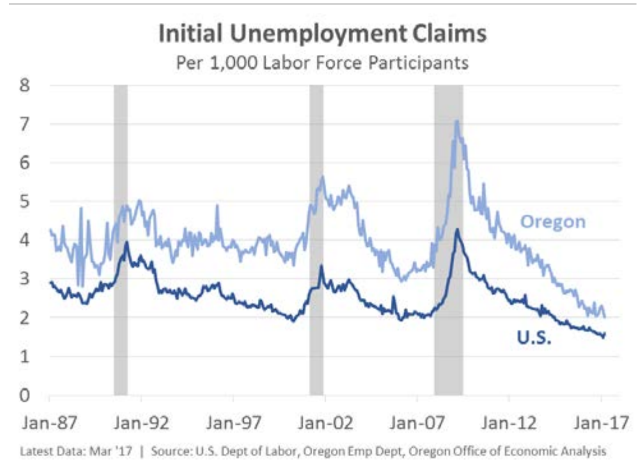
For much of the expansion, consumers have been a major driver given the ongoing strength in the labor market. Job growth is still outpacing population growth. As such the unemployment rate continues to fall. The tighter labor market results in stronger wage gains for workers, which supports consumer spending. These dynamics are expected to continue until the next recession. The outlook for consumption is relatively bright.



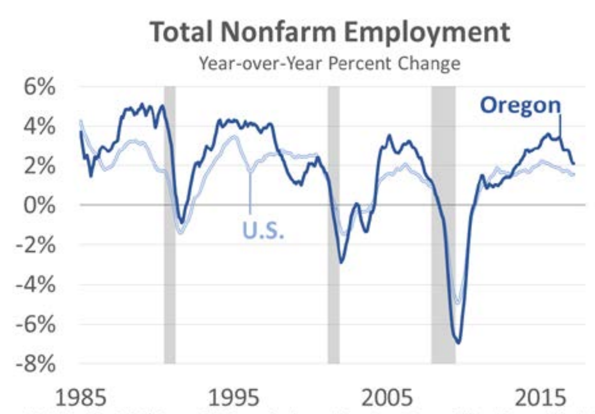
Overall the labor market remains in good condition, with both record low layoffs and record high job openings. The key economic question economists are trying to answer today is whether or not the U.S. economy is at full employment. In recent months both Moody's Analytics and the economics team at Goldman Sachs have published analyses stating the U.S. is at full employment. More importantly, the Federal Reserve thinks the economy is close. As such, economists are beginning to watch more closely for data trends that point toward late business cycle behavior and potential recessionary signals. The U.S. economy is closer to the next recession than to the last. However no clear worrisome signals are seen in the data yet.

While nearly all economic news in recent months continues to be positive, there do remain significant risks to the outlook. Federal policy uncertainty looms large, however there has yet to be any real impact on what economic forecasters are predicting. Forecasters' rhetoric about how potential policies may play out has ebbed and flowed with the political winds, however forecasters' actual predictions for economic growth, jobs, personal income and the like have held steady throughout the turbulent first few months of the Trump administration and unified Republican government.

That said, as detailed last quarter[1], many of the big policy ideas being discussed generally fall into two camps when it comes to their impact here in Oregon. The first camp consists of policies like tax rate reductions, infrastructure spending, deregulation, and immigration reform, that will likely impact Oregon to the same degree as the typical state. The second camp consists of policies like tax base broadening, health care reform, federal land policies including Canadian lumber tariffs, and international trade wars that are expected to have a larger impact on Oregon than seen in the typical state. Campaign promises rarely turn word for word into legislation and the devil is always in the detail. As such, until actual legislation is drafted and passed, it can be hard to predict the economic impact of these broad and wide-ranging topics.

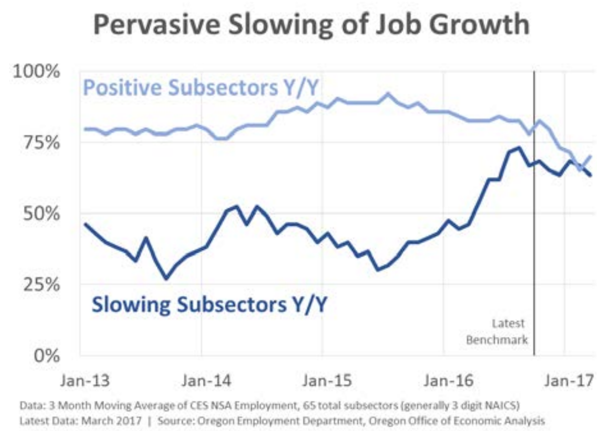
Oregon Economic

Like the nation, Oregon's economic expansion continues. Oregon's employment, income and state GDP are all among the ten fastest growing states nationwide in recent years. That said, Oregon job growth has slowed considerably in recent quarters. The state is no longer adding jobs at nearly twice the national rate like it was a year or two ago.



[1] See the March 2017 forecast document for details http://library.state.or.us/repository/2009/200908311536431/

A slowdown in job growth beginning in 2015 or 2016 has been built into our office's economic outlook for years, since at least 2012. As the labor market becomes tight, job growth must slow. There is no longer a large pool of available Oregonians that can easily be put back to work in a short time period, because most everyone already has a job. While it appears this slowdown is happening right on schedule, the severity of the slowing in recent quarters has been more than expected. At the beginning of the 2015-17 biennium, our office expected job growth in early 2017 to be close to 3 percent, instead it is hovering around 2 percent.



