to largely flash green, particularly as initial claims for unemployment insurance – a measure of layoffs – remain near historic lows.

The concern is that should firms pull back further on hiring and unemployment rises, then expectations are that consumer spending will weaken as household confidence wanes. Another risk for spending is that the latest escalation of the trade war will impact consumer products the most and those higher prices will curb household spending. At that point, a vicious, recessionary cycle can take hold as consumers pull back, giving firms even more reason to be wary, delay investments and lay off workers.

**Bottom Line:** The U.S. economy remains in expansion and the baseline outlook calls for continued, albeit slower, growth. However the risk of recession is clearly rising. The typical catalysts for recession are not rearing their heads but the ongoing and escalating trade tensions are weighing on the economy and business activity. Expansions do not die of old age, but rather due to policy mistakes. All of this has financial markets spooked and the Federal Reserve taking out insurance rate cuts in hopes of heading off a recession. Time will tell whether this is the top of the cycle or just a rough patch. It’s important to remember that the U.S. does not know what the eleventh year of an economic expansion looks like as we have never experienced one. The expansion has now entered into uncharted and choppy waters.

**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. While local job gains are effectively matching the average state in recent quarters, we know forthcoming U.S. revisions will widen the gap a bit.

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.

The slower pace of job gains today is not unexpected. To date it appears that the slower net employment growth is due to higher employment rates among working-age Oregonians, increasing Baby Boomer retirements, and slower in-migration in a mature expansion. Unemployment is not increasing, and new entrants into the labor market represent the largest share of Oregonians currently unemployed. Overall the slowing in Oregon job growth appears to be for good economic reasons.

Like the nation overall, the Oregon economic outlook calls for ongoing, but slower growth from today’s relatively strong vantage point. This has a few different implications for firms and households.

Businesses face a combination of issues. First, sales will continue to grow. Firms will need to invest and hire to chase those increasing sales, market share, and profits. Second, however, the pace of those sales increases will be slower. Migration and job growth are tapering in a mature expansion, meaning there will be more potential customers but the increases next year will be smaller than this year. Third, the increased uncertainty regarding the economic outlook may have firms wary of investing and hiring as they may be less confident they can recoup
the fixed costs of expanding if the underlying sales do not materialize. Firms, as always, need to find the right balance. Fourth, businesses continue to face a relatively tight labor market in which attracting and retaining workers remains a key issue. To fill positions, firms must compete on price and also continue to cast a wider net and to dig deeper into their resume stacks to find candidates they may have previously passed over in a different labor market.

For households, a slowing economic outlook still brings good news, although a recession clearly does not. For Oregonians not working today, there has not been this strong of a labor market since the late 1990s. Job openings remain plentiful and firms are more willing to overlook incomplete skill sets or gaps on resumes in order to hire and expand. Now, a strong economy cannot overcome structural mismatches in terms of skills or geography, but it does ease cyclical and frictional reasons for unemployment. For those already working, a tighter labor market raises wage growth. The outlook calls for 4 percent average wage growth per year, similar to what Oregon has experienced in recent years.

Now, overall household income growth is expected to slow even if per worker wage growth remains strong. The reason is that household incomes, at least for those in the middle of the distribution, are largely about whether or not a household member is working, how many hours they are working, and then their hourly wage. Even if the latter two items remain strong, and expectations are they will be, the slowdown in job growth overall will likely translate into relatively smaller increases in household income as most members of working-age households already have a job. Going from no job to any job is usually a bigger increase in income than going from a part-time job to a full-time job. That said, the strong labor market should continue to result in strong income gains from those in the lower parts of the distribution.

Note: The 2018 American Community Survey data will be released in late September. It will likely show further statewide improvements in terms of rising income, falling poverty, and the like. Our office will highlight the newest Census data in the December forecast.

Oregon and the Trade War

The combination of a strong U.S. dollar, slowing global growth, and escalating trade tensions is weighing on the economy. However, so far the direct impacts of the trade war have yet to really affect top line data here in Oregon. Specifically, manufacturing output and employment are holding up and outpacing national figures. This is undoubtedly good news and contributes to Oregon’s stronger overall growth.

