West Linn – Wilsonville Schools

Long Range Planning Committee Meeting
Administration Building
22210 SW Stafford Rd, Tualatin, OR 97062
September 21, 2016, 6:00 PM

Agenda

1. Call to Order 6:04 pm Admin Boardroom

2. Roll Call:

David Lake	Gretchen Katko
Doris Wehler	**R. B. Brandvold**
Kent Wyatt	**Grady Nelson**
Mike Jones	**Chealsea Martin (Board Liaison)**
Kathy Ludwig	**Tim Woodley**
Amy Berger	**Remo Douglas**
Cindy Crowder	**Andrew Kilstrom (Reporter)**
Doug Middlestetter	**Mini Aga**
TJ Chandler	

3. Introductions were made around the group as there were new committee applicants at the meeting.

4. Economic Forecast: Business Manager, Doug Middlestetter presented the economic forecast that the district receives quarterly. The handout describes how to sign up to receive the reports if anyone is interested.
    a. The national economic trend seems to be closer to the next recession than not, as times seem likely they will be starting to slow down. Oregon however seems to be "full throttle rates of growth" as the general fund revenue seems stable. A reoccurring theme for a few quarters now has been personal income rising, personal taxes rising, but cooperate taxes falling. The 10 year forecast horizon shows a downfall as the baby boomers work less and spend less nationally, resulting in a slower rate of recovery than in years past.
    b. The LRPC has been in the district for so long that it has been able to be a stable voice of where the district stands today as well as where it wants to go in the future and projecting and planning what to do to become successful in that.
    c. The forecast talked about population and demographic growth. Oregon's economy heavily influences the population growth. The LRPC and district has always been trying to predict the growth and how we fit into the overall state growth rates.

5. Boundary Process
    a. The middle school boundary process is starting this fall as all 3 current middle schools as well as the new Meridian Creek school will have new boundaries.

Meridian Creek is being built as a starter middle school with an enrollment of 475.

b. Barb Soisson and Aaron Downs will be heading up a boundary task force that starts next month. There will be task force meetings in October and November with then community opportunity in December and adoption by the end of January. Cindy Crowder will be handling the mapping through working with Davis Demographics and give scenarios based on task force discussions.

6. Current Enrollment and trends
   a. Tim provided a handout of student enrollment projections for the year 2020. The handout was broken out by city for each school level, primary, middle and high. There was a discussion around building capacity not being an absolute. There is a range and the buildings are used differently depending on the numbers. The handout is a snapshot of where the projections lie today.
   b. Tim is recommending updating the projection reporting of capacity and enrollment for the Long Range Plan through 2021 including all changes of the current construction cycle at WLHS, WHS and Sunset.

7. LRPC Vacancies/Application Process
   a. The Long Range Planning Committee application process is being lined up with how the Budget Committee processes terms. When a member's term expires after their 3 years, the position becomes open and they will have to reapply if they would like to be considered being appointed to another term. All interested applicants then go to the School Board for appointment of new terms. Currently there are 3 open positions and appointment will go to the school board at the October 3rd board meeting.

8. Adjourn 7:20 pm

9. Next Meeting Bond Oversight October 19, 2016 - 6:00 PM

Department of Operations
operations@wlwv.k12.or.us
503-673-7995 Fax 503-638-9143 • www.wlwv.k12.or.us
2755 SW Borland Road, Tualatin, Oregon 97062

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Kathy Ludwig	Tim Woodley
	Amy Berger, Recorder

3. Economic Forecast — Doug Middlestetter

4. Middle School Boundary Process — Tim Woodley

5. Enrollment Projection Update — Tim Woodley (handout)

6. Open Position Application Process: — Doris Wehler, Kent Wyatt, Gretchen Katko

7. Next Steps

Adjourn:

Next Meeting:

Bond Oversight with 3rd Quarter Report	October 19
Board Report	November 7
Long Range Planning	November 16

2020 Projections

Level	School/City	Students	Capacity	Diff.
Primary 2020	Wilsonville	1633	1644	+11
	West Linn	2591	2702	+111
		4224	4346	+122
Middle	Wood	805	640	
	Meridian Creek		450	
	Athey Creek	632	624	
	Rosemont	845	668	
		2282	2382	+100
High	WLHS	1838	1748	
	WHS	1401	1472	
		3239	3220	-19

Office of Economic Analysis

Oregon Economic and Revenue Forecast

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2016 Calendar
for
Economic and Revenue Forecast
DAS Office of Economic Analysis

Governor's Council of Economic Advisors (GCEA) Audio-Web Conference:	10 a.m. to Noon
Governor's Council of Economic Advisors (GCEA) Pre-Forecast Meetings:	10 a.m. to Noon
DAS Economic Advisory Council (DEAC) Pre-Forecast Meetings:	1:30 to 3:30 p.m.
Council of Revenue Forecast Advisors (CRFA) Pre-Forecast Meetings:	10 a.m. to Noon

	Attendees	Venue/Delivery	Date
March Forecast | Mid-February			
Pre-Meeting Audio-Web Conference	GCEA	Audio & Web	Friday, January 8
Preliminary Forecast to Committees		email	Tuesday, January 19
Preliminary Forecast Meetings	**GCEA & DEAC**	**DAS CR A ***	**Friday, January 22**
Preliminary Forecast Meeting	CRFA	Moss Adams **	Friday, January 29
Forecast Release		**Web & email**	**Wednesday, February 10**
June Forecast | Early June			
Pre-Meeting Audio-Web Conference	GCEA	Audio & Web	Friday, April 29
Preliminary Forecast to Committees		email	Tuesday, May 10
Preliminary Forecast Meetings	**GCEA & DEAC**	**DAS CR A ***	**Friday, May 13**
Preliminary Forecast Meeting	CRFA	Moss Adams **	Friday, May 20
Forecast Release		**Web & email**	**Friday, June 3**
September Forecast | Mid-September			
Pre-Meeting Audio-Web Conference	GCEA	Audio & Web	Friday, August 12
Preliminary Forecast to Committees		email	Tuesday, August 23
Preliminary Forecast Meetings	**GCEA & DEAC**	**DAS CR A ***	**Friday, August 26**
Preliminary Forecast Meeting	CRFA	Moss Adams **	Friday, September 2
Forecast Release		**Web & email**	**Wednesday, September 14**
December Forecast | Mid-November			
Pre-Meeting Audio-Web Conference	GCEA	Audio & Web	Friday, October 14
Preliminary Forecast to Committees		email	Tuesday, October 25
Preliminary Forecast Meetings	**GCEA & DEAC**	**DAS CR A ***	**Friday, October 28**
Preliminary Forecast Meeting	CRFA	Moss Adams **	Friday, November 4
Forecast Release		**Web & email**	**Wednesday, November 16**

*DAS CR A: Dept. of Administrative Services | Executive Building | 155 Cottage St NE, Salem OR 97301
Conference Room A | 2nd Floor | Sign in with Reception for Security Badge | 503-378-5097

**Moss Adams: Moss Adams | Fox Tower | 805 SW Broadway | Suite 1200 | Portland OR | 97205 | 503-242-1447

Please note the legislature can change the dates for these meetings. Check back often for updates to meeting dates.

Oregon Economic and Revenue Forecast

September 2016

Volume XXXVI, No. 3

Release Date: September 14, 2016

George Naughton
Acting Chief Operating Officer
DAS Director

Kate Brown
Governor

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Office of Economic Analysis
Department of Administrative Services

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http://oregoneconomicanalysis.com
http://twitter.com/OR_EconAnalysis

Foreword

This document contains the Oregon economic and revenue forecasts. The Oregon economic forecast is published to provide information to planners and policy makers in state agencies and private organizations for use in their decision making processes. The Oregon revenue forecast is published to open the revenue forecasting process to public review. It is the basis for much of the budgeting in state government.

The report is issued four times a year; in March, June, September, and December.

The economic model assumptions and results are reviewed by the Department of Administrative Services Economic Advisory Committee and by the Governor's Council of Economic Advisors. The Department of Administrative Services Economic Advisory Committee consists of 15 economists employed by state agencies, while the Governor's Council of Economic Advisors is a group of 12 economists from academia, finance, utilities, and industry.

Members of the Economic Advisory Committee and the Governor's Council of Economic Advisors provide a two-way flow of information. The Department of Administrative Services makes preliminary forecasts and receives feedback on the reasonableness of such forecasts and assumptions employed. After the discussion of the preliminary forecast, the Department of Administrative Services makes a final forecast using the suggestions and comments made by the two reviewing committees.

The results from the economic model are in turn used to provide a preliminary forecast for state tax revenues. The preliminary results are reviewed by the Council of Revenue Forecast Advisors. The Council of Revenue Forecast Advisors consists of 15 specialists with backgrounds in accounting, financial planning, and economics. Members bring specific specialties in tax issues and represent private practices, accounting firms, corporations, government (Oregon Department of Revenue and Legislative Revenue Office), and the Governor's Council of Economic Advisors. After discussion of the preliminary revenue forecast, the Department of Administrative Services makes the final revenue forecast using the suggestions and comments made by the reviewing committee.

Readers who have questions or wish to submit suggestions may contact the Office of Economic Analysis by telephone at 503-378-3405.

George Naughton
Acting DAS Director
Chief Operating Officer

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EXECUTIVE SUMMARY

September 2016

The economic expansion continues. However a few mounting concerns muddy the outlook with risks clearly tilted toward the downside. The good news is the nation continues to muddle through various headwinds with job growth strong enough to bring down headline unemployment and make some progress on underemployment. The strengthening labor market, better wage gains and strong household balance sheets continue to support the U.S. consumer, the only real economic bright spot in the past eighteen months.

Even so, there are a number of worrisome trends that have emerged in the data that should give forecasters pause. First, manufacturing and industrial production continues to be weak. Second, personal income growth nationwide is slowing. Third, due to slowing tax revenues, an increasing number of state revenue forecasters are missing their forecasts. Fourth, the dearth of new business investment is weighing on growth. All told, even with these concerning trends, the baseline outlook still calls for the expansion to continue. And while expansions do not die of old age – they die due to mistakes – the economy is clearly closer to the next recession than not.

While some U.S. data is slowing, Oregon's expansion continues to see full-throttle rates of growth. Oregon is outpacing the typical state by a considerable margin today for both job and income gains. This growth differential largely comes from the state's underlying fundamentals like its industrial structure and strong in-migration flows. Both of these trends have long-lasting impacts on the Oregon economy and help drive the state's more volatile swings over the business cycle.

Oregon's General Fund revenue outlook remains stable. Personal income tax collections continue to expand at a healthy pace, keeping revenues in line with what was expected when the budget was drafted. Oregon's General Fund revenues are currently expected to end the biennium within 0.1% of the Close of Session forecast.

Personal income tax collections continue to reflect Oregon's strong underlying labor market. Withholdings out of paychecks expanded at an 8% rate during fiscal year 2016. As such, state revenue growth in Oregon remains among the strongest in the U.S. State revenue growth would have been even more rapid in recent months if not for the payout of the personal income tax kicker generated during the 2013-15 biennium. The vast majority of kicker payments have now been made, and will no longer weigh on overall collections.

In contrast to the healthy growth seen in personal income tax collections, corporate tax collections have been falling sharply in recent months. Nationwide, corporate profits have taken a step back, largely due to rapid appreciation of the U.S. dollar and struggles among energy firms and other commodity producers. Even so, profits and corporate tax collections remain large relative to historical norms. Given the expectation that collections would return to earth, revenue declines were built into the forecast, leaving the outlook very close to the Close of Session forecast for now. Declines are expected to continue through the current fiscal year, further reducing annual revenues by around $50 million.

In addition to healthy General Fund revenue growth, Oregon Lottery sales and Estate taxes have been very strong as well. Recent collections have consistently come in above expectations.

Revenue growth in Oregon and other states will face considerable downward pressure over the 10-year extended forecast horizon. As the baby boom population cohort works less and spends less, traditional state tax instruments such as personal income taxes and general sales taxes will become less effective, and revenue growth will fail to match the pace seen in the past.

ECONOMIC OUTLOOK

Economic Summary

The economic expansion continues. However a few mounting concerns muddy the outlook with risks clearly tilted toward the downside. The good news is the nation continues to muddle through various headwinds with job growth strong enough to bring down headline unemployment and make some progress on underemployment. The strengthening labor market, better wage gains and strong household balance sheets continue to support the U.S. consumer, the only real economic bright spot in the past eighteen months.

Even so, there are a number of worrisome trends that have emerged in the data that should give forecasters pause. First, manufacturing and industrial production continues to be weak. Second, personal income growth nationwide is slowing. Third, due to slowing tax revenues, an increasing number of state revenue forecasters are missing their forecasts. Fourth, the dearth of new business investment is weighing on growth. All told, even with these concerning trends, the baseline outlook still calls for the expansion to continue. And while expansions do not die of old age – they die due to mistakes – the economy is clearly closer to the next recession than not.

While some U.S. data is slowing, Oregon's expansion continues to see full-throttle rates of growth. Oregon is outpacing the typical state by a considerable margin today for both job and income gains. This growth differential largely comes from the state's underlying fundamentals like its industrial structure and strong in-migration flows. Both of these trends have long-lasting impacts on the Oregon economy and help drive the state's more volatile swings over the business cycle.

U.S. Economy

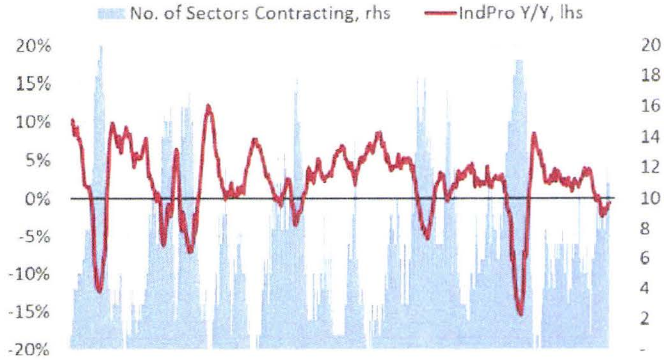
The U.S. economic expansion continues. However a few mounting concerns muddy the outlook with risks clearly tilted toward the downside. The good news is the nation continues to muddle through various headwinds with job growth strong enough to bring down headline unemployment and make some progress on underemployment. The strengthening labor market, better wage gains and strong household balance sheets continue to support the U.S. consumer, the only real economic bright spot in the past eighteen months. The baseline outlook still calls for the expansion to continue. And while expansions do not die of old age – they die due to mistakes – the economy is clearly closer to the next recession than not. While job growth and consumption remain healthy, which is vital to any expansion, three worrisome trends have emerged in the data that should give forecasters pause.

