

REVENUE OUTLOOK

Revenue Summary

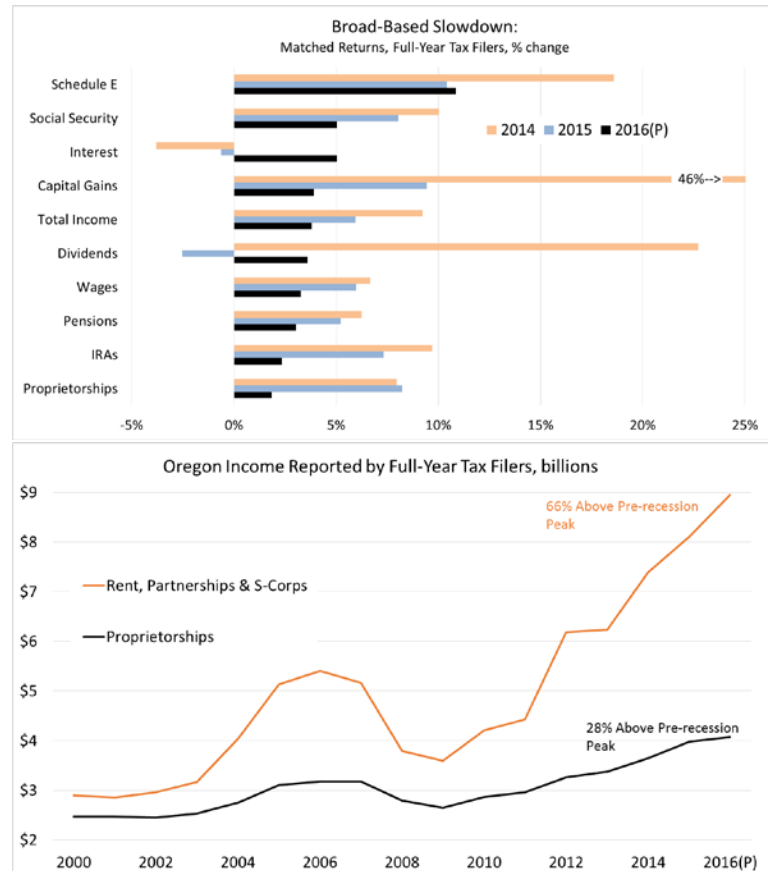
As the peak season for income tax collections winds down, it has become clear that Oregon has enjoyed a good year. Although revenue trends are not as strong as what was seen earlier in the economic expansion, Oregon and its Western neighbors continue to lead the way in terms of revenue growth. A large majority of states are dealing with disappointing revenue growth that has failed to match their budget projections. In Oregon, revenue growth has outstripped expectations, putting our unique kicker law into play.

Although revenue growth is still healthy, the slowing pace of Oregon's expansion has become evident in tax return data just as it is has in the jobs data. Income growth has been cut in half over the past two years, with slowing across a wide range of income types. While still growing for now, business, retirement, investment and labor income have all decelerated rapidly.

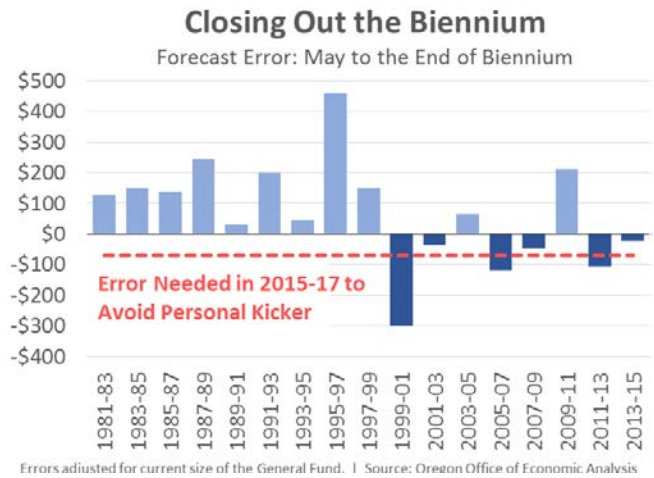
The slowdown in income growth was to be expected now that we are in a mature business cycle, far removed from the early recovery's bounce. In fact, many types of income have outperformed expectations, including many forms of business income. Growth in business income has been surprisingly strong for years. Following yet another healthy year in 2016, the longer-term outlook has become more positive. The expectation of additional business income in the outlook helps to offset some of the revenue losses associated with a potential kicker during the next budget cycle.