Nevertheless, upon a deeper dive, cracks are beginning to form just a bit. Weekly hours worked in manufacturing are dropping quickly so far in 2019, with Oregon’s decline more than twice the nation’s. This gap between ongoing employment gains and fewer hours worked per employee is not sustainable. Some of it may
be noise in the data, however, given the entire situation, our office’s outlook calls for few manufacturing job gains over the forecast horizon.

Furthermore, while Oregon exports are down over the past year or two, they are holding up relatively well when compared to other states. This is in large part due to a few, isolated increases masking weakness elsewhere in the data.

In particular, Oregon exports to China are surging due to increases in computer and electronic products and chemicals. So far these have not been impacted by the tariffs which would likely dampen export activity. Additionally it is an open question as to whether these increases represent new growth opportunities or firms trying to get ahead of any potential escalation in the trade war. The fact that these exports are likewise not surging to the rest of the world suggests it is more the latter than the former. Another issue to consider is that Oregon tech exports, to a large degree, represent within firm shipments and more closely follow technology product development cycles than the ebbs and flows of global demand.

That said, when looking at other sectors, exports to both China and the rest of the world are down in recent years. There have been isolated increases in both machinery and wheat to China in early 2018, but these are outliers and could represent products being shipped in advance of future trade issues. Note that the decline in timber and related exports to China is more pronounced in recent years, however if one were to extend the chart back to when Russian log tariffs were reduced, export trends would be more comparable in the big picture.

In terms of state level impacts, the International Monetary Fund recently modeled various U.S. – China trade scenarios and found that Oregon ranks toward the middle of the pack across states. This is largely due to the fact that while Oregon exports a lot to China, the state is less exposed to the sectors most impacted by the trade dispute. Namely these include auto manufacturing and mining and extraction. The one exception being agriculture, where Oregon does see more exposure than many states and those exports are currently down.

In recent discussions, the Governor’s Council of Economic Advisors highlighted the difference in the outlook or cause for concern in commodities versus specialized products. To the extent that commodity exports are down

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1 It has been reported that much of the increase in Oregon chemical exports in the past decade is actually Canadian potash that is railed to Oregon before being exported to Asia. This activity supports trade-related jobs in the state, but these export figures overstate the economic impact of the industry.

then U.S. exporters can and will need to find other international markets to sell their goods. Additionally, given the recent Chinese retaliation of not buying any U.S. agricultural products, these adjustments will clearly need to be accelerating and ongoing in order to avoid further declines in export activity.

On the other side, it can be even more difficult to establish new markets and find new customers for specialized or niche products and services as they are not as interchangeable as commodities. As such, it will likely take more time for global trade patterns to shift for these customized products.

Finally, most economic data is available through early summer and the trade war escalation is more recent. It is reasonable to expect these cracks to widen as the data begins to catch up to ongoing developments.

**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 rate is holding steady and remains under what would historically be considered full employment for Oregon, although the share of prime working-age Oregonians without a job indicates there is room for further improvement.

While the headline unemployment rate is relatively unchanged in the past year, the underlying dynamics behind its modest rise and fall during this time are worth monitoring. From the fall through the spring, labor force growth was outpacing employment gains, leading to a rising unemployment rate. However, in recent months employment has held steady in the household survey while the labor force participation rate has dropped, leading to a lower unemployment rate. Provided such trends are not revised away – a very real possibility given recent years’ revisions – it would signal economic weakening. Given the preliminary, or unbenchmarked nature of the data, there is no real cause for concern today but these trends are 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. Specifically, our office uses the benchmarked, or revised employment data through 2018q3 and imputes the 2018q4 through 2019q2 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 2019q3.

In the second 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.

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 14,000 jobs in the past year and account for 40 percent of all job gains across the state. Now, given these industries account for 38 percent of all Oregon jobs, today they are increasing at a similar rate as the rest of the economy. Growth in the past year is being led to a larger degree by construction, manufacturing, and transportation, warehousing, and utilities.