First, industrial production continues to be weak. The initial production declines followed the oil and gas bust of 2014 and the appreciation of the U.S. dollar. Clearly the severe, industry-specific shock hit U.S. mining firms and their suppliers, like metal makers. The worsening terms of trade weighed on exports and export-dependent sectors like aerospace. These losses were initially confined to just a handful of subsectors.

What is worrisome is not that Houston, TX employment has crawled to a halt or the job losses in the rural areas of the oil patch. The concern is that even as topline industrial production numbers have leveled off and may even be growing again in recent months – it is too soon to tell – the underlying weakness has spread. In recent months a little more than half of all subsectors are seeing production declines over the past year, an increase from the initial handful a year ago. What makes a recession is when everything goes down together. Right now, producers of goods are somewhere in the middle between concentrated losses in a few industries and widespread losses across the board.

The good news for manufacturers is that the U.S. dollar has stopped appreciating so far in 2016. However the dollar remains nearly 20 percent stronger vis-à-vis our major trading partners than two years ago. A stronger dollar makes domestic goods and services more expensive to foreign buyers. Fewer exports leads to slower economic growth, everything else equal. That said, most manufacturing data remains mixed at best. New orders for capital goods are lower today than last year. The ISM manufacturing purchasing managers' index is still registering positive readings, but just barely. Manufacturing employment and hours worked are holding up so far, but no jobs have been added since late 2014.

Industrial Production and Recessions

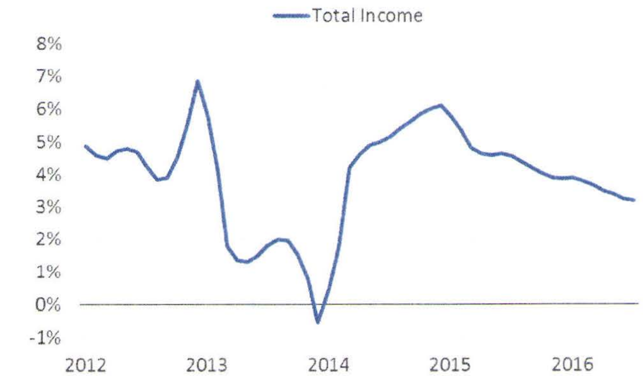


20 Sectors within Industrial Production at the 3 Digit NAICS level
Latest Data: July 2016 | Source: Federal Reserve, Oregon Office of Economic Analysis

The second major concern is the slowdown in personal income growth nationwide. Across nearly all components of income, the rate of growth is slower today than a year or two ago. Wages have slowed, as has nonfarm proprietors' income, which can be thought of as small business income. Transfer payments, both public and private, with or without unemployment insurance, are slowing too while dividends and interest income remains flat. The only income components that show sturdier trends are supplements to wages (i.e. worker benefits) and rental income, likely a result of the hot housing markets in most big metros nationwide. The good news is that only about half the time does a recession immediately follow a significant slowing in personal income growth. The other times reflect policy changes or the ebbs and flows over an expansion. A more likely scenario would be if the income slowdown persists it would slow consumer spending, weakening the main pillar of recent growth.

U.S. Personal Income Slowing

Year-over-Year Percent Change, 3 Month Average



Latest Data: July 2016 | Source: BEA, Oregon Office of Economic Analysis

The third worrisome trend fits this potential scenario. An increasing number of state revenue forecasters – our office's counterparts around the country – have missed their forecasts. This is particularly the case for sales taxes, possibly a sign of weakening consumer spending, and/or just ongoing issues with sales tax effectiveness in general. However withholdings out of paychecks have been less than stellar as well. While it can be difficult to determine how much of the forecast error is due to worsening revenue trends and how much is due to forecaster mistakes, the increased chatter across states is worth monitoring.

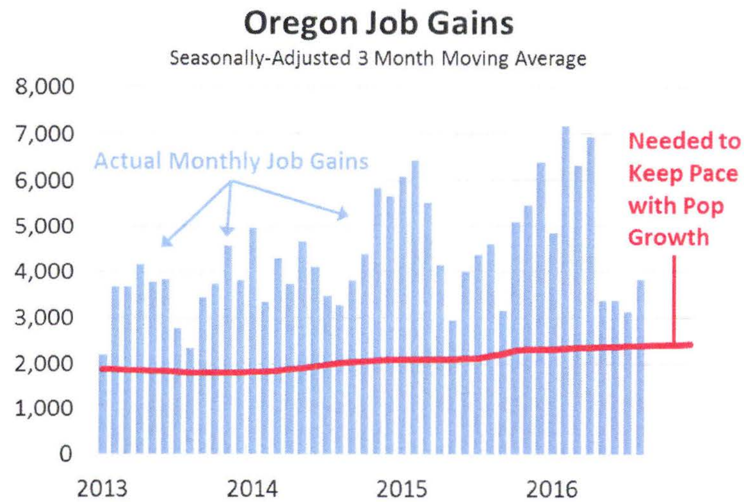
All told there is not a clear recession signal yet. However each trend is worrisome in its own right. The fact that business investment nationwide is essentially nonexistent today, manufacturing has stalled out and overall income growth is slowing point toward late business cycle behavior. The U.S. economy is closer to the next recession than not. However that does not mean it will fall into recession next quarter or probably not even next year. The Wall Street Journal consensus recession probability is still just 21 percent for the next year. Expansions do not die of old age, they die due to mistakes. Should these worrisome trends continue, the stage is set for policy mistakes such as the Federal Reserve raising rates into the weakening economy.

That said, the baseline outlook remains that of continued economic growth. And Moody Analytics' chief economist, Mark Zandi, continues to highlight the economy's multiple drivers of growth – namely the strong consumer, housing demand, and the fact the worst of the energy bust is already over. While muddling through is the most likely scenario, persistent and/or growing weakness is a concern.

Oregon Economy

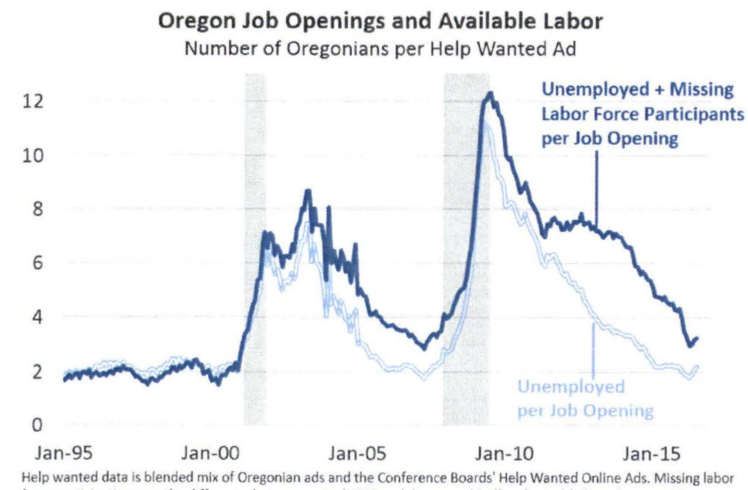
While some U.S. data is slowing or showing worrisome signs, Oregon's expansion continues to see full-throttle rates of growth. Oregon is outpacing the typical state by a considerable margin today for both job and income gains. This growth differential largely comes from the state's underlying fundamentals like its industrial structure and strong in-migration flows. Both of these trends have long-lasting impacts on the Oregon economy and help drive the state's more volatile swings over the business cycle.

That said, Oregon job gains have slowed somewhat in the most recent months. These gains, however, remain more than enough to keep pace with population growth. The result is a tightening labor market across the state.



Latest Data: August 2016 | Source: Oregon Employment Department, Oregon Office of Economic Analysis

Overall this marks a return to what can considered normal labor market dynamics. First, strong job growth diminishes economic slack and the pool of potential workers from which firms hire. Second, as labor becomes scare, businesses must compete more on price to attract and retain the best employees. Wages rise for workers. Third, more individuals begin to look for these now more-plentiful, and better-paying jobs. Currently, the Oregon economy is in this virtuous cycle in which all of these dynamics are taking place.



Help wanted data is blended mix of Oregonian ads and the Conference Boards' Help Wanted Online Ads. Missing labor force participations are the difference between actual LFPR and demographically-adjusted full employment LFPR
Latest Data: July 2016 | Source: BLS, CBO, Census, Conference Board, Oregonian, Oregon Office of Economic Analysis

In terms of the outlook, a tight labor market has a few different implications. For businesses it does become more difficult to find workers to fill positions. Firms must broaden their search and be willing to hire individuals who may not have perfect credentials or experience. In 2015, Oregon businesses reported that a lack of applicants was the primary issue on just 36% of their difficult-to-fill positions[1]. On-the-job training

[1] The lack of applicants in general is the largest individual response for why positions are difficult to fill. However they still remain a minority. Combined the lack of qualified candidates, lack of work experience, lack of soft skills and lack of training

becomes considerably more important in a tight market than during the depths of the Great Recession when unemployed Oregonians outnumbered job openings by more than 10 to 1. Businesses could be picky when the candidate pool was deep. This is no longer the case in 2016 where there are just 2 unemployed Oregonians per job opening. Even if you add back in the "missing" labor force participants – those who would likely look for work in a stronger economy – the ratio is 3 to 1. There is no question that the labor market is getting tight. In order to hire workers, businesses will either take bigger chances on less-than-perfect candidates or hire away workers from competitors with better compensation packages and/or work environments.

For workers a tight labor market brings great news as demand for their services (labor) increases relative to the supply. Businesses must compete more to attract and retain the best employees. One major issue with stagnant wages in the 2000s was the fact that the U.S. and Oregon economy never fully healed from the 2001 recession. The housing boom was too short and too lackluster for the economy to reach full employment in many places. Thus workers were not very scarce and had less bargaining power in general.

Today, as the economy approaches full employment, wages are rising. Oregon's wage gains are outpacing the typical state as well. Oregon's average wage today, while lower than the nation's, is at its highest relative point since the mills closed in the 1980s. These gains are primarily due to broad-based increases seen across the state in different industries and in different geographic regions. In a tight labor market, expectations are for continued strong wage gains. One recent example is the effective minimum wage on the Oregon coast today. Firms were initially worried about the increase in business costs from the state's new minimum wage law. However the tight labor market on the coast means firms are starting wages at $11 per hour already, a threshold not mandated by the new law until the summer of 2019. The market has responded. Of course one concern regarding the minimum wage is how the market and businesses respond in a downturn, not just an expansion and tight labor market like currently seen.

Oregon has added an average of nearly 5,000 jobs per month since the beginning of 2014. Such gains are not sustainable over the long-run, they represent peak economic growth rates. These gains also eat up economic slack and regain lost ground from the recession. As the economy approaches, and reaches full employment, growth is expected to slow to a sustainable rate. Unfortunately measuring full employment or economic slack is not a simple calculation but rather an estimate based on assumptions. That said, Oregon is close. The unemployment rate is low, those working part-time for economic reasons is back to pre-Great Recession rates, wages are rising and the state's labor force participation rate is increasing as well. The regional economy can expect to slow in the not too distant future. However, even as there are no real weaknesses in the Oregon data and our office's advisors remain bullish, the economy does not typically transition from expansion to sustainable rates. The economy usually slams down into recession and the cycle starts anew.

Educational Attainment, Labor Force Participation and Middle-Wage Jobs

While labor force participation rates have fallen nationwide over the past two decades, including here in Oregon, these declines are not evenly distributed. Men and women with college degrees have seen the best outcomes in terms of wages and employment. On the other hand, individuals with less formal schooling have seen worse outcomes and the largest participation declines. A big reason for this is the loss of middle-wage jobs which tend to pay $30-50,000 per year and not require a college degree.

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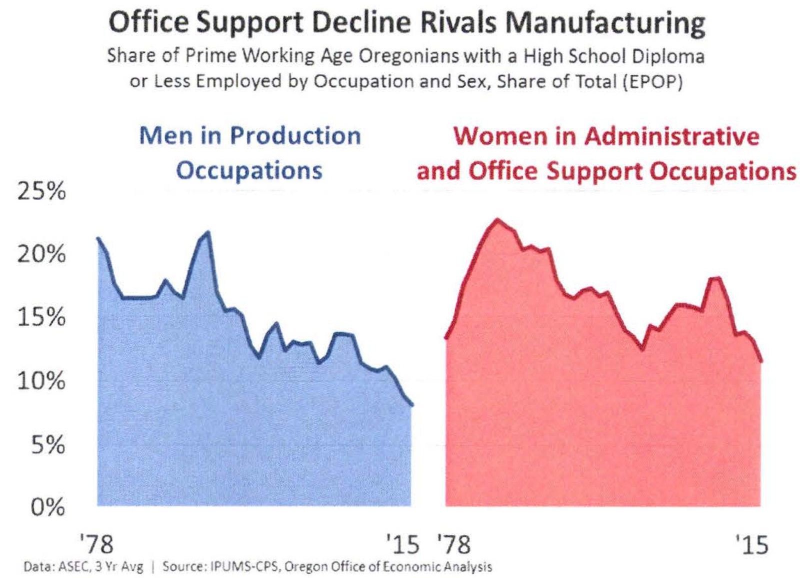
account for a similar 37% of why positions are difficult to fill. https://www.qualityinfo.org/-/increasing-difficulty-filling-job-vacancies-in-oregon

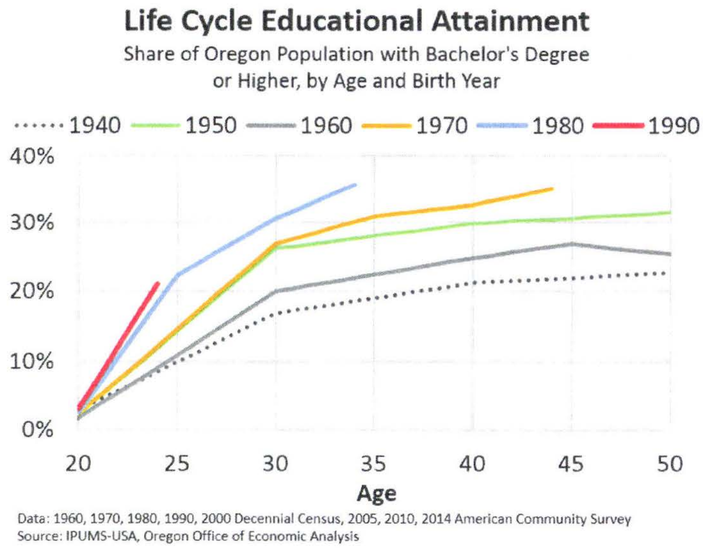
When discussing these trends much of the focus is on the loss of traditional blue collar jobs that are generally held by men without college degrees – construction, production (manufacturing), transportation and maintenance and repair workers. The story of how globalization and technological change have hollowed out some of these jobs is well known. Not only are there fewer such job opportunities today, but their relative wages have eroded and there is no longer much of a manufacturing wage premium, for example. This is a big reason why the vast majority of the "adjustment" to the loss of middle-wage jobs is a corresponding increase in nonparticipation rates. Some are able to find work in high- or low-wage jobs, but more than 70 percent eventually drop out of the labor force entirely.