With increases in the outlook for personal income taxes, estate taxes and lottery sales, net General Fund resources are up \$370 million relative to the March forecast. Excluding corporate taxes, General Fund revenues are now 2.4% above the 2015 Close of Session estimate. If this holds through the end of the biennium, an income tax kicker of \$408 million would be triggered for tax year 2017.

Although the May outlook calls for a personal income tax kicker, it is not a sure thing. Large swings in the forecast between now and the end of June have been commonplace in past years. In fact, if revenue forecast errors are distributed on a bell curve, the forecast would be expected to decline by more than the \$70 million needed to fall below the kicker threshold in one out of every three years.



Corporate tax collections have stabilized in recent months after falling sharply during most of 2016. Now close to their historical norms, corporate tax collections are expected to remain relatively flat going forward. Nationwide, corporate profits took a step back, largely due to rapid appreciation of the U.S. dollar and struggles among energy firms and other commodity producers. With these downward pressures on profits having now eased, declines in corporate profits and related tax collections should now be over.



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 \$18,482 million. This represents an increase of \$371 million from the March 2017 forecast, and an increase of \$2.4 billion (14.8%) relative to the 2013-15 biennium. General Fund revenues for the 2015-17 biennium are now expected to come in \$484 million above the Close of Session forecast.

Personal Income Tax

Personal income tax collections were \$1,818 million during the third quarter of fiscal year 2017, \$208 million above the latest forecast. Compared to the year-ago level, total personal income tax collections grew by 13.4% relative to a forecast that called for a 0.5% increase. Table B.8 in Appendix B presents a comparison of actual

and projected personal income tax revenues for the January-March 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.

(Millions)	2015 COS Forecast	March 2017 Forecast	May 2017 Forecast	Change from Prior Forecast	Change from COS Forecast
Structural Revenues					
Personal Income Tax	\$15,713.5	\$15,709.8	\$16,020.8	\$311.0	\$307.3
Corporate Income Tax	\$1,100.0	\$1,136.2	\$1,175.7	\$39.5	\$75.7
All Other Revenues	\$1,184.6	\$1,264.6	\$1,285.1	\$20.5	\$100.5
Gross GF Revenues	\$17,998.1	\$18,110.6	\$18,481.6	\$371.0	\$483.6
Offsets and Transfers	-\$42.8	-\$44.4	-\$45.2	-\$0.8	-\$2.4
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	\$18,422.7	\$18,792.9	\$370.2	\$483.8
Confidence Intervals					
67% Confidence	+/- 0.9%		\$173.0	\$18.31B to \$18.65B	
95% Confidence	+/- 1.9%		\$346.0	\$18.14B to \$18.83B	

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

Corporate Excise Tax

Corporate excise tax collections equaled \$103 million for the third quarter of fiscal year 2017, \$6 million above the March forecast. Compared to the year-ago level, net corporate excise tax collections fell by 15.5% relative to a forecast that called for a 21.7% decline.

Following sharp declines through much of 2016, corporate tax collections have returned to their historical norms. In addition to profitability, recent law changes have supported collections, as has a decline in outstanding Business Energy Tax Credits. The baseline outlook calls for corporate collections to stabilize going forward.

Corporate income tax collections for 2015-17 are now expected to end the biennium \$54 billion higher than what was called for in the Close of Session forecast. As a result, a \$75.5 million kicker is projected to be dedicated to K-12 education spending in 2017-19.

Other Sources of Revenue

Estate tax collections continue to surprise on the upside. Fiscal year 2017 will be by far a record year, leading to a \$110 million increase relative to the Close of Session Forecast. Among other revenue items, insurance taxes are running ahead of the Close of Session forecast, and court fines and fees are running behind the forecast.