While slowing in large industries like Retail, Professional and Business Services, and Leisure and Hospitality, weigh on the topline totals, it is more concerning to see how widespread or pervasive the slowing is across Oregon. Today, two-thirds of the state's detailed industries are seeing slower job growth than a year ago. 70-80% of these industries are still seeing positive job gains over the past year, however they are adding jobs at a slower pace. The same story is true across regions within Oregon. Slower job gains are seen in the Portland metro area, Multnomah County in particular, in most of the state's secondary metropolitan regions, and across rural Oregon. The only areas where growth has not slowed considerably would be within the construction industry statewide, and then job growth in parts of southern Oregon, such as Jackson, Josephine, and Klamath counties.

While the slowing is broad, and more than expected, the rest of the Oregon data suggests the job numbers may overstate any economic weakness. There is no doubt that Oregon's growth is slowing, however personal income and withholdings out of Oregonian paychecks are tracking expectations better than the employment numbers alone. As such, our office's outlook continues to call for growth across the state. Furthermore, Oregon is still expected to outperform much of the country given the two primary reasons for our more volatile economy – industrial structure and population growth – remain in place. In keeping with the general outlook, it should also be noted that leading indicators for population growth, like the number of surrendered drivers' licenses at the DMV, have slowed in recent months as well.

Outside of the slower job numbers, the rest of the state's economic data and trends are really good. The state economy is hitting the sweet spot, which only happens at or near full employment. In a tight labor market, firms must compete on price (wages) to attract and retain the best workers. Bargaining power shifts back to employees a little bit, and wages rise. This is great news and Oregon's average wage gains have outpaced the typical state in recent years. In fact, while Oregon's average wage remains lower than the national average, its relative position continues to improve and is currently at its highest point since the mills closed in the 1980s. Importantly, in a growing economy where sales are rising, firms are better able to handle increasing labor costs.

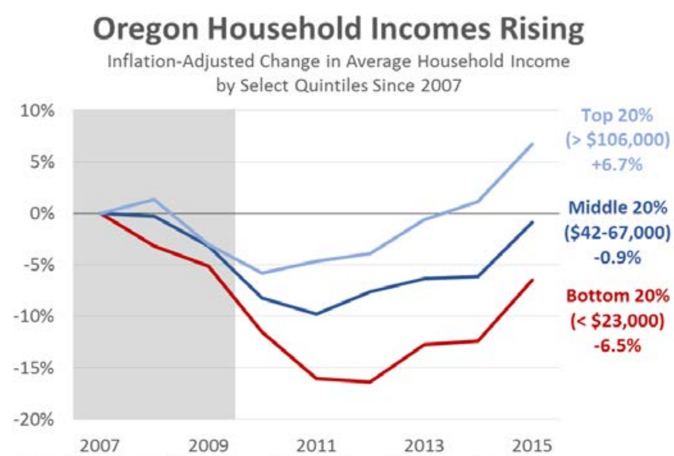
The most encouraging aspect of a strong economy, however, are the improvements seen in who businesses are hiring and in labor force participation rates among Oregonians. In a tight labor market, businesses must cast a wider net to fill vacant positions. This includes hiring individuals with an incomplete skill set that may need more on-the-job training, someone with a gap in their resume due to long-term unemployment and the like.

Two years ago, the share of younger and older Oregonians with a job had returned to pre-Great Recession rates. This was not the case for middle-aged Oregonians. Those in the 40s and 50s were employed at considerably lower rates in 2015 than a decade prior. The concern was this gap may be due to skills mismatches, geographic mismatches, and/or age discrimination. To the extent these concerns were true, it would point toward permanent or structural damage in the Oregon economy. Over the past two years, this gap in employment rates for middle-aged Oregonians has closed. This is very good news.

Data are 7 year centered averages. E.g. the data shown for 30 year olds is the average of 27-33 year olds.
Source: Census, Oregon Office of Economic Analysis

Similarly, at least based on available U.S. data, employment opportunities have picked up for the long-term unemployed. These trends are a result of the fact that businesses must cast a wider net to fill positions in a tight economy. Furthermore, as jobs become more-plentiful, and better-paying, more Oregonians are setting out looking for work. Over the past couple of years, the state's labor force participation rate has risen. It still remains lower than it probably should be based on historical patterns across age groups, however that participation gap has been cut in half in recent years.

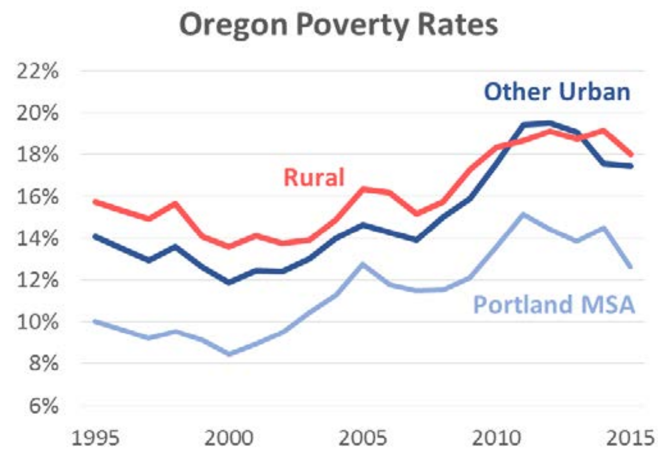
When all of these economic trends combine, it results in improvements in deeper measures of economic well-being. Household incomes for those in the middle and bottom part of the income distribution rise. All these households have are wages and the safety net. They are fully reliant upon a strong economy to generate any sort of income gains. While inflation-adjusted household incomes have largely been stagnant for two decades, and lower income households saw the largest losses in the Great Recession, there have been sizable gains in recent years. These trends are expected to continue so long as the economy remains strong, or until the next recession. An additional benefit to rising household incomes is that the eroding housing affordability problem across the state has stopped getting worse. Housing costs continue to rise, however incomes are now keeping pace.