However middle-wage job losses and their impact on women without college degrees is not commonly discussed, if at all. Unfortunately, the overall trends are very similar. In the 1970s, about 1 in 5 prime working age Oregon men with high school diploma or less worked in a production job. In the 1980s, about 1 in 5 prime working age Oregon women with a high school diploma or less worked in an office and administrative support job. Today, employment rates in these occupations is roughly half of what it was a generation ago. The reasons for the declines are similar as well: technological change and workplace practices.



Office support workers today are considerably more productive than a generation ago through the use of computers, software, travel websites and the like. Businesses have also changed hiring and staffing patterns, which combined with changes in technology and increased productivity have effectively eliminated entire occupations like switchboard operators, file clerks and typists. All told these changes have resulted in about 50,000 fewer such jobs in Oregon just from 2000 to 2015, across both sexes and all education levels.

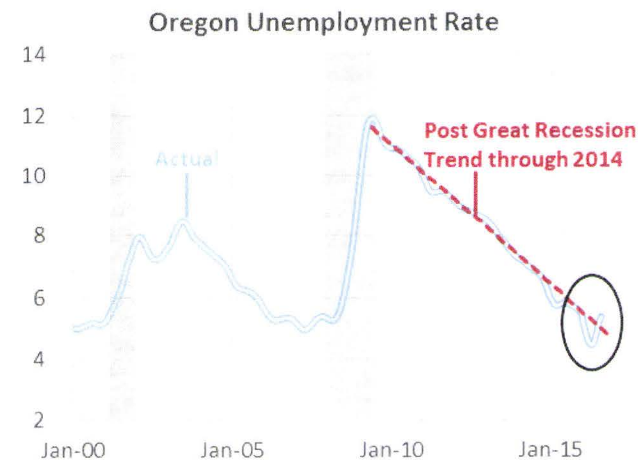
In the near-term, middle-wage jobs are on the upswing. The economy is adding more construction and teaching jobs in recent years and manufacturing has regained about half of its Great Recession losses. This brings some relief to the job market, however middle-wage jobs are unlikely to fully regain their share of the economy overall, even as they grow in absolute terms.



Job polarization is more structural than cyclical, or more permanent than temporary. Economists and policymakers continue to call for higher levels of educational attainment in response, and rightfully so. Younger generations are taking note. The Millennials are on track to be the best-educated generation on record, at least when measured by college degrees. However education goes beyond degrees to include training programs, certificates, apprenticeships and the like. While easier said than done, more focus should be put on these types of education to help workers improve their skills, particularly those that businesses value, which will likewise improve labor market outcomes (employment and wages).

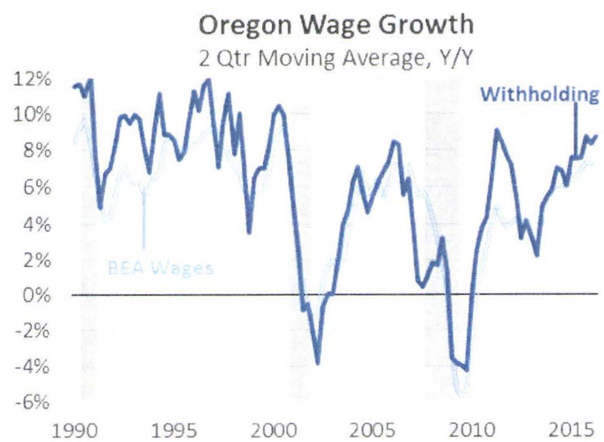
Oregon's Labor Market

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 showing strong improvements with jobs being added, wages increasing and the unemployment rate declining over the past year.



Source: Oregon Employment Department, Oregon Office of Economic Analysis

As our office has been discussing, or more accurately, warning over the past year and a half, the pattern of unemployment rate changes does not likely reflect the overall pattern of growth in the Oregon economy. So far in 2016, the January through March unemployment rate declines are the largest declines on record for the state. These improvements were reversed with the large increases in the unemployment rate in June and July. In fact, when looking across Oregon's history during economic expansions, those are the two single largest increases in the unemployment rate for any month in which jobs were added. Only during the early 1980s recession and the Great Recession did the unemployment increase by a similar amount over two months. Needless to say, the Oregon economy did not experience supercharged growth to start to year for it to come to a screeching halt this summer.



Differences in 2007 and 2011 due to withholding table changes by Oregon Dept of Rev.
Source: BEA, Oregon Dept of Revenue, Oregon Office of Economic Analysis

Expectations are that once the annual benchmark revisions take place in March, the revised 2016 unemployment rate pattern will be smoothed, relative to the unrevised data. This same pattern in the unrevised data was seen in last year as well, only for the revisions to smooth the overall pattern.

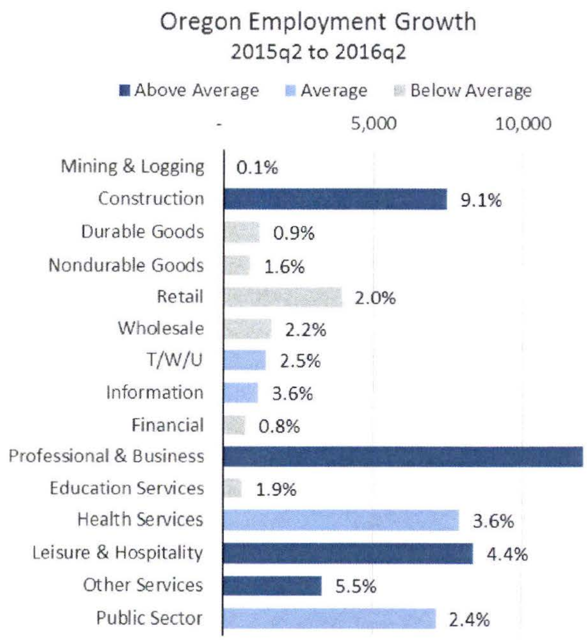
More importantly, wages in Oregon are increasing at near double-digit rates, which is better than during the mid-2000s expansion but still a notch below the 1990s gains. Average wages per worker are currently increasing 3-4 percent per year, which is faster than inflation of 1-2 percent per year.

While national wage trends have just begun to accelerate in the past nine to 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, 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.

The most recent job growth rankings, published by Arizona State University's W.P. Carey School of Business[2], places Oregon 3rd in the nation for job growth in July. Over the past year the state has added 56,600 jobs, or an increase of 3.2 percent. Using the Oregon Employment Department's preliminary benchmarked employment data, it shows slightly weaker figures. Oregon added 55,700 jobs over the year for a 3.1 percent growth rate, which would still rank 4th fastest, trailing our Western neighbors Washington, Utah and Idaho. For comparison and to show Oregon's acceleration over the past couple of years, in 2013 Oregon ranked 11th fastest with growth of just 2.1 percent.

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[3].

In the second quarter, total nonfarm employment increased 3.3 percent over the past year with the private sector growing at 3.5 percent and the public sector at 2.4 percent. These rates of growth are essentially on par with the height of the housing boom and among the best Oregon has experienced in the past generation.



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,

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[2] http://research.wpcarey.asu.edu/seidman/current-state-rankings/

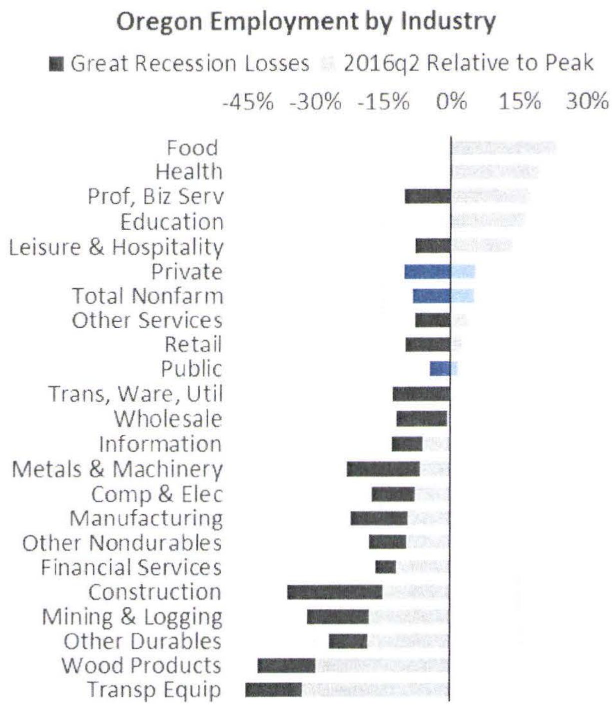
[3] Each year the U.S. Bureau of Labor Statistics revise the employment data – a process known as benchmarking. The current establishment survey (CES), also known as the monthly payroll survey, is benchmarked against the quarterly census of employment and wages (QCEW), a series that contains all employees covered by unemployment insurance. The monthly CES is based on a sample of firms, whereas the QCEW contains approximately 96 percent of all employees, or nearly a complete count of employment in Oregon. The greatest benefit of the CES is the timeliness – monthly employment estimates are available with only a one month lag – and these estimates are reasonably accurate. However the further removed from the latest benchmark, the larger the errors. The QCEW is less timely as the data is released approximately 3-4 months following the end of the quarter. The greatest benefit of the QCEW is that is a near 100 percent count of statewide employment. For these reasons, the CES is usually used to discuss recent monthly employment trends, however once a year the data is revised to match the historical QCEW employment trends. The last month of official benchmark data is September 2015. The QCEW is currently available through March 2016, thus the preliminary benchmark used here covers the October 2015 – March 2016 period.

while grey bar industries are growing at rates significantly less than the average.

As has been the case in the recovery to date, jobs in the large service sector have led growth in terms of outright job gains 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 29,400 jobs in the past year and account for 50 percent of all job gains across the state. The good news is that this share is smaller than a few years ago 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[4] and where each industry stands today relative to pre-recession peak levels.

Currently, eight 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 both retail emploment, other services and the public sector have surpassed their pre-recession levels and are at all-time highs. The seven private sector industries at all-time highs account for 55 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[5]. 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, and with a strong manufacturing cycle today, the goods-producing industries have and will exhibit stronger growth than in past cycles. Although, even with relatively strong manufacturing gains in recent years, the industry is unlikely to fully regain all of its lost jobs. Oregon manufacturers typically outperform those in other states, in large part due to the local industry make-up. Oregon does not rely upon old

[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.

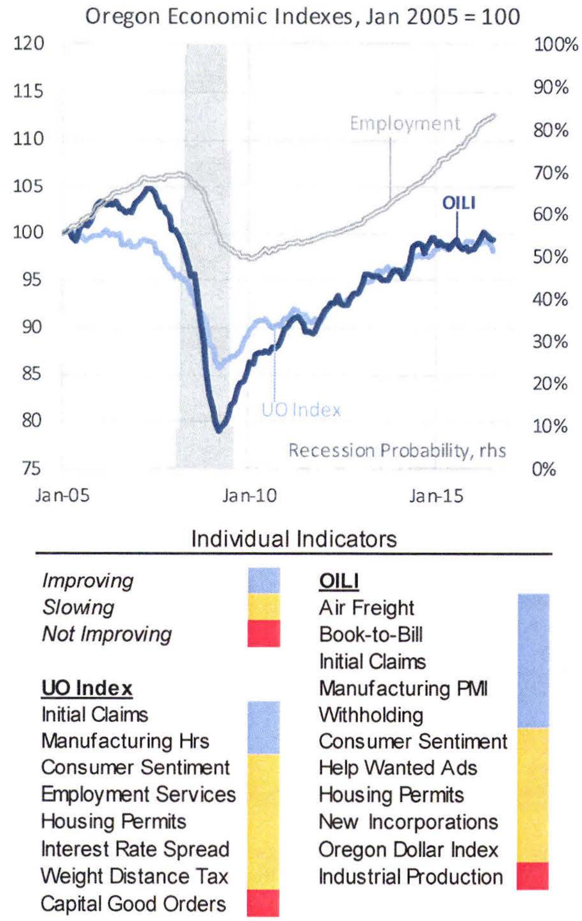
[5] http://oregoneconomicanalysis.com/2012/07/10/rv-workers-and-reemployment/

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.

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



Both of the Oregon-specific composite leading indicators have gyrated up in early 2016 and back down in recent months. This following a period where each was more of a mixed bag as our office's Oregon Index of Leading Indicators (OILI) and the University of Oregon's Index of Economic Indicators were essentially flat, or unchanged, from about mid-2014 to late-2015. The unchanged topline hid a stark divergence between manufacturing, or goods producing, indicators and all other types.