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		Forecast 2015-17		Forecast 2017-19		Forecast 2019-21		Forecast 2021-23		Forecast 2023-25	
	Biennium	% Chg	Biennium	% Chg	Biennium	% Chg	Biennium	% Chg	Biennium	% Chg	Biennium	% Chg
Personal Income Taxes	13,958.3	15.2%	16,020.8	14.8%	17,146.9	7.0%	19,290.3	12.5%	21,376.7	10.8%	23,312.2	9.1%
Corporate Income Taxes	1,116.5	26.3%	1,175.7	5.3%	1,071.5	-8.9%	1,075.7	0.4%	1,122.2	4.3%	1,170.8	4.3%
All Others	1,030.2	-11.4%	1,285.1	24.8%	1,198.4	-6.7%	1,294.4	8.0%	1,378.4	6.5%	1,463.3	6.2%
Gross General Fund	16,105.0	13.7%	18,481.6	14.8%	19,416.8	5.1%	21,660.4	11.6%	23,877.3	10.2%	25,946.3	8.7%
<i>Offsets and Transfers</i>	<i>(74.5)</i>		<i>(45.2)</i>		<i>(75.5)</i>		<i>(70.6)</i>		<i>(72.3)</i>		<i>(74.1)</i>	
Net Revenue	16,030.5	13.3%	18,436.4	15.0%	19,341.3	4.9%	21,589.8	11.6%	23,805.0	10.3%	25,872.1	8.7%

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 predicted⁸.

TABLE R2b

May 2017

Baseline Case	Alternative Cyclical Revenue Forecast (\$ millions)									
	2015-17 BN		2017-19 BN		2019-21 BN		2021-23 BN		2023-25 BN	
	FY '16	FY '17	FY '18	FY '19	FY '20	FY '21	FY '22	FY '23	FY '24	FY '25
Personal Income										
Level	180.77	188.67	199.30	210.76	222.75	234.29	244.65	257.99	270.53	283.77
% change	5.6%	4.4%	5.6%	5.7%	5.7%	5.2%	4.4%	5.5%	4.9%	4.9%
Taxes										
Personal Income	7,691	8,330	8,227	8,920	9,354	9,936	10,476	10,900	11,388	11,924
Corporate Excise & Income	610	566	533	539	537	539	552	570	580	590
Other General Fund	532	753	590	609	634	660	679	700	720	743
Total General Fund	8,833	9,649	9,349	10,067	10,526	11,134	11,707	12,170	12,688	13,258
% change	4.4%	9.2%	-3.1%	7.7%	4.6%	5.8%	5.1%	4.0%	4.3%	4.5%
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	180.8	188.7	194.4	200.6	214.3	228.1	240.1	255.1	268.2	281.7
% change	5.6%	4.4%	3.1%	3.2%	6.8%	6.4%	5.3%	6.2%	5.1%	5.1%
Taxes										
Personal Income	7,691	8,330	7,946	8,320	8,860	9,566	10,203	10,728	11,237	11,786
<i>Deviation from baseline</i>			-281	-600	-494	-370	-273	-172	-150	-139
Corporate Excise & Income	610	566	507	487	497	510	531	557	570	582
<i>Deviation from baseline</i>			-26	-52	-41	-29	-21	-13	-10	-9
Other General Fund	532	753	590	609	634	660	679	700	720	743
Total General Fund	8,833	9,649	9,043	9,416	9,992	10,736	11,414	11,985	12,528	13,111
% change	4.4%	9.2%	-6.3%	4.1%	6.1%	7.4%	6.3%	5.0%	4.5%	4.7%
<i>Deviation from baseline</i>		0	-307	-652	-534	-399	-293	-185	-160	-147
<i>Biennial Deviation</i>		0		-958		-933		-478		-308
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	180.8	188.7	181.6	190.2	206.1	222.0	236.4	253.7	266.7	280.2
% change	5.6%	4.4%	-3.7%	4.7%	8.3%	7.7%	6.5%	7.3%	5.1%	5.1%
Taxes										
Personal Income	7,691	8,330	7,206	7,704	8,377	9,206	9,980	10,649	11,154	11,699
<i>Deviation from baseline</i>			-1,022	-1,216	-978	-730	-497	-252	-234	-226
Corporate Excise & Income	502	566	438	434	457	482	515	551	564	576
<i>Deviation from baseline</i>			-94	-105	-80	-57	-37	-19	-16	-15
Other General Fund	532	753	590	609	634	660	679	700	720	743
Total General Fund	8,724	9,649	8,233	8,747	9,468	10,348	11,173	11,900	12,439	13,017
% change	4.4%	10.6%	-14.7%	6.2%	8.2%	9.3%	8.0%	6.5%	4.5%	4.7%
<i>Deviation from baseline</i>			-1,116	-1,321	-1,058	-787	-534	-271	-250	-241
<i>Biennial Deviation</i>				-2,437		-1,844		-805		-490

