster than the nation overall and the labor force participation rate has been higher. However while the past two years have brought considerable improvements there remain potentially worrisome signs, particularly when the next recession comes.

First, on the bright side, all of the recessionary-induced declines in the labor force itself have been reversed in the recent years. Oregon’s labor force has never been larger. However, the participation rate remains a little lower than expected, when adjusting for the size of the population and the aging demographics. Oregon’s participation rate continues to rebound in recent years, which is great news, however any participation gap is still cause for concern. While much of the past decade’s patterns can be attributed to the severe nature of the Great Recession, and even the lackluster housing boom itself, some damage is likely permanent. The longer the expansion continues without seeing rising participation rates among some segments of the population, the
more likely the damage is permanent. A stronger economy and a longer expansion will minimize any permanent damage.

All told, our office’s baseline outlook at this point in the business cycle calls for a little more improvement in the near-term for both the labor force participation rate and the employment to population ratio. These gains are due to the shorter run cyclical rebound in the economy, before longer-run demographic trends will weigh on these measures. Focusing just on the prime working age cohorts reveals stronger improvements and a better outlook.

Oregon’s industrial structure is very similar to the U.S. overall, even moreso than nearly all other states. That said, Oregon’s manufacturing industry is larger and weighted toward semiconductors and wood products, relative to the nation which is much more concentrated in transportation equipment (autos and aerospace). However, these industries which have been Oregon’s strength in both the recent past and historically, are now expected to grow the slowest moving forward.

Productivity and output from the state’s technology producers is expected to continue growing quickly, however employment is not likely to follow suit. Similarly, the timber industry remains under pressure from both market based conditions and federal regulations. Barring major changes to either, the slow growth to downward trajectory of the industry in Oregon is likely to continue.

With that being said, certainly not all hope is lost. Those top industries in Oregon comprise approximately 7 percent of all statewide employment. And many industries in which Oregon has a larger concentration that then typical state are expected to perform quite well over the coming decade. These industries include management of companies, food and beverage manufacturing, published software along with some health care related firms.

The state’s real challenges and opportunities will come in industries in which Oregon does not have a relatively large concentration. These industries, like consulting, computer system design, financial investment, and scientific R&D, are expected to grow quickly in the decade ahead. To the extent that Oregon is behind the curve, then the state may not fully realize these gains if they rely more on clusters and concentrations of similar firms that may already exist elsewhere in the country.

Another area of potential concern that may impact longer term economic growth is that of new business formation. Over the past few years, the number of new business license applications with the Oregon Secretary of State have begun to grow again and even accelerate. However data available from the U.S. Census Bureau and Bureau of Labor Statistics clearly indicate that entrepreneurship and business formation remain at subdued levels and rates.

The share of all businesses that are start-ups, either in Oregon or across the nation, is effectively at an all-time low, with data
starting in the late 1970s. Associated start-up employment follows a similar pattern. The concern is that new businesses are generally considered the source of innovation and new ideas, products and services that help propel economic growth. To the extent that fewer start-ups indicate that R&D more broadly is not being undertaken, slower growth is to be expected moving forward. However, if the larger firms that have won out in today’s marketplace are investing in R&D and making those innovations themselves, then the worries about the number of start-ups today is overstated. It can be hard to say which is the correct view. However seeing these longer run, downward trends in new business formation warrants, at the very least, concern about future growth prospects.

Importantly, Oregon also enjoys the long-term advantages of low electricity costs; a central location between the large markets of California, Vancouver and Asia; clean water; low business rents and living costs when compared to other Left Coast locations; and an increasingly diverse industrial base.

Finally, one long-run concern for some policymakers and think tanks has been Oregon’s relatively low income and wage numbers in recent decades. Back in the heyday of the timber industry, Oregon’s per capita personal income and median household income were in-line with the nation overall. At this time, Oregon’s average wage was lower in part due to the industrial composition, but these lower wages were made up at the statewide level by demographics and household composition.

Even since the timber industry restructured following the severe early 1980s recessions, Oregon’s relative incomes have been lower. The regional economy experienced a major shock and it took quite a long time to recover. However, finally, in this current economic expansion, Oregon is regaining the ground lost decades ago.