Inflation adjusted using PCE deflator. | Source: BEA, Census, Oregon Office of Economic Analysis

Finally, as household incomes rise it means poverty rates begin to fall, as do some public sector caseloads for needs-based programs. These are among the last things to turnaround in an economic expansion and only now has Oregon seen some improvements. There remains a long way to go before the state's poverty rate, particularly outside the Portland metro area, returns to pre-Great Recession rates, let alone the late 1990s rates.

All told, the current outlook for Oregon remains positive. The economy is expected to continue to improve. Job growth should stabilize and even pick up a bit over the next year. Between now and the next recession, all of the good dynamics that are finally happening in the economy should continue. All of this should occur even as headline growth rates remain slower than a year or two ago. As the state's economic resources have been put back to work, Oregon's economic growth is transitioning down to a sustainable rate more in-line with growth in the working-age population.

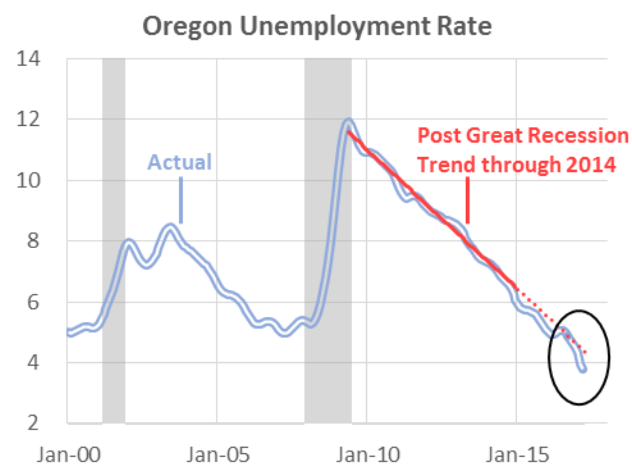


Source: Census SAIPE, Oregon Office of Economic Analysis

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, however wages slowed to end 2016 along with slower employment gains. The unemployment is under what can be considered full employment for Oregon.

As our office has been discussing, or more accurately, warning over the past few years, the pattern of unemployment rate changes does not likely reflect the overall pattern of growth in the Oregon economy.



Source: Oregon Employment Department, Oregon Office of Economic Analysis

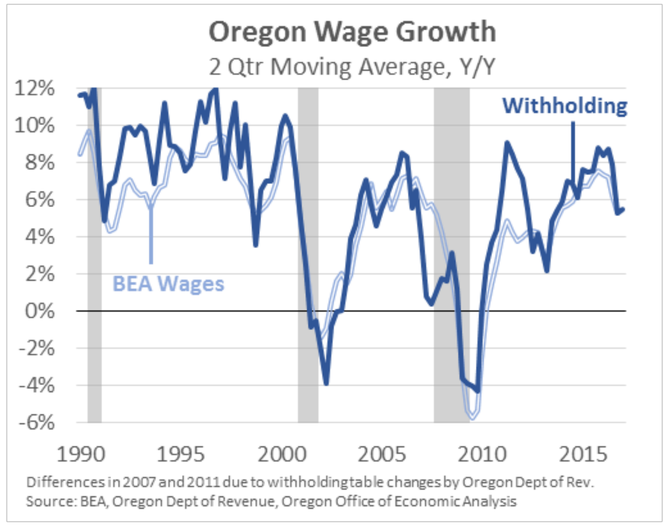
The preliminary data for both 2015 and 2016 showed the Oregon unemployment rate going on a roller coaster ride. A few months of extreme declines were followed by huge increases over the next few months. These types of increases in the unemployment rate have only been seen during recessions. These wild swings have largely been revised away each year during the annual benchmarking process (i.e. revisions). The overall pattern of Oregon's unemployment rate has been a fairly steady decline since the depths of the Great Recession.

However, it must be noted that once again Oregon's unemployment rate has plunged so far in early 2017. The three month decline in the first quarter is among the largest drops in Oregon's recorded history. The last time Oregon saw such a large decline over a short period was 1986. If the recent past is any guide, expect the month to month changes to be moderated once the data is revised in early 2018. Similarly, should the unemployment rate increase a handful of tenths of a percentage point over the summer months, it is unlikely a tell-tale sign of pending doom.

More importantly, wages in Oregon remain relatively strong. Recent withholding collections have slowed from an 8 percent pace to around 5 percent in recent quarters, in-line with the slowing job gains. However average wage growth per worker remains in the 3-4 percent range, sizably faster than gains in the typical state.