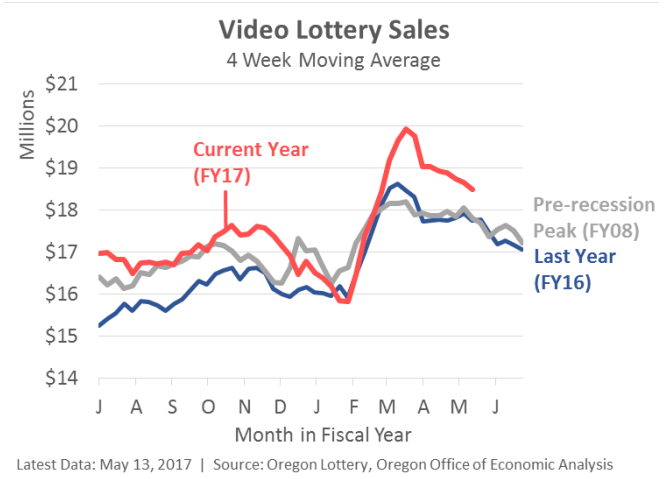
Lottery Earnings

While generally tracking well, lottery sales and proceeds continue to come in ahead of forecast. The current 2015-17 biennium revenues are revised upward by \$3.6 million. The near-term increase is split evenly between traditional lottery and video lottery sales. The outlook over the extended forecast horizon has been raised due to a slightly stronger economic outlook for consumer spending on video lottery and an adjustment for upcoming

⁸ The methodology for computing alternative scenarios has been changed to reflect recent work done by the Legislative Revenue Office. Assumptions: Recessions begin in 2018 and return to baseline income by 2025. The moderate recession scenario assumes personal income growth will be reduced by one-half relative to the baseline in 2018 and 2019. The severe recession scenario assumes personal income will decline in 2018 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.

game changes for Mega Millions. Revenues for the 2017-19 biennium have been raised \$7.2 million (+0.6%) with the outer biennia seeing increases of \$11-19 million (+0.8-1.3%).

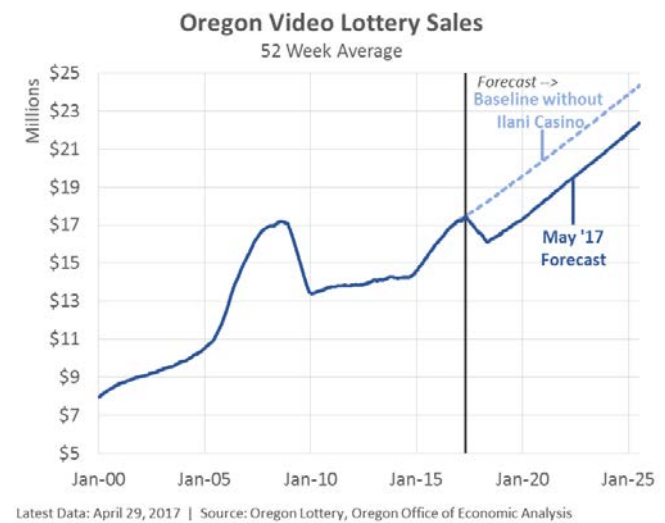
Currently, the biggest issue and risk to the Lottery is the newly opened ilani Casino Resort in southwest Washington. At the time of publication, the casino has been open for just three weeks. As discussed in detail below, our office has built in declines in video lottery sales due to the increased competition in the regional gaming market. However, at least based on these first three weeks, there has been no apparent impact on statewide video lottery sales. Weaknesses and declines seen on Hayden Island are more than offset by stronger sales elsewhere in the state, according to the research team at the Oregon Lottery. Overall, this is a surprising development, at least from our office’s forecast perspective. It is still too soon to tell what the true impact will be from the new tribal casino, and our office is not yet changing the estimate. That said, it does suggest the risks to the outlook for video lottery sales are clearly tilted toward the upside.