Oregon’s median household income now matches the U.S. overall. Average wages in Oregon are at their highest relative point since the mills closed in the early 1980s. And the state’s per capita personal income is back to where it was prior to the dotcom crash in 2001.
In terms of the outlook, expectations are for Oregon’s relative positions to hold steady in the coming years. The primary reason for this is that Oregon’s average wages have already accelerated in recent years, even as U.S. wages are just now picking up. Our office expects Oregon’s average wage to continue to increase by 4 percent per year. However as the U.S. accelerates closer to Oregon’s annual rate, Oregon’s growth advantage in recent years will lessen.

One major factor influencing per capita personal income trends is the relative incomes at the very top of the distribution. Make no mistake, Oregon’s highest-income households have done well financially. However incomes at the top of the national distribution have increased even further. This gap among the richest households is large enough, and the incomes high enough to weigh on Oregon’s overall per capita income figures.

**Regional Comparisons**

Economic output is the combination of the number of workers and how productive each worker is. As discussed earlier in the forecast, the number of available workers nationwide and in Oregon is currently growing at slow rates and expected to continue to do so in the coming decade. This is largely due to aging demographics and the impact of the Baby Boomer retirements. These demographic trends weigh on pretty much every economic measure we have from housing markets and public revenues to labor markets and economic dynamism.

The Economic Innovation Group recently released a report looking at the aging demographics across the country and found that half of all U.S. counties lost population over the past decade and 80% of counties lost prime working-age population. Here in Oregon the situation is not as dire as “only” 3 of our 36 counties saw minor population losses during the past 10 years (Grant, Harney, Sherman). Relative to the rest of the country, these counties fall more in the middle of the distribution given the worse trends seen throughout much of the Midwest and Northeast. While Oregon’s demographics and population growth are stronger than much of the country, and the gains more widespread within the state, Oregon is not immune and faces the same big picture challenges, albeit to a slightly less degree.

Looking forward, demographics are going to get worse before they get better. In the coming decade, Oregon’s counties will avoid significant population losses, although there will be some. However 11 of Oregon’s 36 counties will experience a shrinking potential labor force. In 2030, there will be fewer residents available for work and likely fewer workers overall in these counties. A few other counties will see no growth in their potential labor force. All told, the number of residents available for work in every single county in Oregon will increase at a slower rate than total population growth due to the underlying demographics.
That said, the outlook does not call for a downward spiral forever. Once we get past the bulge of upcoming retirements, the outlook improves. In particular, rural Oregon will see the biggest swings and improvements relative to recent years. The reason is what matters is when one ages from her 50s to her 70s. This is when she goes from her peak-working and peak-earning years to being retired. Given demographic trends in rural areas, including some young adults moving away, most rural communities are nearly all the way through this demographic drag. As such, expected growth rates in the potential labor force along Oregon’s North Coast and in Northeastern and Southwestern Oregon will pick up considerably in the late 2020s and early 2030s.

Conversely, while urban Oregon will still outpace rural Oregon, the state’s fastest-growing areas are set to slow down in the coming years. The inflow of new migrants will slow along with the mature expansion and the demographic drag hits. Growth will taper the most in Central Oregon (the Bend MSA in particular) and the Portland region. Other urban areas like the Rogue and Willamette Valleys will see relatively steady gains.

As the number of potential workers grows slowly, and the number of retirees increase, it shifts the patterns of growth and the types of incomes seen in regional economies. Today in many parts of rural Oregon, transfer payments – benefits and payments made by the government to residents – account for 1 out of every 3 dollars of local income.

Transfer payments generally provide financial assistance to our low-income neighbors in need, hopefully temporarily as they get back on their feet, and to ensure some standard of living in old age. The bulk of Oregon’s transfer payments are for Social Security and Medicare, which are increasing over time due to underlying demographics. This is particularly true in our rural communities which have experienced less economic growth – meaning fewer wages and less business income – and a population aging faster due to out-migration of young adults and in-migration of retirees.

Contrary to some beliefs, transfer payments to assist our low-income neighbors do not account for a larger source of income here in Oregon than they do nationwide. Programs like EITC, SNAP, TANF, WIC and unemployment insurance comprise the same share of local income today as they do in the typical state. Now, given Oregon’s more volatile economy, our needs increase more than the typical state in recession. However, in expansion this gap closes due to Oregon’s stronger economic and income gains.

All told, demographics are a very powerful force. For now they are largely pointing in the wrong direction for strong economic and business growth. A slower-growing, and in some places an outright smaller economy is and will be a tremendous challenge. It weighs on the workforce, housing markets, business sales, and public services. That said, if the latest population forecasts are reasonably accurate, the trends will be improving in a handful of years as we reach peak retirements.