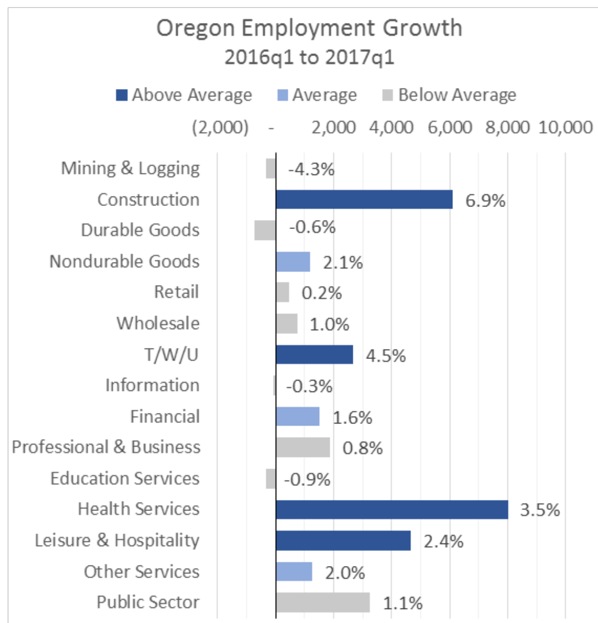
While national wage trends have just begun to accelerate in the past twelve months, Oregon's have been strong for a couple years now. Even Oregon's average hourly earnings have accelerated in the past year. Previously this measure, which only began in 2007 and thus is still new to the data world, had been growing near 0 percent in inflation-adjusted terms. Given all other Oregon-specific wage data was strong, average hourly earnings was an outlier. This is no longer the case.

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[2].



In the first quarter, total nonfarm employment increased 1.7 percent over the past year with the private sector growing at 1.8 percent and the public sector at 1.1 percent. These rates of growth are a clear step down from the full-throttle rates seen in recent years, however still remain faster than needed 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 average.



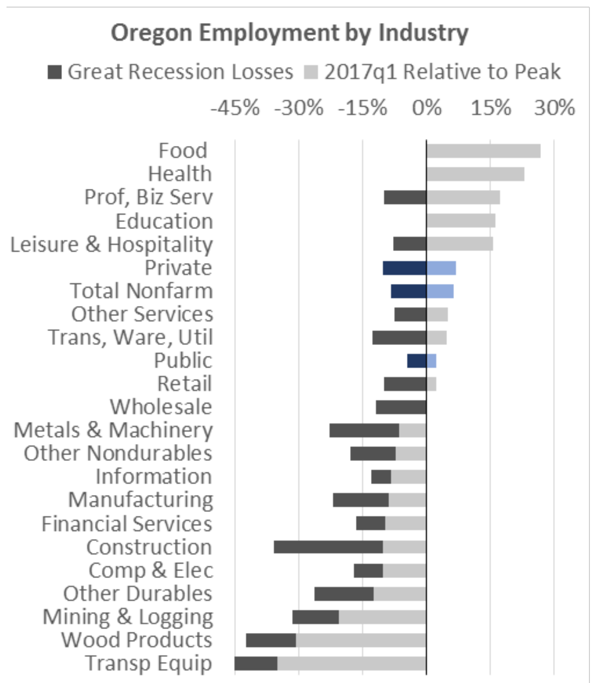
So far in recovery, the large service sector industries have generally led job growth in terms of the number of jobs added and with above-average growth rates. These include jobs in professional and business services, health services,

[2] 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 2016. The QCEW is currently available through December 2016, thus the preliminary benchmark used here covers the October 2016 – December 2016 period.

and leisure and hospitality industries. These three industries have gained 14,600 jobs in the past year and account for 48 percent of all job gains across the state. The good news is that this share has generally been shrinking in recent years as other industries continue to add jobs as well, which was not the case earlier in the expansion.

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[3] and where each industry stands today relative to pre-recession peak levels.

Currently, ten 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. In recent months retail emploment, other services, wholesale, and transportation, warehousing and utilities, in addition to the public sector have surpassed their pre-recession levels and are at all-time highs. The nine private sector industries at all-time highs account for 62 percent of all statewide jobs. The public sector accounts for an additional 17 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 recovery, 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[4]. With that being said, the subsectors tied to aerospace are doing well 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 recent months following declines a quarter 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.

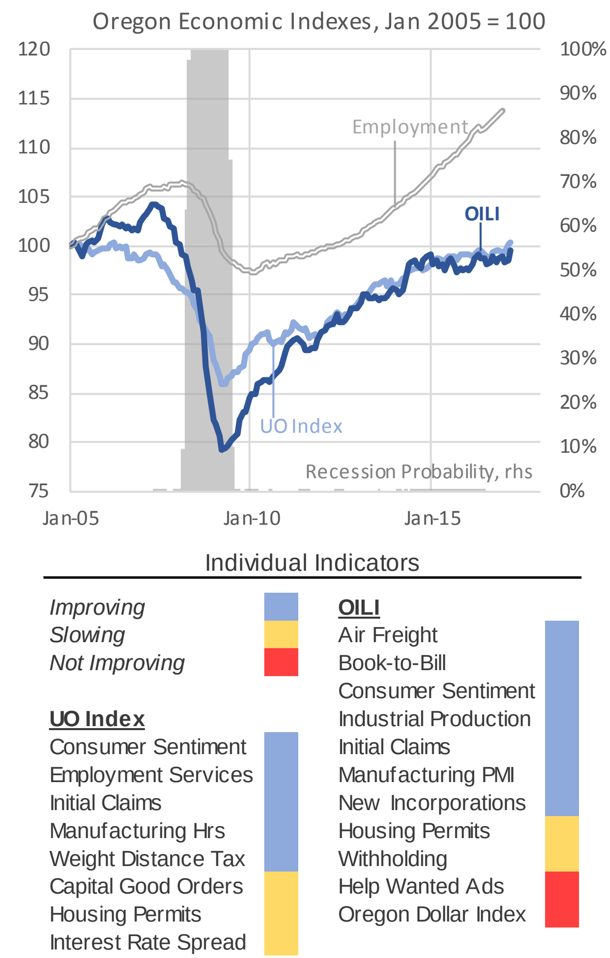
[3] Each industry's pre-recession peak was allowed to vary as, for example, construction and housing-related industries began losing jobs earlier than other industries or the recession's official start date per NBER.