On the bright side, there is some reason for optimism as industrial production appears to be firming following a prolonged decline and period of weakness. The dollar has depreciated a little, making Oregon-produced goods and services more price competitive in a global market, but remains considerably stronger than a year or two ago.

Furthermore, initial claims for unemployment insurance remain historically low, a clear indication that layoffs are low across the economy. Withholdings out of Oregon paychecks continues to see robust gains and some of the manufacturing data, like hours worked per week, the purchasing managers index and the semiconductor equipment book-to-bill ratio are all holding on.

That said, more indicators are showing weak or at least slowing trends in recent months than earlier in the recovery. Currently 6 of OILI's 11 indicators have increased over the past six months while 4 out the UO Index's 8 indicators have. These so-called diffusion indexes – measuring what share of the indicators are expanding or contracting – have slowed recently and remain considerably lower than earlier in the recovery. These indicator patterns do point toward more late-business cycle behavior.

On the downside, consumer sentiment, the number of help wanted ads and new Oregon incorporations have all slowed in recent months. Additionally, new orders for capital goods remains lower.

Right now the U.S. economy is not in recession. University of Oregon professor Jeremy Piger has created a real time probability of recession[6] model, and finds there is just a 0.4 percent chance the U.S. has entered into a 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 a similar 21 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 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

Robust job growth continues in Oregon. Since the beginning of 2013, Oregon job growth has picked up from around 1.5 to 2.0 percent to more than 3.0 percent today. The outlook calls for slightly slower growth through the end of 2017 – around 2.7 or 2.8 percent. However these 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 in the near-term. Previously our office expected job growth of around 3 percent annual through the end of 2017, while the current outlook expects growth slightly less strong. Wages and incomes remain similar, although revised downward 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 match 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.

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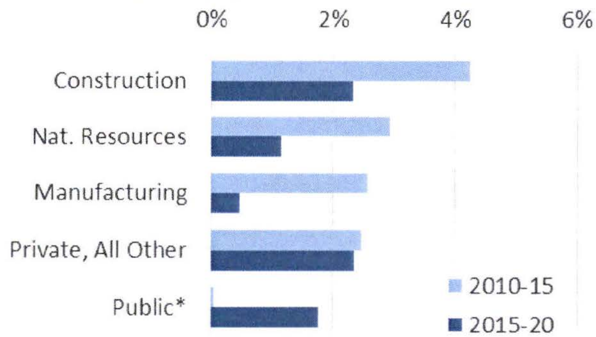
[6] http://pages.uoregon.edu/jpiger/us_recession_probs.htm/

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, have been growing at above-average rates. However, this is expected to change moving forward. All three major goods-producing industries are expected to grow slower in the coming years than they have seen in the recent past. 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 is expected to experience very minimal gains in the coming years. Not only is Intel, the state's largest private employer, downsizing, much, if not all of the cyclical rebound in manufacturing has run its course. The weak global economy and strong Oregon dollar will weigh on growth. What manufacturing gains are expected are among the state's food processers, and beverage manufacturers, predominantly breweries. The baseline outlook does not call for outright manufacturing job losses overall, however that does remain a distinct possibility and risk to the outlook.



*Public corrected for Census workers in 2010
Source: Oregon Employment Dept, Oregon Office of Economic Analysis

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 stay in line with population growth and the increased demand for public services, albeit a little 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.

Economic Forecast Summary

		Quarterly					Annual				
		2016:2	2016:3	2016:4	2017:1	2017:2	2015	2016	2017	2018	2019
Personal Income, Nominal	U.S.	2.9	4.8	4.7	4.9	4.8	4.4	3.3	4.7	5.0	5.0
% change	Oregon	4.6	6.4	5.6	5.9	6.0	6.0	5.3	6.0	6.3	5.8
Wages and Salaries, Nominal	U.S.	2.4	5.1	5.2	5.5	5.2	5.1	3.5	5.1	5.0	4.7
% change	Oregon	3.9	7.8	6.4	6.9	7.0	6.9	6.6	6.9	6.6	5.5
Population	U.S.	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
% change	Oregon	1.3	2.2	1.1	1.1	1.2	1.3	1.4	1.4	1.4	1.3
Housing Starts	U.S.	1.16	1.18	1.22	1.27	1.36	1.11	1.18	1.37	1.49	1.55
U.S. millions, Oregon thousands	Oregon	18.3	18.6	19.5	20.5	21.1	16.0	18.9	21.4	23.0	23.1
Unemployment Rate	U.S.	4.9	4.9	4.8	4.7	4.7	5.3	4.9	4.7	4.8	4.9
	Oregon	4.6	5.0	5.0	5.0	5.1	5.7	4.9	5.1	5.3	5.4
Total Nonfarm Employment	U.S.	1.3	1.7	1.4	1.5	1.0	2.1	1.7	1.2	0.8	0.8
% change	Oregon	2.6	2.7	2.8	2.9	2.8	3.3	3.2	2.7	2.1	1.2
Private Sector Employment	U.S.	1.4	1.8	1.7	1.7	1.1	2.4	2.0	1.4	0.8	0.8
% change	Oregon	2.6	2.7	2.8	3.0	3.0	3.6	3.4	2.9	2.3	1.2

Along with an improving labor market, stronger personal income gains will come. 2013 personal income is estimated to have increased by just 1.6 percent. This largely reflects the pulling forward of investment-type income into 2012 in anticipation of increased federal tax rates in 2013. Personal income rebounded strongly in 2014, with gains of 5.7 percent, followed by 6.0 percent growth in 2015. Continued strong gains are expected moving forward, along with a full throttle economic expansion. Income growth is forecasted to be 5.3 percent in 2016 and 6.0 percent in 2017.

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 second quarter totaled 18,300 at an annual pace. While this marks a slight slowdown from the first quarter, these levels of construction are the highest since 2007. However, a level of about 21,000 is the long-run average for the state prior to the housing bubble, and the forecast calls for strong growth in the coming few years with starts reaching nearly 19,000 in 2016 and nearly 22,000 in 2017. Over the extended horizon, starts are expected to average a little more than 23,000 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. While there are no real worrisome signs in the Oregon data as of today, the fact that there are some worrisome trends at the U.S. level means Oregon should be concerned. 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.
- Strength and durability of the housing market recovery. The housing market is recovering in fits and starts in recent years, at least in terms of new construction and the economic boost it provides. This uneven pattern of growth has direct implications for regional economies within in the state – namely the medium sized metros and more rural areas. As the recovery continues, some of the same underlying dynamics of growth will reappear. Chief among them is low inventory, which is not keeping up with demand. As such, home prices are rising. There remains much more room for improvement before the market (sales of both existing homes and new construction activity) reflects anything approaching normal levels. While foreclosures and long-term delinquency rates remain somewhat elevated, when

compared with pre-recession levels, the market has certainly passed the peak of foreclosures and is working through the backlog of distressed properties. Oregon, with the rest of the nation, will see sizable improvements of construction activity in 2016 and 2017.

- 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 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 – has spillover effects to the Oregon economy. The recent economic slowdown across much of Asia is a growing threat to the Pacific Northwest's growth prospects.

- Federal fiscal policy. Federal fiscal policy remains a risk. 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 abating somewhat this year, the drought impacting 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 is expected to increase in cost and size in 2015. Earlier this year the drought had certainly reached Oregon as well and most eastern and/or southern counties were classified accordingly. The impact is most 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 payments. Even with the temporary reinstatement, 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[7].
- Initiatives, referendums, and referrals. Generally, the ballot box and legislative changes bring a number of unknowns that could have sweeping impacts on the Oregon economy and revenue picture.

Alternative Scenarios

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

Optimistic Scenario: The recovery gathers steam and pulls the economy into a stronger cyclical expansion. The lackluster economic growth seen in the early 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 through the end of the year and into 2017. The economy is soon firing on all cylinders. Economic growth is above potential in late 2016 and 2017, 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 by late 2016 or about a year earlier than the baseline.

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 late 2016. The housing market stalls (again), removing one driver of growth. The Fed's tightening in December 2015 and September or December 2016 causes emerging market turmoil and capital flight. The U.S. dollar strengthens further, fully choking off the manufacturing cycle. These factors are enough weight on the lackluster recovery that late-2016 the economy slides back into recession. Job losses ensue in 2017, and while not severe – about 26,000 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 7.5 percent. The net effect of the mild recession is an extended period of prolonged economic

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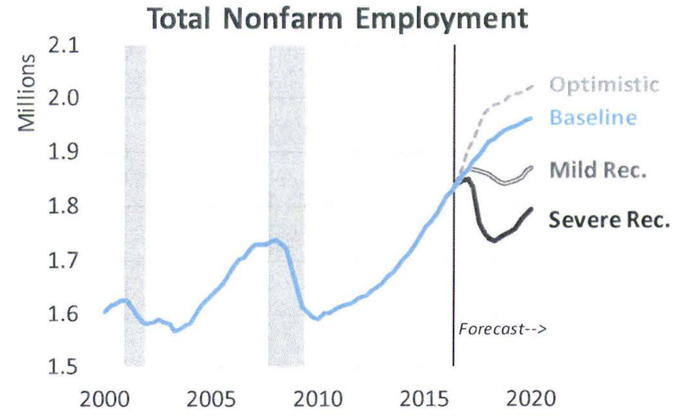
[7] http://oregoneconomicanalysis.wordpress.com/2012/01/23/historical-look-at-oregons-wood-product-industry
http://oregoneconomicanalysis.wordpress.com/2013/05/28/timber-counties/

weakness, not unlike Japan's so-called Lost Decade(s). Although inflation is expected to remain positive, a key difference.

Alternative Scenarios **Sep 2016**



	2016	2017	2018	2019
Employment				
Baseline	3.2%	2.7%	2.1%	1.8%
Optimistic	3.6%	4.9%	2.8%	2.0%
Mild Recession	3.2%	1.5%	-0.9%	-1.0%
Severe Recession	3.1%	-1.8%	-3.3%	-1.7%
Personal Income				
Baseline	5.3%	6.0%	6.3%	6.1%
Optimistic	6.7%	9.1%	7.2%	6.6%
Mild Recession	5.3%	4.7%	3.4%	3.6%
Severe Recession	5.3%	1.2%	0.2%	2.6%

Severe Recession Scenario: The economy is not able to reach escape velocity from the lackluster recovery to date. The weakening industrial production and personal income in the U.S. worsens. The Fed's premature tightening in 2015 and again in 2016 (twice!) and the increasing turmoil in domestic and international markets sends the economy into free-fall. 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 115,000 Oregonians lose their jobs in 2017-18. 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 fourth fastest among all states across the country in terms of growth with gains averaging 3.0 percent through 2021. Total employment is expected to be the eighth strongest among all states at an annualized 1.5 percent, while manufacturing employment will be the fourth fastest in the country at 1.2 percent. Total personal income growth is expected to be 5.1 percent per year, the eighth fastest among all states, according to IHS Economics.

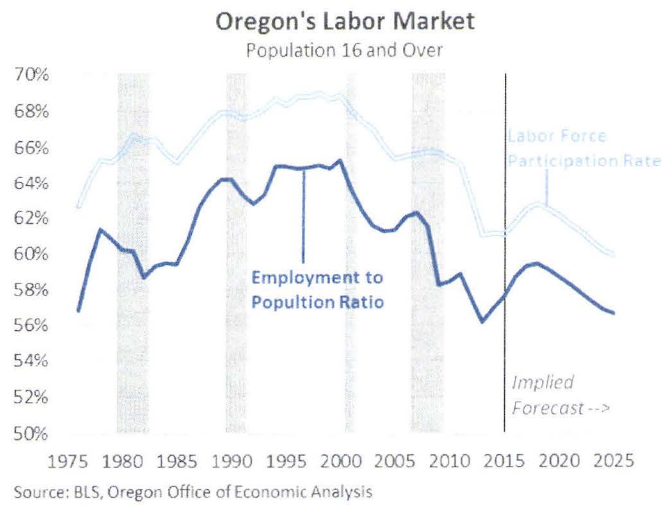
OEA is somewhat more bullish as our office expects the peak growth rates in the economy to persist longer than does IHS. Oregon will also maintain a growth advantage relative to other states. However, this advantage will be somewhat smaller than the state has enjoyed in past decades.

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 recent months 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 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.

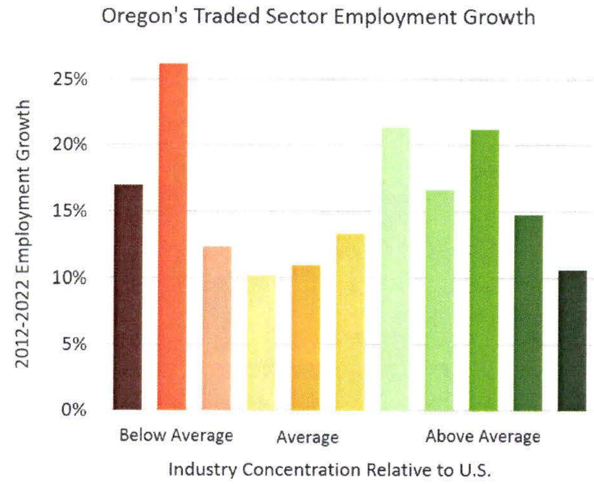
All told, our office's baseline outlook calls for some continued improvement in the near-term for both the labor force participation rate and the employment to population ratio. These gains are due to the shorter run cyclical rebound in the economy, before longer-run demographic trends will weigh on 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.

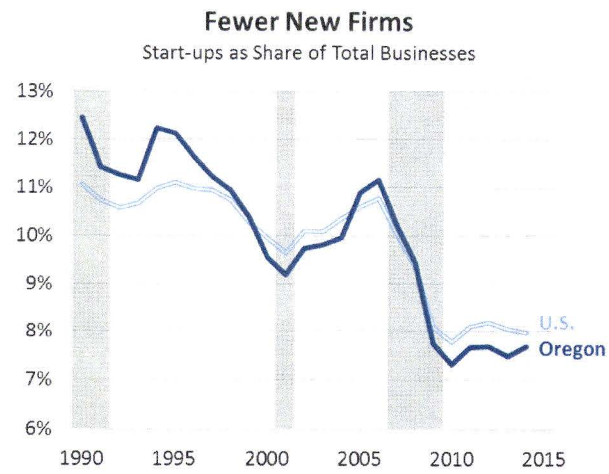
With that being said, certainly not all hope is lost. Many industries in which Oregon has a larger concentration that then typical state are expected to perform well over the coming decade. These industries include management of companies, food and beverage manufacturing, published software along with 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.