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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 March 2019, thus the preliminary benchmark used here covers the October 2018 – March 2019 period.
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\(^4\) and where each industry stands today relative to pre-recession peak levels.

Currently, thirteen 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 employment, 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. Additionally, wholesale trade and metals and machinery manufacturing have fully regained their recessionary losses. Most recently non-durable manufacturing excluding food is all the way back back; this growth is led by beverages (breweries), chemicals, and plastics and rubber. In total, the twelve private sector industries at all-time highs account for 71 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 collapse\(^5\). 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 boom\(^6\).

\(^4\) 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.

\(^5\) http://oregoneconomicanalysis.com/2012/07/10/rv-workers-and-reemployment/

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.

**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 June there are only three clear indicators flashing red: U.S. industrial production, Oregon manufacturing hours worked, and the Oregon dollar index. As discussed earlier, the trade war is weighing on the data which is seen here as well. To date, manufacturing employment is growing but given that *leading* indicators are down suggests less growth moving forward.

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\(^7\) model, and finds there is a 0.9 percent chance the U.S. has entered into a recession. However, another recession will come, of that we can be sure. IHS Markit puts the probability of recession in the next year at 35 percent, while the Wall Street Journal Economic Forecasting Survey puts it at 34 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

\(^7\) [http://pages.uoregon.edu/jpiger/us_recession_probs.htm/](http://pages.uoregon.edu/jpiger/us_recession_probs.htm/)
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 although total personal income and employment are revised up slightly over the medium- and long-run.

<table>
<thead>
<tr>
<th>Economic Forecast Summary</th>
<th>Quarterly</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income, Nominal</td>
<td>U.S. 5.0</td>
<td>4.7</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 6.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Wages and Salaries, Nominal</td>
<td>U.S. 3.5</td>
<td>4.3</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 5.5</td>
<td>6.7</td>
</tr>
<tr>
<td>Population</td>
<td>U.S. 0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Housing Starts</td>
<td>U.S. 1.26</td>
<td>1.21</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 1.26</td>
<td>1.21</td>
</tr>
<tr>
<td>U.S. millions, Oregon thousands</td>
<td>21.6</td>
<td>21.8</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>U.S. 3.6</td>
<td>3.5</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 4.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Total Nonfarm Employment</td>
<td>U.S. 1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 1.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Private Sector Employment</td>
<td>U.S. 1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>% change</td>
<td>Oregon 1.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

There is one categorical change made to the forecast, which is to switch the inflation variable to the Consumer Price Index for All Urban Consumers, West Region (All Items) to align with HB 2118 (2019). For most of our office’s history, we used the Portland-Salem CPI however in 2018 the Bureau of Labor Statistics stopped publishing that series due to budget cuts and realigning their work products. Portland is now the largest metropolitan area in the nation without its own CPI. BLS is still collecting local data but not publishing local estimates. HB 2118 standardizes inflation calculations throughout statute and our office is now forecasting the same inflation metric.

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 very slow growth in the coming years. 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 5.4 percent in 2019, picking up to 5.5 percent in 2020 and then tapering thereafter to 5.2 percent in 2021, 5.0 percent in 2022 and 4.7 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 21,000 at an annual pace, which is about the level of Oregon’s long-run average, at least prior to the housing bubble. The outlook calls for a few more gains as housing production increases to meet demand. Starts will total 21,500 in 2019, and increase to 22,300 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 more worrisome trends or risks at the U.S. level means there should be concerns about the Oregon 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 a bit 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 as fewer people can afford to move here, lowering net in-migration and the size of the labor force.

- **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 Hong Kong, 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, or deteriorating relations in or with 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 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 today8, but a risk nonetheless.

• Federal timber policy and transfers impact regional economies and local governments. Reductions in public employment and services are being felt in the impacted counties in recent years and decades. For more information from a historical perspective, see two recent blog posts, here and here9.

• 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.