[4] 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



After more than two years of no real sustained movement up or down, both of the Oregon-specific composite leading indicators may be breaking through the malaise to the upside. In keeping with the general pattern of economic growth, the mixed bag of indicators in both our office's Oregon Index of Leading Indicators (OILI) and the University of Oregon's Index of Economic Indicators, showed many of the manufacturing, or goods-producing indicators languishing while all others pointed toward growth. As discussed in recent quarters, the manufacturing indicators began picking up, leading to gains in the overall index. This pattern continued in recent months.

As of today, there are only two indicators between the two series showing no growth. The first is help wanted ads, however the story why is not as bad as the data suggests. Due to changes made by one major website – they started charging for job postings – the series now shows fewer job openings. On the bright side, expectations are the quality of the data has improved moving forward with some or most of the bogus job postings removed. The other indicator showing no improvements is the Oregon dollar – an index of exchange rates weighted by Oregon's trading patterns. The good news is that while the dollar clearly remains strong, it has stopped appreciating. Oregon exports are increasing again, even as terms of trade are not nearly as beneficial as a few years ago.

Among the handful of indicators that have slowed recently, the only really worrisome one is withholdings out of Oregonian paychecks. As discussed throughout this document, the slowing has been expected and is closely matching forecast. However, as you know, the economy has to slow before it enters a recession. Given the plethora of other data available, our office, and leading indicators suggest continued growth in the near-term, however slowing in such an important measure like withholding does merit some caution and monitoring.

Right now the U.S. economy is not in recession. University of Oregon professor Jeremy Piger has created a real time probability of recession[5] model, and finds there is just 0.7 percent chance the U.S. has entered into a

[5] http://pages.uoregon.edu/jpiger/us_recession_probs.htm/

recession. However, another recession will come, of that we can be sure. IHS Global Insight puts the probability of recession over the next year at 20 percent, and the Wall Street Journal consensus is at 15 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 clearly slowed. 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 3,000 per month or just over 2.1 percent over the course of the 2017-19 biennium – 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.

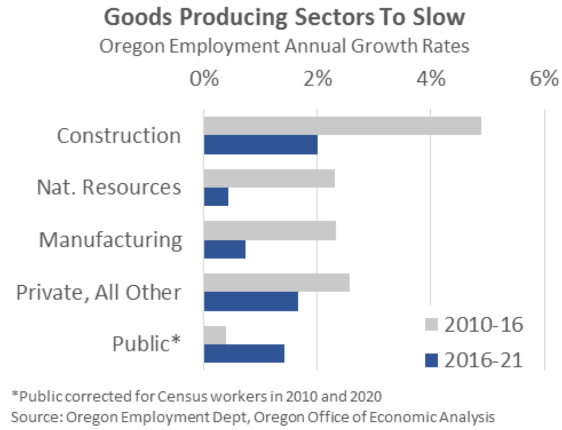
After these near-term job gains, longer-run demographic trends weigh on growth to a larger degree. While consistent with the general character of recent forecasts, this marks a slight downward revision to the employment outlook. This revision is due to both actual employment being weaker than expectations and the slightly downward revision to the macroeconomic outlook. Wages and incomes remain similar, although revised downward a bit as well.

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.

Should this overall economic outlook come to pass, it will have matched the equivalent of previous expansions in Oregon. Given demographic trends today, particularly the aging Baby Boomer cohort, job growth of 3 percent is considered full throttle. In decades past, growth of 4 or 5 percent was common during expansions in Oregon, however that time period also coincided with the Baby Boomers entering their prime working years. Today the opposite is occurring. Even so, demographic trends are not all bad, as the even larger cohort of Millennials are currently entering their prime working years. The net effect is overall lower rates of labor force and economic growth, due to demographics.

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. Only construction is expected to add jobs at the same pace as the rest of the private sector, as the housing rebound continues.



Manufacturing in particular was expected to see very minimal gains in the coming years. The good news is that after sustaining losses during the middle of 2016, manufacturing employment in Oregon has started to add jobs again. As the manufacturing cycle continues to strengthen some, additional gains are expected. This growth is expected to be strongest among the state's food processors, and beverage manufacturers, predominantly breweries. That said, any global weakening or further strengthening of the dollar will weigh further on growth.