Industry concentration = 2012 employment location quotient at 4 digit NAICS level
Each column represents approximately 1/11 of Oregon traded sector employment
Source: BLS, Oregon Employment Department, Oregon Office of Economic Analysis calculations

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.

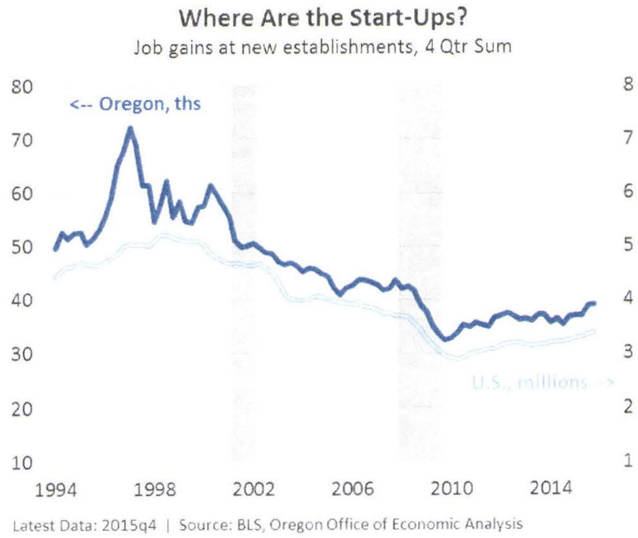


Latest Data: 2014 | Source: Census Bureau, Oregon Office of Economic Analysis

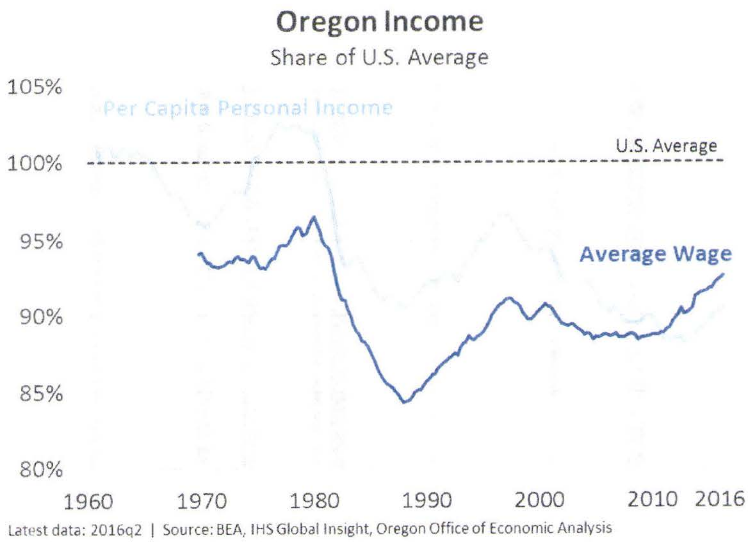
Finally, Oregon also enjoys the long-term advantages of low electricity costs; a central location between the large markets of California, Vancouver and Asia; clean water; low business rents and living costs; and an increasingly diverse industrial base.

One primary 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[8] a detailed look at Oregon's per capita personal income.

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.



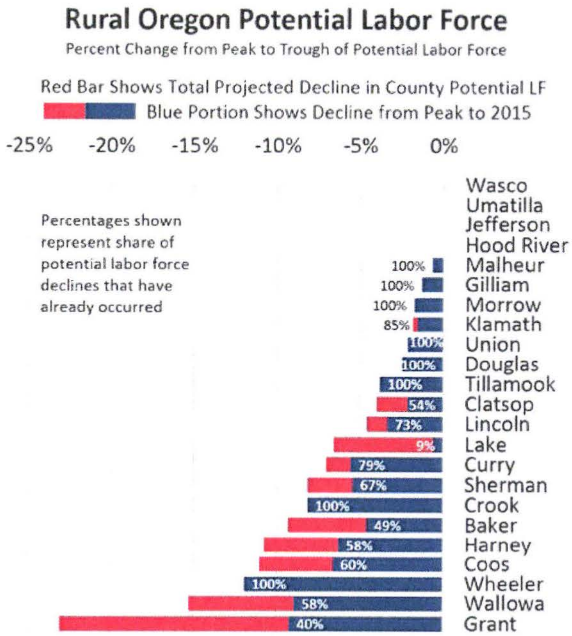
In terms of the outlook, expectations are that wages will remain at this high watermark but not increase, relative to the nation, much further. The primary reason for this is that Oregon's average wages have already accelerated in recent years, even as U.S. wages are just now picking up. Our office expects 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.



8 http://olmis.emp.state.or.us/olmisj/PubReader?itemid=00007366

Oregon Regional Trends – Rural Oregon's Potential Labor Force

Much of the rural Oregon discussion and data are backward looking. They indicate how many jobs were lost in the 1980s or how old the typical resident is. While these statistics help describe the current lay of the land, they do not necessarily tell us what tomorrow may bring. To be sure, many of the more forward-looking indicators are also less bright in much of rural Oregon than in urban Oregon, but not all hope is lost. If fact, if anything, some of the pessimism about rural Oregon may be a bit overdone due to demographics. Yes, demographics.

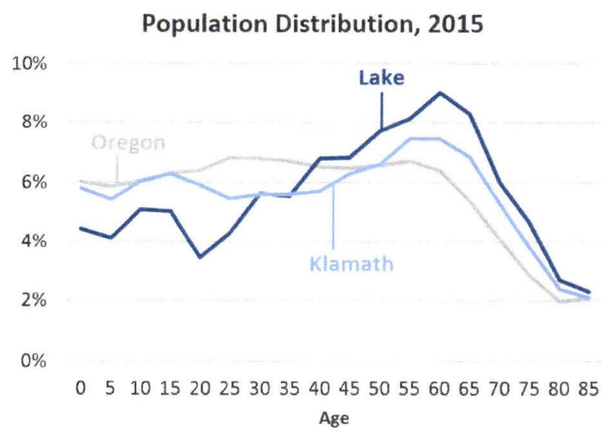


Source: Census, Portland State Population Research Center, Oregon Office of Economic Analysis

Baby Boomer retirements are and will continue to weigh on net economic growth rates. However in much of rural Oregon this slowdown has already taken place. It is in the rear-view mirror. Moving forward, the potential labor force – a measure that takes into account demographics and labor force participation by age – will pick up and in some regions it already has.

What matters from an economic perspective is when an individual ages from their prime-working and peak-earning years into retirement. Unless another individual takes their place, this represents a decline in the economic potential of the economy, everything else equal. And in much of rural Oregon there has been a decline in the potential labor force given demographic and population trends.

However, rural Oregon is nearly all the way through this demographic drag, while it is just now hitting the metropolitan areas of the state. For example, Southeast Oregon is 80 percent of the way through their drag. That said individual counties do differ, even neighboring ones. Both Klamath and Lake counties skew older than the state, but Lake considerably more. The largest population groups in these counties are all between 50 and 69 years old. As such there has not been much of a decline in the potential labor force, however in the coming decade or two there will be. Given the younger age groups are considerably larger in Klamath, the declines in the potential labor force will be less severe and shorter in duration.



Source: Portland State - Population Research Center, Oregon Office of Economic Analysis

The outlook for rural Oregon contains many challenges. However the aging demographics are likely overstated from this point forward. The potential labor force is set to grow again in the near future based on the demographic and population forecasts. That said, it is certainly possible that the actual number of jobs and the actual size of the labor force will remain smaller in the future than in the past. The demographic headwind has been real in rural Oregon over the past 10-20 years, however is set to lessen.

For more: https://oregoneconomicanalysis.com/2016/07/21/rural-oregons-potential-labor-force/

State Comparisons

Headline unemployment is back down to pre-Great Recession rates across much of the country. However, given the ongoing labor force participation issues and higher share of those working part-time but want full-time work, economic slack remains. The economy is not quite at full employment. However as the economy continues to expand, such slack is diminishing.

In fact, applying Dartmouth professor Andrew Levin's Total Employment Gap methodology to all states shows that for the first time since the Great Recession the number of individual states at full employment now outnumber those with large employment gaps. The typical state's gap is just 1 percent in the second quarter, down from a high of more than 5 percent in late 2010. While job growth has not been stellar across much of the country, it has been persistent and cumulative progress is clearly being made.

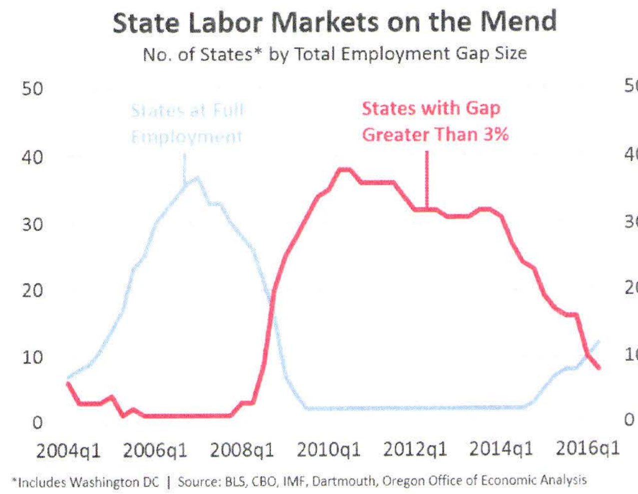
While increasing, the number of states at full employment stands at just 12 today compared with more than 30 states during 2006 and 2007. Individual performances vary but a few patterns stand out.

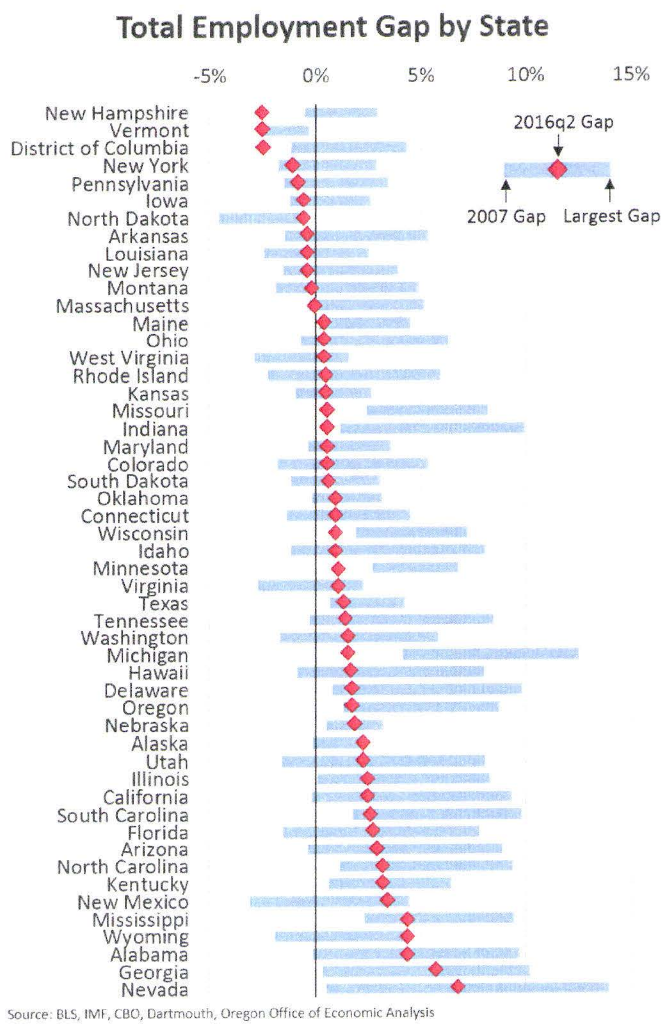
Rust Belt states today are generally at or near their lowest employment gaps. The region is performing better today than during the housing boom when the national expansion largley passed the region by.

Housing bust states have seen considerable improvements in recent years. However given the severity of the recession, employment gaps remain above the typical state.

The oil patch has seen their progress halted due to the energy bust. Some oil states are seeing increasing employment gaps over the past year.

While further progress is required, particularly on the underutilization measures, the economy is approaching full employment, both nationally and across states.



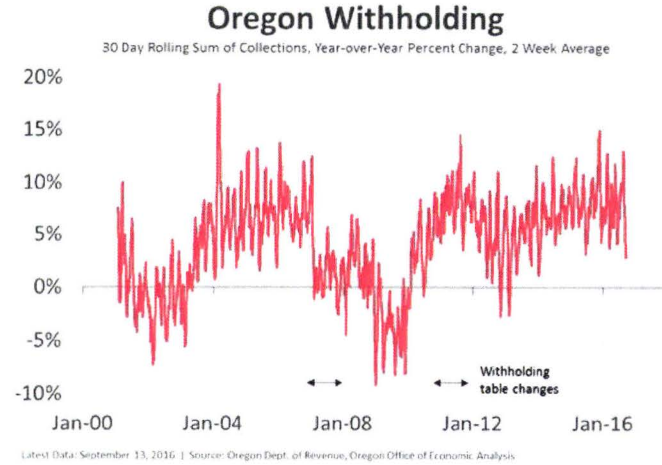


REVENUE OUTLOOK

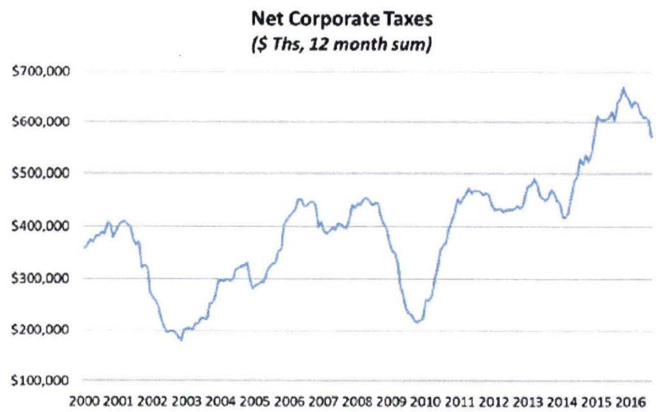
Revenue Summary

Oregon's General Fund revenue outlook remains stable. Personal income tax collections continue to expand at a healthy pace, keeping revenues in line with what was expected when the budget was drafted. Oregon's General Fund revenues are currently expected to end the biennium within 0.1% of the Close of Session forecast.