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http://oregoneconomicanalysis.wordpress.com/2013/05/28/timber-counties/
**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 as the trade tensions and manufacturing weakness fade and recede into the rearview mirror of history. The U.S. economy builds momentum into 2020. The economy is soon firing on all cylinders, resulting in faster productivity growth which raises the speed limit of overall gains. Wages and incomes increase likewise increase at a faster rate. All of this results in stronger consumer spending and more business investment.

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 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.

<table>
<thead>
<tr>
<th>Alternative Scenarios</th>
<th>Sep 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment</strong></td>
<td>2019  2020  2021  2022</td>
</tr>
<tr>
<td>Baseline</td>
<td>1.8%  1.8%  1.3%  1.0%</td>
</tr>
<tr>
<td>Optimistic</td>
<td>2.1%  4.0%  2.0%  0.8%</td>
</tr>
<tr>
<td>Mild Recession</td>
<td>1.8%  0.6%  -1.7%  -0.1%</td>
</tr>
<tr>
<td>Severe Recession</td>
<td>1.6%  -2.7%  -4.2%  1.3%</td>
</tr>
<tr>
<td><strong>Personal Income</strong></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>5.4%  5.5%  5.2%  5.0%</td>
</tr>
<tr>
<td>Optimistic</td>
<td>6.8%  8.6%  6.0%  4.7%</td>
</tr>
<tr>
<td>Mild Recession</td>
<td>5.4%  4.2%  2.3%  4.8%</td>
</tr>
<tr>
<td>Severe Recession</td>
<td>5.4%  0.7%  -0.9%  6.2%</td>
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**Mild Recession Scenario:**

The slowdown in economic growth and increased trade tensions carry over and escalate. Financial markets remain spooked and the yield curve remains inverted. Real estate prices correct and 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 further, choking off the manufacturing cycle entirely. These factors are enough weight on the recovery that by early-2020 the economy slides back into recession. Job losses ensue and while not severe – about 52,000 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 145,000 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 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 nineteenth fastest among all states across the country in terms of growth with gains averaging 1.9 percent from 2019 through 2024. Total employment is expected to be the tenth strongest among all states at an annualized 0.9 percent, while manufacturing employment will be the second fastest in the country at 0.4 percent. Total personal income growth is expected to be 4.7 percent per year, the eighteenth 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 1.1 percent over the next handful of years. Recently, IHS lowered their forecast for Oregon population growth to 0.9 percent over the same time period. These differences are not immaterial. It amounts to a 5 year difference of nearly 50,000 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.

That said, Oregon’s participation rate, at least in the preliminary data, has flattened out and even fallen in recent months. The participation gap remains a cause for concern, however we are currently at the cyclical peak where ongoing job gains effectively offset the aging demographics. So a flat or even falling participation rate in and of itself is not a concern. It’s the level that is a little bit more worrisome.

Additionally, 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.

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

At a statewide level, Oregon’s economy has undergone a changing of the guard in recent decades. The high-tech industry’s growth has essentially offset the decline of the timber industry. This is good news for Oregon as a whole and many other places around the country that experienced large manufacturing losses did not have something like this to help balance out their economies.

However, even if these trends tend to offset at the statewide level they did not at the regional level or for individual workers. In the 1970s, timber was important statewide but particularly so outside the Portland region. Even so, Portland had a timber concentration two and a half times the national average. That said, Lane County’s was closer to 20 times the U.S. and Douglas County was 40 times. In most eastern and southern Oregon counties, timber accounted for 20-30% or more of all local employment.

Fast forward to today where the geographic distribution of high-tech jobs is very different. Nearly 80% of tech jobs in Oregon are in the tri-county Portland area.
As such, even with the declines in recent decades, timber remains important for many regional economies across the state. Not only does the sector account for a sizable share of local jobs, it also continues to pay above average wages, when compared with the local alternative. This is in part due to the lower-wage, service type of job growth seen in many communities. Even if travel and tourism, or even lower level health care facilities replace the outright number of jobs that were lost in the timber industry, their wages are generally lower.

See our office’s recent report on What Replaces Timber? for more details.