Economic Forecast Summary

		Quarterly					Annual				
		2017:1	2017:2	2017:3	2017:4	2018:1	2016	2017	2018	2019	2020
Personal Income, Nominal	U.S.	3.9	5.1	4.8	4.8	5.5	3.6	4.5	5.1	5.4	5.1
% change	Oregon	5.5	6.0	5.5	5.6	6.0	4.5	5.1	5.7	5.7	5.5
Wages and Salaries, Nominal	U.S.	4.6	5.3	5.3	5.3	5.8	4.3	5.0	5.5	5.4	5.2
% change	Oregon	7.4	6.9	6.7	6.5	6.6	6.2	6.3	6.4	5.8	5.4
Population	U.S.	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
% change	Oregon	1.3	1.5	1.7	1.3	1.2	1.5	1.5	1.4	1.3	1.3
Housing Starts	U.S.	1.25	1.25	1.26	1.27	1.29	1.18	1.26	1.32	1.38	1.45
U.S. millions, Oregon thousands	Oregon	18.7	21.1	21.5	22.1	22.4	19.1	20.8	22.8	23.1	24.0
Unemployment Rate	U.S.	4.7	4.6	4.5	4.4	4.3	4.9	4.5	4.2	4.0	4.1
	Oregon	4.0	3.9	4.1	4.2	4.3	4.9	4.1	4.4	4.5	4.7
Total Nonfarm Employment	U.S.	1.7	1.5	1.4	1.3	1.4	1.8	1.6	1.4	1.1	0.9
% change	Oregon	2.1	2.6	2.6	2.5	2.5	2.8	2.0	2.4	1.6	1.0
Private Sector Employment	U.S.	2.0	1.8	1.8	1.6	1.7	1.9	1.8	1.6	1.2	0.9
% change	Oregon	2.4	2.6	2.7	2.6	2.6	3.0	2.2	2.5	1.6	0.9

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 somewhat faster than population growth alone. One risk to the outlook is the recent Oregon Supreme Court decision which reversed earlier Public Employees Retirement System (PERS) changes enacted by the Legislature. The extent to which the court decision will impact hiring by local and state public entities is unknown, but it is a risk to the outlook.

Along with an improving labor market, stronger personal income gains are here. 2013 personal income is estimated to have increased by just 1.7 percent. This largely reflects the pulling forward of investment-type income into 2012 in anticipation of increased federal tax rates in 2013. Since then, personal income has rebounded strongly with robust gains seen in both 2014 (6.7%) and 2015 (6.6%). Continued strong gains are expected moving forward, as the labor market sees relatively strong gains. Income growth is estimated to be 4.5 percent in 2016 and forecasted to be 5.1 percent in 2017 and 5.7 percent in 2018.

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 beyond their early 20s, demand for housing will increase as well.

Housing starts in the first quarter totaled 18,700 at an annual pace. This marks slowing from earlier in 2016, however new construction has improved in fits and starts in recent years. That said, a level of about 21,000 housing starts is the long-run average for the state prior to the housing bubble. The forecast calls for relatively strong growth in the coming few years with starts reaching just over 20,800 in 2017 and 22,800 in 2018. 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. As of today, new home construction is cumulatively about one year behind the stable growth levels of prior decades even after accounting for the overbuilding during the boom.

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 few worrisome trends at the U.S. level and 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 following the lifting of headwinds, Oregon's economy should receive a similar boost as well.
- Housing affordability. Even as the housing market recovers, new supply entering the market 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 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 relies on net in-migration significantly.

- Global Spillovers Both Up and Down. The international list of risks seems to change by the day: sovereign debt problems in Europe, equity and property bubbles in places like Canada, South America and Asia, political unrest in the Middle East and Ukraine, 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 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. 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 neighbors have large federal and military workforces.

- Drought. While rain and snowpack are back to or above average this year, the drought in recent years that impacted much of the West Coast and southwestern U.S. is a risk to the outlook. Its impact on the California economy reached into the billions of dollars in 2014 and 2015. By early 2016 the drought had certainly reached Oregon as well and most eastern and/or southern counties were classified accordingly. The impact is mostly felt within the agriculture industry. Losses are expected to be concentrated more in the grains, feed and other crops in addition to cattle. Fruits, nuts and dairies to be less impacted. The severity and duration of the drought is unknown, however it remains a risk to Oregon's rural economies in particular.

- 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.

- 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[6].

- 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.

[6] http://oregoneconomicanalysis.wordpress.com/2012/01/23/historical-look-at-oregons-wood-product-industry
http://oregoneconomicanalysis.wordpress.com/2013/05/28/timber-counties/

Alternative Scenarios

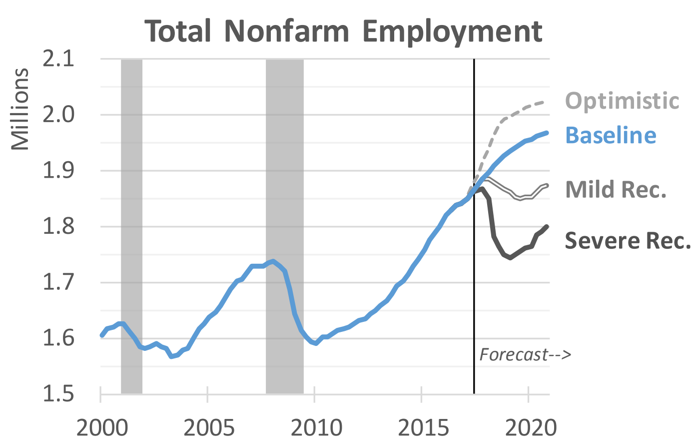
The baseline forecast is our outlook of the most likely path for the Oregon economy. As with any forecast, however, many other scenarios are possible. In conjunction with the Legislative Revenue Office, this forecast provides three alternative scenarios, which are modeled on growth patterns over previous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

Optimistic Scenario:

The recovery gathers steam and pulls the economy into a stronger cyclical expansion. The relatively lackluster economic growth seen in the earlier stages of recovery, the manufacturing weakness in 2015 and 2016 and the recent slowing in U.S. personal income all recede into the rearview mirror of history and the U.S. economy builds momentum throughout 2017. The economy is soon firing on all cylinders. Economic growth is above potential in 2017 and into 2018, resulting in stronger job and income gains. This stronger growth leads to more 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. 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.