Personal income tax collections continue to reflect Oregon's strong underlying labor market. Withholdings out of paychecks expanded at an 8% rate during fiscal year 2016. As such, state revenue growth in Oregon remains among the strongest in the U.S. State revenue growth would have been even more rapid in recent months if not for the payout of the personal income tax kicker generated during the 2013-15 biennium. The vast majority of kicker payments have now been made, and will no longer weigh on overall collections.



In contrast to the healthy growth seen in personal income tax collections, corporate tax collections have been falling sharply in recent months. Nationwide, corporate profits have taken a step back, largely due to rapid appreciation of the U.S. dollar and struggles among energy firms and other commodity producers. Even so, profits and corporate tax collections remain large relative to historical norms. Given the expectation that collections would return to earth, revenue declines were built into the forecast, leaving the outlook very close to the Close of Session forecast for now. Declines are expected to continue through the current fiscal year, further reducing annual revenues by around $50 million.



In addition to healthy General Fund revenue growth, Oregon Lottery sales and Estate taxes have been very strong as well. Recent collections have consistently come in above expectations.

Revenue growth in Oregon and other states will face considerable downward pressure over the 10-year extended forecast horizon. As the baby boom population cohort works less and spends less, traditional state tax instruments such as personal income taxes and general sales taxes will become less effective, and revenue growth will fail to match the pace seen in the past.

2015-17 General Fund Revenues

General Fund revenues for the 2015-17 biennium are expected to reach $18,022 million. This represents a decrease of $1.3 million (0.0%) from the June 2016 forecast, and an increase of $1.9 billion (11.9%) relative to the 2013-15 biennium. General Fund revenues for the 2015-17 biennium are now expected to come in $24 million (0.1%) above the Close of Session forecast.

Personal Income Tax

Personal income tax collections were $2,309 million during the fourth quarter of fiscal year 2016, $105 million (4.7%) above the latest forecast. Compared to the year-ago level, total personal income tax collections fell by 3.2% relative to a forecast that called for a 7.6% decline. Declines relative to last year were the result of kicker payments. Table B.8 in Appendix B presents a comparison of actual and projected personal income tax revenues for the April-June quarter. It should be noted, however, that comparisons with past tax collections have been complicated by the use of a new personal income tax processing system.

Corporate Excise Tax

Corporate excise tax collections equaled $192 million for the fourth quarter of fiscal year 2016, $8 million above the June forecast. Compared to the year-ago level, net corporate excise tax collections fell by 12.8% relative to a forecast that called for a 16.4% decline.

Corporate tax collections remain above historical norms even after recent declines. In addition to profitability, recent law changes have supported collections, as has a decline in outstanding Business Energy Tax Credits.

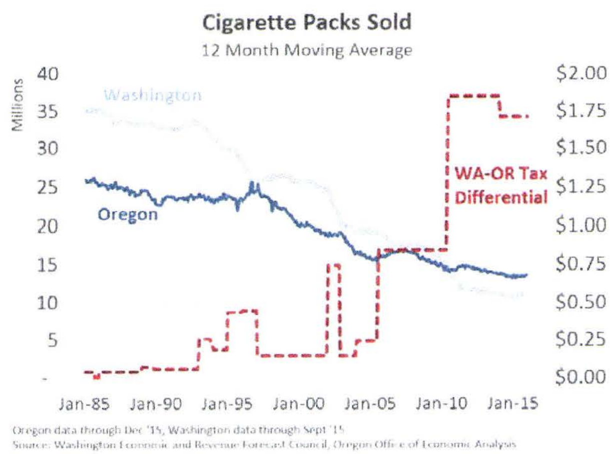
Corporate income tax collections for 2015-17 are now expected to end the biennium 1.0% higher than what was called for in the Close of Session forecast.

Tobacco Tax Revenue

Cigarettes sold in Oregon have been on a long-run decline since the early 1980s, if not longer, as the smoking rate and overall consumption and usage have plunged. Oregon's trends have matched or exceeded the national ones over this time period. However, packs sold in 2015 were 2.7 percent higher than in 2014, or nearly 360,000 more. The increase in sales has resulted in more tax revenue than expected. So far in the first year of the 2015-17 biennium, actual cigarette tax revenue has exceeded forecast by $15.1 million, of which $2.6 million is General Fund.

This increase in cigarette sales last year is national in scope, based on conversations with our office's counterparts around the country. The vast majority of states experienced sales above forecast, with many seeing outright increases in sales like Oregon. This indicates the driver of the recent strength is national in scope and not any particular local issue.

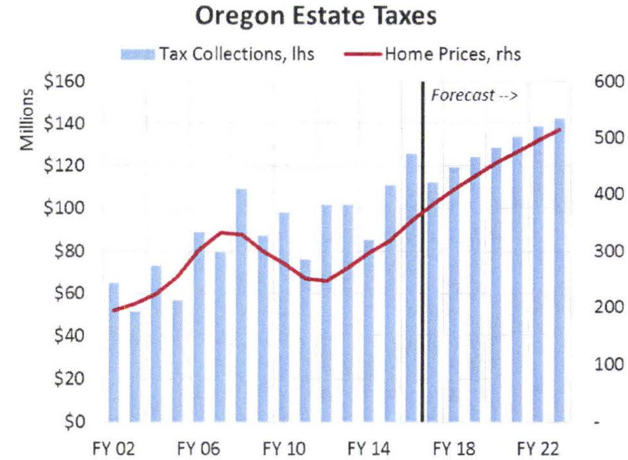
That said, the interplay between tax policy and tax rates in Oregon and Washington has driven sizable fluctuations around the long-term trend in cigarette sales in the Northwest. Typically, when Washington raises taxes and Oregon does not, Washington sales fall considerably and Oregon's stabilize or increase. The opposite is true as well. However one has to go back to the early 1990s to find a time when Oregon sales increased and the tax environment was stable, like it is today.



Estate Tax Revenue

At the time the 2015-17 biennium budget was set by the Legislature, the estate tax forecast called for record levels of revenue. The first year of the biennium exceeded this record-expecting forecast by approximately $16 million (+15%), a considerable margin. As a result, the current outlook for such tax collections has been raised.

There are three competing factors influencing the outlook. The first is that over time asset prices, stocks and houses in particular, will increase. The second is that the large Baby Boomer generation is aging into their retirement years today and into their later ages in the coming decades. As such there will be an increase in the number of Oregonians passing away in the relatively near future. Both of these first two factors suggest a robust outlook for estate tax collections. However the third factor influencing the outlook is increased, or improved estate planning on the part of families and their accountants. Through various plans and gifts and the like, legal tax avoidance or minimization can be achieved. Relative to the robust outlook due to growing asset values and an aging population, the baseline forecast is adjusted lower to account for estate planning on the part of Oregon families and their tax professionals.



Latest Data: Fiscal Year 2016 | Source: Oregon DOR, Oregon Office of Economic Analysis

Other Sources of Revenue

Liquor revenues from the Oregon Liquor Control Commission have been raised $35.4 million for the 2017-19 biennium due to the Commission extending the $0.50 per bottle surcharge. Absent the surcharge change, the underlying liquor revenue outlook remains unchanged.

All other sources of General Fund revenues remain relatively unchanged in recent months. The net adjustment for these sources is a reduction of $375,000 (-0.1%) relative to the previous forecast. These minor

Table R.1

2015-17 General Fund Forecast Summary

(Millions)	2015 COS Forecast	June 2016 Forecast	September 2016 Forecast	Change from Prior Forecast	Change from COS Forecast
Structural Revenues					
Personal Income Tax	$15,713.5	$15,702.1	$15,713.7	$11.6	$0.3
Corporate Income Tax	$1,100.0	$1,132.3	$1,110.8	-$21.5	$10.8
All Other Revenues	$1,184.6	$1,189.2	$1,197.8	$8.6	$13.2
Gross GF Revenues	$17,998.1	$18,023.6	$18,022.3	-$1.3	$24.2
Offsets and Transfers	-$42.8	-$43.6	-$44.4	-$0.9	-$1.7
Administrative Actions[1]	-$20.2	-$14.0	-$14.0	$0.0	$6.2
Legislative Actions	-$158.9	-$158.3	-$158.3	$0.0	$0.6
Net Available Resources	**$18,309.1**	**$18,336.5**	**$18,334.3**	**-$2.2**	**$25.2**
Confidence Intervals					
67% Confidence	+/- 3.7%		$669.3	$17.35B to $18.69B	
95% Confidence	+/- 7.4%		$1,338.7	$16.68B to $19.36B	

1 Reflects cost of cashflow management actions, exclusive of internal borrowing.

adjustments included a slight increase in insurance taxes that were offset by a decrease in security fees. In terms of judicial revenues, the outlook for state court fees has increased somewhat but criminal fines and assessments has decreased.

Extended General Fund Outlook

Table R.2 exhibits the long-run forecast for General Fund revenues through the 2023-25 biennium. Users should note that the potential for error in the forecast increases substantially the further ahead we look.

Revenue growth in Oregon and other states will face considerable downward pressure over the 10-year extended forecast horizon. As the baby boom population cohort works less and spends less, traditional state tax instruments such as personal income taxes and general sales taxes will become less effective, and revenue growth will fail to match the pace seen in the past.

Table R.2

General Fund Revenue Forecast Summary (Millions of Dollars, Current Law)

Revenue Source	Forecast 2013-15 Biennium	% Chg	Forecast 2015-17 Biennium	% Chg	Forecast 2017-19 Biennium	% Chg	Forecast 2019-21 Biennium	% Chg	Forecast 2021-23 Biennium	% Chg	Forecast 2023-25 Biennium	% Chg
Personal Income Taxes	13,958.3	15.2%	15,713.7	12.6%	17,424.8	10.9%	19,228.3	10.4%	21,422.9	11.4%	23,389.3	9.2%
Corporate Income Taxes	1,116.5	26.3%	1,110.8	-0.5%	1,018.2	-8.3%	1,052.6	3.4%	1,114.5	5.9%	1,169.3	4.9%
All Others	1,030.2	-11.4%	1,197.8	16.3%	1,123.5	-6.2%	1,179.6	5.0%	1,260.6	6.9%	1,338.6	6.2%
Gross General Fund	16,105.0	13.7%	18,022.3	11.9%	19,566.4	8.6%	21,460.5	9.7%	23,798.0	10.9%	25,897.2	8.8%
Offsets and Transfers	*(74.5)*		*(44.4)*		*(72.1)*		*(75.4)*		*(76.5)*		*(78.8)*	
Net Revenue	16,030.5	13.3%	17,977.8	12.1%	19,494.3	8.4%	21,385.1	9.7%	23,721.6	10.9%	25,818.4	8.8%

General Fund revenues are expected to total $19,566 million in the 2017-19 biennium, an increase of 8.6% percent from the prior period, and $56 million below the June forecast. In the 2019-21 biennium, revenue growth is expected to reach 9.7%, followed by rates of 10.9% in the 2021-23 biennium and 8.8% in the 2023-25 biennium. The slowdown in long-run revenue growth is largely due to the impact of slower labor force growth and changes in savings behavior. In particular, the labor force will lose many very productive workers with a lifetime of experience over the coming years. On a smaller scale, a newly enacted minimum wage increase will weigh on the outlook over the extended horizon. Table B.2 in Appendix presents a more detailed look at the long-term General Fund revenue forecast.

Tax Law Assumptions

The revenue forecast is based on existing law, including measures and actions signed into law during the 2015 Oregon Legislative Session. OEA makes routine adjustments to the forecast to account for legislative and other actions not factored into the personal and corporate income tax models. These adjustments can include expected kicker refunds, when applicable, as well as any tax law changes not yet present in the historical data. A summary of actions taken during the 2015 Legislative Session can be found in Appendix B Table B.3. For a detailed treatment of the components of the 2015 Legislatively Enacted Budget, see: LFO 2015-17 Budget Summary. For changes made during the 2016 short session see: Budget Highlights 20152017.

Although based on current law, many of the tax policies that impact the revenue forecast are not set in stone. In particular, sunset dates for many large tax credits have been scheduled. As credits are allowed to disappear, considerable support is lent to the revenue outlook in the outer years of the forecast. To the extent that tax credits are extended and not allowed to expire when their sunset dates arrive, the outlook for revenue growth will be reduced. The current forecast relies on estimates taken from the Oregon Department of Revenue's 2015-17 Tax Expenditure Report together with more timely updates produced by the Legislative Revenue Office.

Alternative Scenarios

The latest revenue forecast for the current biennium represents the most probable outcome given available information. OEA feels that it is important that anyone using this forecast for decision-making purposes recognize the potential for actual revenues to depart significantly from this projection.

Currently, the overwhelming downside risk facing the revenue outlook is the threat that the U.S. economic recovery will lose steam in the near term. Such a scenario, however it played out, would result in drastic revenue losses. Two recessionary scenarios are displayed in table R.2b. In a severe recession, biennial revenues could come in as much as $2 billion lower than predicted[9].

[9] The methodology for computing alternative scenarios has been changed to reflect recent work done by the Legislative Revenue Office. Assumptions: Recessions begin in 2017 and return to baseline income by 2024. The moderate recession scenario assumes personal income growth will be reduced by one-half relative to the baseline in 2017 and 2018. The severe recession scenario assumes personal income will decline in 2017 by as much as it did in 2009. The percentage deviation in personal income taxes is 1.4 times the deviation in personal income. The percentage deviation in corporate income taxes is 2.0 times the deviation in personal income.