Alternative Scenarios **May 2017**



	2017	2018	2019	2020
Employment				
Baseline	2.0%	2.4%	1.6%	1.0%
Optimistic	2.8%	4.5%	1.8%	0.9%
Mild Recession	2.0%	0.5%	-1.2%	0.6%
Severe Recession	1.6%	-4.0%	-1.9%	1.9%
Personal Income				
Baseline	5.1%	5.7%	5.7%	5.5%
Optimistic	7.4%	8.4%	6.2%	5.2%
Mild Recession	5.1%	3.7%	3.2%	6.2%
Severe Recession	5.0%	-1.5%	2.2%	7.4%

Mild Recession Scenario:

The economic acceleration of the past two years proves temporary and soon Oregon is returning to very slow employment and GDP growth in 2017 and early 2018. The housing market stalls (again), removing one driver of growth. Strained trade relations result in falling exports, business confidence tumbles and so does capital spending. The U.S. dollar strengthens further, chocking off the manufacturing cycle. These factors are enough weight on the recovery that by mid to late 2017 the economy slides back into recession. Job losses ensue and while not severe – about 34,000 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.

<u>Severe Recession Scenario</u>: The economy is not able to reach escape velocity from the lackluster recovery to date. The still weak industrial production and slower personal income 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 the 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 nearly 125,000 Oregonians lose their jobs by early 2019. Besides the domestic economic headwinds and Federal Reserve tightening, the likely culprit in this scenario is a meltdown of the financial markets sparked by the European sovereign debt crisis or other geopolitical shock. Economic growth in the U.S., while fairly steady, is not nearly strong enough to withstand an external financial shock of this magnitude. Further economic effects of a recession this size are personal income losses of around 4 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

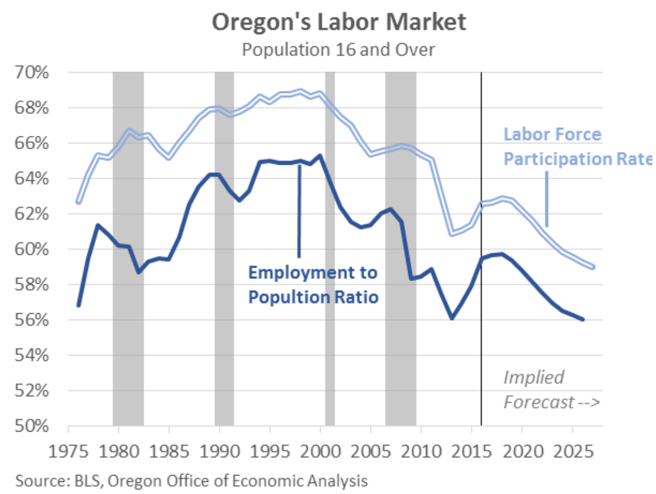
IHS Economics projects Oregon's economy to fare well relative to the rest of the country in the coming years. The state's Real Gross State Product is projected to be the fifth fastest among all states across the country in terms of growth with gains averaging 3.0 percent through 2022. Total employment is expected to be the eighth strongest among all states at an annualized 1.4 percent, while manufacturing employment will be the second fastest in the country at 1.5 percent. Total personal income growth is expected to be 5.3 percent per year, the eighth fastest among all states, according to IHS Economics.

OEA is somewhat more bullish as our office expects Oregon's growth to be somewhat higher than IHS. Some of this may stem from our office's stronger population outlook. IHS forecasts Oregon's population to increase 1.05% per year through 2022, the tenth fastest rate in the nation. Our office forecasts population growth to be 1.31% per year over the same time period. That said, both IHS and our office expect Oregon to outperform the typical state, provided the U.S. economy stays in expansion.

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 unemployment rate is equally bad elsewhere (particularly in California). Relative prices of housing 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.

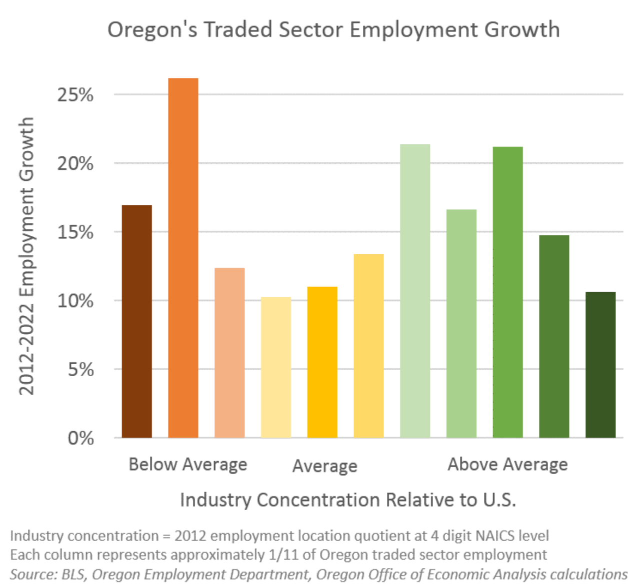
First, on the bright side, all of the recessionary-induced declines in the labor force itself have been reversed in the past few years. Oregon's labor force has never been larger. However, the participation rate remains somewhat lower than expected, when adjusting for the size of the population and the aging demographics. Oregon's participation rate is rebounding today, which is great news, however the 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 of the damage is likely to be permanent. The longer the expansion continues, the more likely the permanent damage will be small.