TABLE R2b September 2016

Alternative Cyclical Revenue Forecast ($ millions)

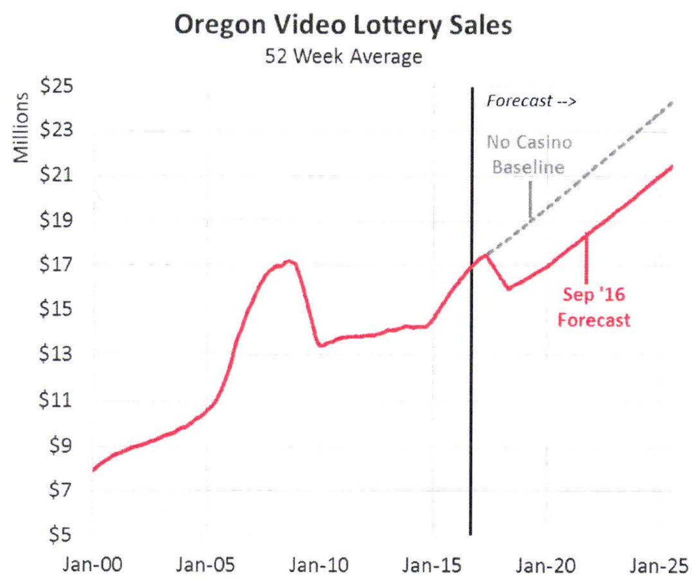
	2015-17 BN		2017-19 BN		2019-21 BN		2021-23 BN		2023-25 BN	
Baseline Case	FY '16	FY '17	FY '18	FY '19	FY '20	FY '21	FY '22	FY '23	FY '24	FY '25
Personal Income										
Level	178.08	187.84	199.65	211.64	223.90	235.46	245.73	259.12	270.75	282.86
% change	*5.8%*	*5.5%*	*6.3%*	*6.0%*	*5.8%*	*5.2%*	*4.4%*	*5.5%*	*4.5%*	*4.5%*
Taxes										
Personal Income	7,753	7,961	8,495	8,930	9,320	9,909	10,473	10,950	11,437	11,953
Corporate Excise & Income	610	501	504	514	522	531	548	567	579	590
Other General Fund	536	662	548	576	575	605	618	643	657	682
Total General Fund	8,899	9,124	9,548	10,019	10,416	11,045	11,638	12,160	12,672	13,225
% change	*5.2%*	*2.5%*	*4.6%*	*4.9%*	*4.0%*	*6.0%*	*5.4%*	*4.5%*	*4.2%*	*4.4%*
Moderate Recession	FY '16	FY '17	FY '18	FY '19	FY '20	FY '21	FY '22	FY '23	FY '24	FY '25
Personal Income										
Level	178.1	183.3	190.1	203.7	217.9	231.1	243.0	256.8	268.8	282.5
% change	*5.8%*	*2.9%*	*3.7%*	*7.2%*	*7.0%*	*6.0%*	*5.1%*	*5.7%*	*4.6%*	*5.1%*
Taxes										
Personal Income	7,753	7,689	7,924	8,458	8,973	9,651	10,308	10,805	11,304	11,904
Deviation from baseline		*-272*	*-571*	*-471*	*-347*	*-258*	*-165*	*-144*	*-133*	*-49*
Corporate Excise & Income	610	476	456	475	494	511	535	557	571	589
Deviation from baseline		*-24*	*-48*	*-39*	*-28*	*-20*	*-12*	*-10*	*-8*	*-2*
Other General Fund	536	662	548	576	575	605	618	643	657	682
Total General Fund	8,899	8,828	8,928	9,509	10,041	10,767	11,461	12,005	12,531	13,174
% change	*5.2%*	*-0.8%*	*1.1%*	*6.5%*	*5.6%*	*7.2%*	*6.4%*	*4.8%*	*4.4%*	*5.1%*
Deviation from baseline		*-296*	*-620*	*-510*	*-375*	*-278*	*-178*	*-154*	*-141*	*-51*
Biennial Deviation		*-296*		*-1,130*		*-653*		*-332*		*-192*
Severe Recession	FY '16	FY '17	FY '18	FY '19	FY '20	FY '21	FY '22	FY '23	FY '24	FY '25
Personal Income										
Level	178.1	171.2	180.2	195.8	212.2	227.5	241.7	255.5	267.4	280.1
% change	*5.8%*	*-3.9%*	*5.3%*	*8.7%*	*8.3%*	*7.2%*	*6.2%*	*5.7%*	*4.6%*	*4.8%*
Taxes										
Personal Income	7,753	6,972	7,337	7,996	8,635	9,439	10,231	10,725	11,220	11,751
Deviation from baseline		*-988*	*-1,158*	*-933*	*-685*	*-470*	*-242*	*-225*	*-217*	*-202*
Corporate Excise & Income	610	412	406	437	467	495	530	551	564	576
Deviation from baseline		*-89*	*-98*	*-77*	*-55*	*-36*	*-18*	*-16*	*-14*	*-14*
Other General Fund	536	662	548	576	575	605	618	643	657	682
Total General Fund	8,899	8,046	8,292	9,009	9,676	10,539	11,378	11,919	12,441	13,009
% change	*5.2%*	*-9.6%*	*3.0%*	*8.7%*	*7.4%*	*8.9%*	*8.0%*	*4.8%*	*4.4%*	*4.6%*
Deviation from baseline		*-1,077*	*-1,256*	*-1,010*	*-739*	*-506*	*-260*	*-240*	*-231*	*-216*
Biennial Deviation		*-1,077*		*-2,266*		*-1,245*		*-500*		*-447*

Lottery Earnings

Lottery proceeds continue to boom and come in ahead of expectations, primarily driven by ongoing strength in video lottery sales. While Fiscal Year 2016 results did not quite match the record levels set back in 2008, sales in recent months are at an all-time high. Video lottery growth is slowing somewhat, edging lower from 10 percent growth a year ago to 7 percent growth today. This is to be expected. Sales do not grow at double-digit rates forever. However these gains remain quite strong.

Our office made two big changes to the outlook in our previous forecast (June 2016). First, given the ongoing economic strength and improving gaming market nationwide, we raised the underlying, fundamental sales forecast for video lottery. Second, for the first time, the forecast also included an estimated impact due to the Cowlitz Tribe's upcoming casino in La Center, Washington (16 miles north of Portland) which is set to open in "late spring" 2017. While the casino won approval a year or two ago, legal challenges remained and our office had previously taken a wait and see approach before adjusting the outlook accordingly.

Initially our office's estimate of the casino's impact was set at a loss of around $100 million per year in video lottery sales, or $65 million per year reduction in transfers. This estimate was based off the Legislative Revenue Office's previous work on the impact of the proposed Wood Village casino in 2012, with some updates to incorporate the larger gaming market today and the like. That approach started by examining the total gaming market in the Portland region and estimating what share of the market the new casino would take. It was a top-down approach to arrive at an estimate.



Latest Data: August 27, 2016 | Source: Oregon Lottery, Oregon Office of Economic Analysis

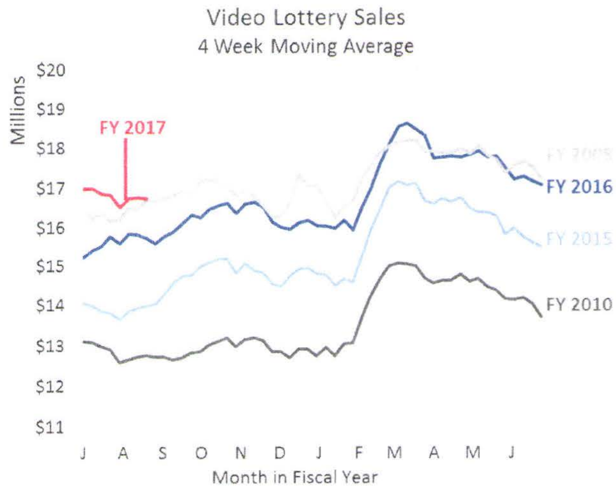
The only real change to the Lottery outlook made in this forecast is to increase the estimated impact due to the Cowlitz casino to around $120 million per year, or $78 million per year reduction in transfers. This slightly larger estimate is based on a bottom-up approach that starts by examining video lottery sales at the individual retailer and neighborhood/zip code level. More than half of Oregon's statewide video lottery sales occur within the Portland MSA. 11 percent of statewide video lottery sales occur within just the northern portion of the Portland MSA – from St. Johns through Parkrose, including Hayden Island. Anecdotal evidence, like the proportion of Washington license plates in the parking lots suggest that a significant, and likely majority of the video lottery players in these retailers live in the State of Washington. Such border effects – where Oregon has video lottery in retailers throughout the state, while neighboring states do not – are seen not only across the two interstate bridges in Portland, but also in nearly all the population centers along Oregon's borders with California, Idaho and Washington. If these northern Portland zip codes see a 40-50 percent decline in video lottery sales, that means total statewide video lottery sales would decline 4.5 to 5.5 percent. Factoring in additional losses of around 10-15 percent throughout the rest of the Portland region brings the statewide total impact to nearly 12 percent, relative to the no casino baseline.

Both the top-down and bottom-up approaches yield fairly close estimates in terms of the new Cowlitz Tribe casino. Our office will continue to work on refining the estimates and updating the likely impact in the coming quarterly forecasts. In particular, with the help of the Lottery research division, we are currently working on learning more about how many of the current players are Washingtonians and how far into the Portland market they travel to play.

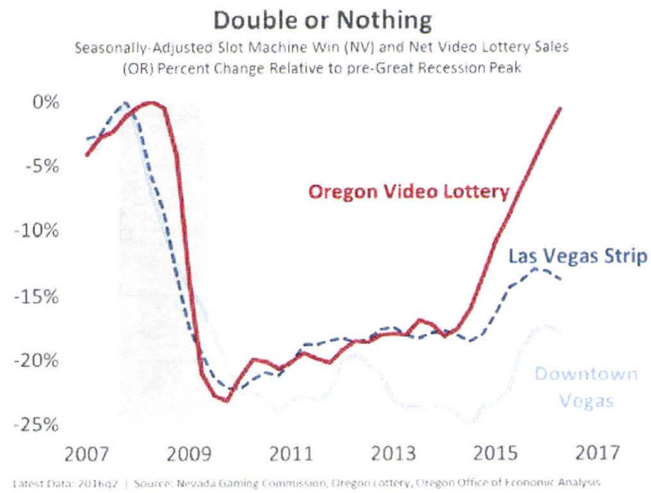
All told, relative to the previous forecast, Lottery earnings for 2015-17 were increased $8.3 million due to the ongoing strength in video lottery sales. The larger casino impact is seen in the 2017-19 forecast in which earnings are lowered $14.4 million relative to three months ago. 2019-21 earnings are revised down by $15 million, 2021-23 by $17.1 million and 2023-25 by $18.3 million.

Lottery Overview

Overall, video lottery dominates total lottery earnings, accounting for approximately 88 percent of all lottery transfers in the past two years. Over the past decade, video lottery has underwent four distinct phases.



The first, during the housing boom era, followed the implementation of line games back in 2005. Not only was video lottery new to the marketplace and experienced somewhat of a novelty factor intrigue from consumers, it also coincided with an economic expansion. Growth in the early years of line games was in the double digits and spending as a share of statewide income increased by 40 percent.



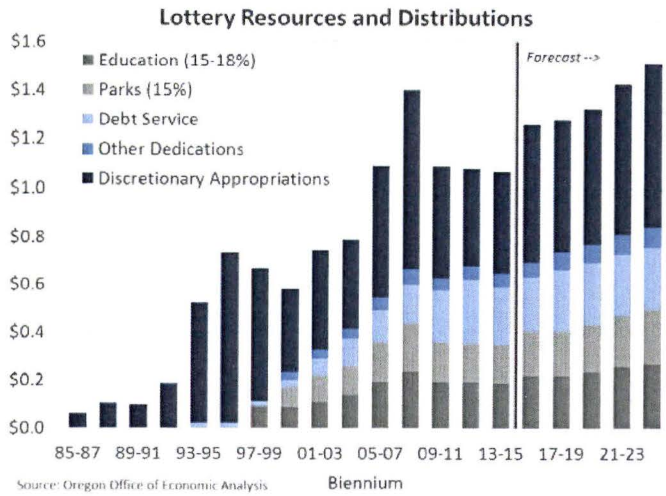
The second phase followed the onset of the Great Recession and enactment of the smoking ban in Oregon. During this time, video lottery sales plummeted 23 percent from pre-recession highs to the depths of the recession; the same magnitude of losses seen in slot machines in Clark County, Nevada, home of Las Vegas.

The third phase covered the initial years of recovery, fiscal years 2010 to 2014. Even as Oregon video lottery sales rebounded at approximately three times the rate seen in Clark County, Nevada, growth still averaged just 1.2 percent per year. Similar sales trends were seen nationwide across the gaming industry, although Oregon's slow growth was better than most where sales were flat to down.

Fiscal Year 2015 marked a new phase in Oregon video lottery history with the capital replacement plan. Lottery is replacing the 12,000 existing video lottery terminals throughout the state with new machines and underlying IT system. Due to advancements in technology, like a lot of industries, the current machines are becoming obsolete in the marketplace. The replacement program cost approximately $215 million over four years, of which Lottery self-funded $85 million. The remaining $130 million was deduced from Lottery earnings prior to being transferred for general revenue purposes. The Lottery has replaced more than half of the terminals today and the reduced transfers, to set-aside money, were completed in Fiscal Year 2016.

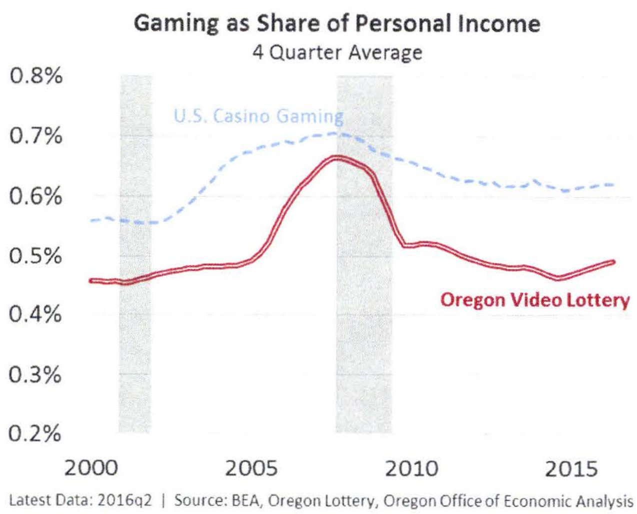
As the first wave of these new video lottery terminals has been deployed across Oregon – essentially two new terminals in each retailer – there has been a sizable initial sales bump. Every region of the state, regardless of economic performance in recent years, saw double-digit increases in video lottery sales. The second wave – one more new terminal in each retailer – is nearing completion today.