All told, our office's baseline outlook calls for some continued 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.

Oregon's industrial structure is very similar to the U.S. overall, even moreso than nearly all other states. 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 to downward trajectory of the industry in Oregon is likely to continue.

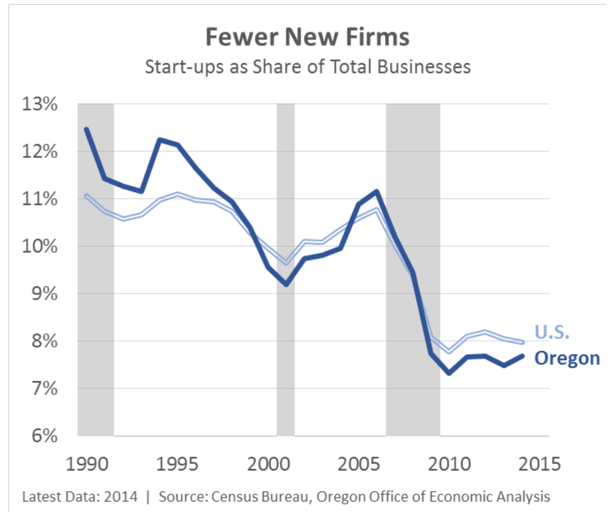
With that being said, certainly not all hope is lost. Many industries in which Oregon has a larger concentration that then typical state are expected to perform well over the coming decade. These industries include management of companies, food and beverage manufacturing, published software along with gains in crop production and nurseries. The state's real challenges and opportunities will come in industries in which Oregon does not have a relatively large concentration (the orange bars in the graph). 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

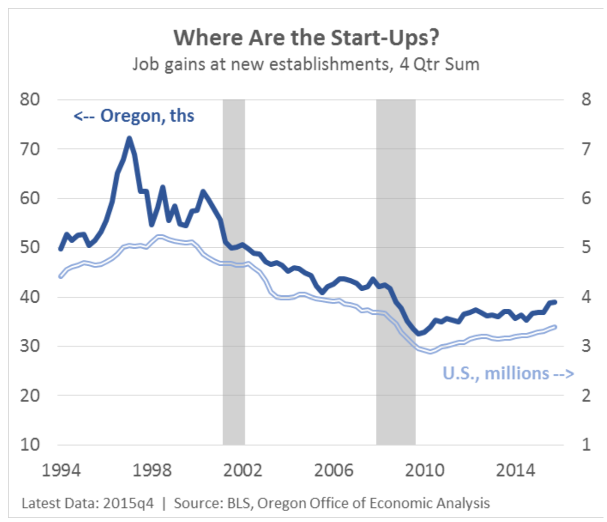


realize these gains if they rely more on clusters and concentrations of similar firms that may already exist elsewhere in the country.

Another area of potential concern that may impact longer term economic growth is that of new business formation. Over the past year or two, 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 lower start-up rates indicates 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.



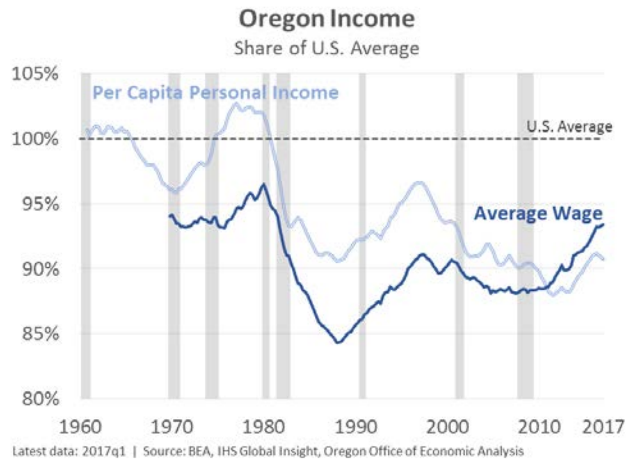


Finally, Oregon also enjoys the long-term advantages of low electricity costs; a central location between the large markets of California, Vancouver and Asia; clean water; low business rents and living costs; and an increasingly diverse industrial base.

One long-run concern for policymakers, think tanks and Oregon's economy is that very little progress on raising per capita income is projected out to 2025. In and of itself, a higher per capita income level would better fund public services for citizens. The benefit side of the state's relatively low income figures is that local firms do not have to pay higher wages, thus helping support the firms' balance sheets as well. It is not purely a lose-lose proposition. The Oregon Employment Department has published[7] a detailed look at Oregon's per capita personal income.

[7] http://olmis.emp.state.or.us/olmisj/PubReader?itemid=00007366

While the state's per capita income remains low, the state's average wage does not. Today, Oregon's average wage relative to the nation, is at its highest point since the mills closed in the 1980s. While some industries are seeing stronger growth, these gains are broad-based across regions and industries in Oregon.



In terms of the outlook, expectations are that wages will remain at this high watermark but not increase much further, at least relative to the nation. 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 3-4 percent per year. However as the U.S. accelerates closer to Oregon's annual rate, Oregon's growth advantage in recent years will lessen. As for the per capita personal income outlook, expectations are that some progress will continue to be made. Oregon's economy is outperforming the typically state. That said, over the forecast horizon, Oregon's per capita personal income is not expected to catch the national average.