While sales remain strong, expectations are for a continued modest deceleration in growth until the Cowlitz Tribe casino opens approximately nine months from now, or a little sooner. Video lottery growth has already slowed from around 10 percent year-over-year to 7 percent today. Over the next year, sales are projected to slow further to 5 or 6 percent. After that time, sales are expected to fall approximately 9 percent before resuming growth due to the underlying improvements in the economy and increases in consumer spending.



The Cowlitz Tribe casino will be significantly closer to the Portland MSA than any other existing tribal casino. In fact, La Center, WA is *in* the Portland MSA, albeit 16 miles north of the state border. Overall the Portland MSA accounts for more than half of Oregon video lottery sales, thus the increased competition for gaming dollars will impact state revenues. As the casino's opening nears, our office expects to modify and refine the estimated impact, either up or down, as we gather more information.

Other issues to watch include broader and national trends in gaming markets, demographic preferences for recreational activities, and to what extent consumers increase the share of their incomes spent on gaming. In much of the past 6 years, consumers have remained cautious with their disposable income.



The current outlook does leave room for both upside and downside risks. The Cowlitz Tribe casino may still be derailed due to legal challenges and if not, its impact may be greater or smaller than the current forecast assumes. The stronger economy and new terminals may unlock permanently higher sales. However the increases seen may also prove temporary and just a novelty-bump as Oregonians tried the new machines simply because they were new.

The full extended outlook for lottery earnings can be found in Table B.9 in Appendix B.

Budgetary Reserves

The state currently administers two general reserve accounts, the Oregon Rainy Day Fund[10] (ORDF) and the Education Stability Fund[11] (ESF). This section updates balances and recalculates the outlook for these funds based on the June revenue forecast.

As of this forecast, the two reserve funds currently total a combined $676.0 million. Additionally there is a projected General Fund ending balance for this biennium of $259.6 million, bringing effective reserves to $935.6 million, or about 5.2 percent of current biennium's revenue.

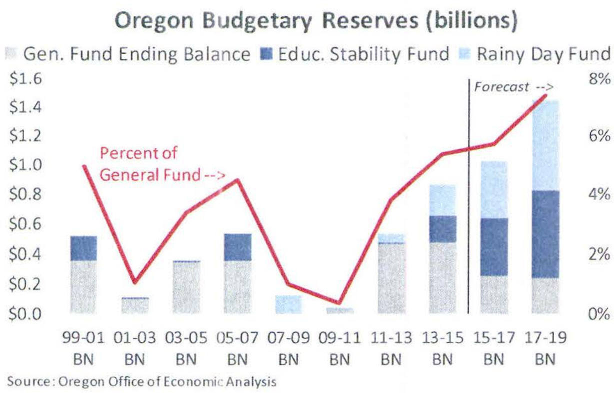
The forecast for the ORDF includes two deposits for this biennium. The first, $158.3 million, is related to the General Fund ending balance from last biennium (2013-15) and occurred in February 2016. The second, $11.8 million, is due to the increased corporate taxes from Measure 67. This brings the projected ORDF ending balance at the end of 2015-17 to $387.8 million.

The forecast calls for $199.3 million in deposits into the ESF in 2015-17 based on the current Lottery forecast. This would bring the ESF balance to $382.9 million at the end of the current biennium.

Together, the ORDF and ESF are projected to have a combined balance of $770.7 million at the close of the 2015-17 biennium. Provided the General Fund ending balance remains unallocated, total effective reserves at the end of 2015-17 would just over $1 billion, or 5.7 percent of current revenues.

Such levels of reserve balances are bigger than Oregon has ever been able to accumulate, at least in the state's recent history. However, that does not indicate they are sufficient to withstand a recession's impact on the state budget. Reserve balances of approximately 7 percent are generally accepted to be able to withstand a recession of average size[12]. Provided the economic expansion continues, Oregon's reserves are projected to reach 7 percent of expenditures at the end of the 2017-19 biennium.

B.10 in Appendix B provides more details for Oregon's budgetary reserves.



Effective Reserves ($ millions)

	Jul 2016	End 2015-17
ESF	$303.2	$382.9
RDF	$372.8	$387.8
Reserves	$676.0	$770.7
Ending Balance	$259.6	$259.6
Total	**$935.6**	**$1,030.4**
% of GF	5.2%	5.7%

[10] The ORDF is funded from ending balances each biennium, up to one percent of appropriations. The Legislature can deposit additional funds, as it did in first populating the ORDF with surplus corporate income tax revenues from the 2005-07 biennium. The ORDF also retains interest earnings. Withdrawals from the ORDF require one of three triggers, including a decline in employment, a projected budgetary shortfall, or declaration of a state of emergency, plus a three-fifths vote. Withdrawals are capped at two-thirds of the balance as of the beginning of the biennium in question. Fund balances are capped at 7.5 percent of General Fund revenues in the prior biennium.

[11] The ESF gained its current reserve structure and mechanics via constitutional amendment in 2002. The ESF receives 18 percent of lottery earnings, deposited on a quarterly basis – 5% of which are deposited in the Oregon Growth sub-account. The ESF does not retain interest earnings. The ESF has similar triggers as the ORDF, but does not have the two-thirds cap on withdrawals. The ESF balance is capped at five percent of General Fund revenues collected in the prior biennium.

[12] Based on a one standard deviation change in revenues. Larger reserves needed to insure against a more severe recession.

POPULATION AND DEMOGRAPHIC OUTLOOK

Population and Demographic Summary

Oregon's population count on April 1, 2010 was 3,831,074. Oregon gained 409,550 persons between the years 2000 and 2010. The population growth during the decade of 2000 to 2010 was 12.0 percent, down from 20.4 percent growth from the previous decade. Oregon's rankings in terms of decennial growth rate dropped from 11th between 1990-2000 to 18th between 2000 and 2010. Oregon's national ranking in population growth rate was 16^{th} between 2010 and 2015 lagging behind all of the neighboring states, except California. Slow population growth during the decade preceding the 2010 Census characterized by double recessions probably cost Oregon one additional seat in the U.S. House of Representatives. Actually, Oregon's decennial population growth rate during the most recent decade was the second lowest since 1900. As a result of economic downturn and sluggish recovery that followed, Oregon's population increased at a slow pace in the recent past. However, Oregon's population growth since 2014 rebounded strongly. Growth in 2015 ranked 10^{th} fastest in the nation, surpassing Idaho and California. Based on the current forecast, Oregon's population will reach 4.39 million in the year 2022 with an annual rate of growth of 1.27 percent between 2015 and 2022.

Oregon's economic condition heavily influences the state's population growth. Its economy determines the ability to retain existing work force as well as attract job seekers from national and international labor market. As Oregon's total fertility rate remains below the replacement level and number of deaths continue to rise due to ageing population, long-term growth comes mainly from net in-migration. Working-age adults come to Oregon as long as we have favorable economic and employment environments. During the 1980s, which include a major recession and a net loss of population during the early years, net migration contributed to 22 percent of the population change. On the other extreme, net migration accounted for 73 percent of the population change during the booming economy of 1990s. This share of migration to population change declined to 32 percent in 2010, lowest since early 1980s when we actually had negative net migration. As a sign of slow to modest economic gain, the ratio of net migration-to-population change has already exceeded 80 percent and remain that way throughout the forecast horizon due largely to combination of increase in net migration and rise in the number of deaths among elderly population associated with increasing number of elderly population. Although economy and employment situation in Oregon looked stagnant in the recent past, migration situation was not similar to the early 1980s pattern of negative net migration. Potential Oregon out-migrants had no better place to go since other states were also in the same boat in terms of economy and employment. California is the number one state of origin of migrants to Oregon. As California's housing market improves, we expect positive impact on Oregon's net migration.

Age structure and its change affect employment, state revenue, and expenditure. Demographics are the major budget drivers, which are modified by policy choices on service coverage and delivery. Growth in many age groups will show the effects of the baby-boom and their echo generations during the period of 2015-2022. It will also reflect demographics impacted by the depression era birth cohort combined with diminished migration of the working age population and elderly retirees. After a period of slow growth during the 1990s and early 2000s, the elderly population (65+) has picked up a faster pace of growth and will surge to the record high levels as the baby-boom generation continue to enter this age group. The average annual growth of the elderly population will be 3.8 percent during the forecast period as the boomers continue to enter retirement age. However, the youngest elderly (aged 65-74) has been growing at an extremely fast pace in the recent past and will continue the trend in the near future exceeding 5 percent annual rate of growth due to the direct impact of the baby-boom generation entering the retirement age and smaller pre-baby boom cohort exiting the 65-74 age group. The annual growth rate will taper off to 1.34 percent by the end of the forecast period as a sign of baby-boom generation's transition to elderly age group. Reversing several years of slow growth and shrinking population, the elderly aged 75-84 started to show a positive growth as the effect of depression era birth-cohort has dissipated. An unprecedented fast pace of growth of population in this age group has started as the baby-boom generation starts to mature into 75-84 age group. The oldest elderly (aged 85+) will continue to grow at a slow but steady rate due to the combination of cohort change, continued positive net migration, and improving longevity. The average annual rate of growth for this oldest elderly over the forecast horizon will be 1.0 percent. An unprecedented growth in oldest elderly will commence at the end of the forecast horizon.

As the baby-boom generation matures out of oldest working-age cohort combined with slowing net migration, the once fast-paced growth of population aged 45-64 has gradually tapered off to below zero percent rate of growth by 2012 and will remain at slow or below zero growth phase for several years. The size of this older working-age population will remain virtually unchanged at the beginning to the end of the forecast period. The 25-44 age group population is recovering from several years of declining and slow growing trend. The decline was mainly due to the exiting baby-boom cohort. This age group has seen positive growth starting in the year 2004 and will increase by 1.8 percent annual average rate during the forecast horizon mainly because of the exiting smaller birth (baby-bust) cohort being replaced by baby-boom echo cohort. The young adult population (aged 18-24) will remain nearly unchanged over the forecast period. Although the slow or stagnant growth of college-age population (age 18-24), in general, tend to ease the pressure on public spending on higher education, college enrollment typically goes up during the time of high unemployment and scarcity of well-paying jobs when even the older people flock back to colleges to better position themselves in a tough job market. The growth in K-12 population (aged 5-17) will remain very low which will translate into slow growth in school enrollments. This school-age population has actually declined in size in recent past years and will grow in the future at well below the overall state average. The growth rate for children under the age of five has remained below or near zero percent in the recent past due to the sharp decline in the number of births. This cohort of children will see steady positive growth only after 2015. Although the number of children under the age of five declined in the recent years, the demand for child care services and pre-Kindergarten program will be additionally determined by the labor force participation and poverty rates of the parents. Overall, elderly population over age 65 will increase rapidly whereas population groups under age 65 will experience slow growth in the coming years. Hence, based solely on demographics of Oregon, demand for public services geared towards children and young adults will likely to increase at a slower pace, whereas demand for elderly care and services will increase rapidly.

Procedure and Assumptions

Population forecasts by age and sex are developed using the cohort-component projection procedure. The population by single year of age and sex is projected based on the specific assumptions of vital events and migrations. Oregon's estimated population of July 1, 2010 based on the most recent decennial census is the base for the forecast. To explain the cohort-component projection procedure very briefly, the forecasting model "survives" the initial population distribution by age and sex to the next age-sex category in the following year, and then applies age-sex-specific birth and migration rates to the mid-period population. Further iterations subject the in-and-out migrants to the same mortality and fertility rates.

Populations by age-sex detail for the years 2000 through 2009, called intercensal estimates, in the following tables are developed by OEA based on 2000 and 2010 censuses. Post-censal population totals for the years 2010 through 2015 are from the Population Research Center, Portland State University. The numbers of births and deaths through 2015 are from Oregon's Center for Health Statistics. All other numbers and age-sex detail are generated by OEA.

Annual numbers of births are determined from the age-specific fertility rates projected based on Oregon's past trends and past and projected national trends. Oregon's total fertility rate is assumed to remain below the replacement level of 2.1 children per woman during the forecast period, tracking at slightly lower than the national rate.

Life Table survival rates are developed for the year 2010. Male and female life expectancies for the 2010-202 period are projected based on the past three decades of trends and national projected life expectancies. Gradual improvements in life expectancies are expected over the forecast period. At the same time, the difference between the male and female life expectancies will continue to shrink. The male life expectancy at births of 77.4 and the female life expectancy of 81.8 in 2010 are projected to improve to 79.0 years for males and 83.25 years for females by the year 2022.

Estimates and forecasts of the number of net migrations are based on the residuals from the difference between population change and natural increase (births minus deaths) in a given forecast period. The migration forecasting model uses Oregon's employment, unemployment rates, income/wage data from Oregon and neighboring states, and past trends. Distribution of migrants by age and sex is based on detailed data from the American Community Survey. The annual net migration between 2015 and 2022 is expected to remain in the range of 38,000 to 48,200, averaging 43,600 persons annually. Slowdown in Oregon's economy in the recent years resulted in smaller net migration and slow population growth. Estimated population growth and net migration rates in 2010 and 2011 were the lowest in over two decades. Oregon's population growth has already rebounded and will continue high rate of growth. Migration is intrinsically related to economy and employment situation of the state. Still, high unemployment and job loss in the recent past have impacted net migration and population growth, but not to the extent in the early 1980s. Main reason for this is the fact that other states of potential destination for Oregon out-migrants were not faring any better either. Hence the potential out-migrants had very limited destination choices. The future growth will not look like high growth period of 1990s. The role of net migration in Oregon's population growth will get more prominence as the natural increase will decline considerably due to rapid increase in the number of deaths associated with ageing population.

APPENDIX A: ECONOMIC FORECAST DETAIL