Cowlitz Tribe’s ilani Casino Resort Impact

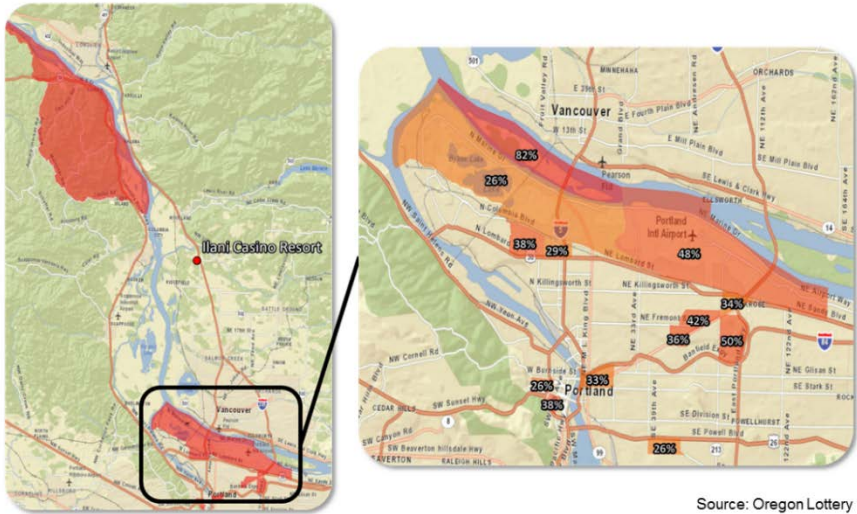
Once the casino cleared the various legal challenges and actual construction began, our office started incorporating an estimate of the casino’s impact. As of this forecast, our office’s estimate is for a loss of around \$110 million per year in video lottery sales, or a nearly \$72 million per year reduction in transfers. This represents the same impact that was assumed in each of the past two quarterly forecasts.

Earlier estimates from our office ranged between \$100 million and \$120 million per year in sales. The smaller 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. It was a top-down approach which estimated what market share the new casino would take.



The larger estimate was based on a bottom-up approach that examined individual retailer and neighborhood/zip code video lottery sales. More than half of Oregon’s statewide video lottery sales occur within the Portland metro area. 11 percent of statewide sales occur within just the northern swath of the City of Portland, from the St. Johns neighborhood through the Parkrose neighborhood. Anecdotal evidence plus statistical analysis indicated that the border effect with the State of Washington, which does not have video lottery in its bars and restaurants, was large. This is particularly true directly across the two interstate bridges in Portland. However such trends are also seen in the population centers along Oregon’s borders with California and Idaho too.

A few months ago the Oregon Lottery research team analyzed video lottery jackpot winner records. As seen in the nearby maps, the share of such winners in neighborhoods (Census tracts) along the Oregon-Washington border are quite large. There is substantial cross-border activity. However, the share of Washingtonian winners in neighborhoods not along the border is considerably smaller, as is to be expected. Given the results of this new research, our office moved the casino impact to the middle of the range established via the top-down and bottom-up approaches.

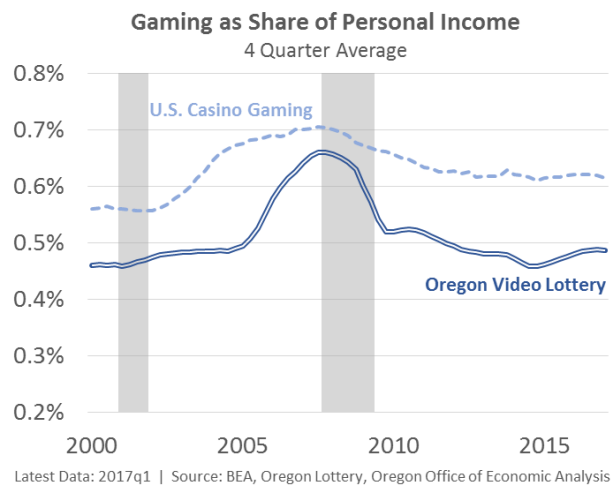


A few weeks of sales reports do not make a trend, at least not yet. It makes some sense that the impact of increased competition may not materialize immediately in sales reports, however time will tell. As always, our office, along with the Oregon Lottery will continue to monitor the data and work on refining the estimates in the coming forecasts.

Lottery Outlook

The robust gains seen in video lottery sales following the first wave of terminal replacements are slowing. This is to be expected. The second wave of replacements are nearing completion today, however their impact on sales is less, even as the upgrade in new technology and underlying infrastructure is important.

While video lottery sales remain strong, expectations are for a continued deceleration in growth culminating in year-over-year declines as the casino impact is felt. To date, video lottery growth has already slowed from around 10 percent year-over-year to 5 percent prior to the snow and ice storms over the winter. Currently sales are running +2% year-over-year. As the casino impacts video sales, they are expected to fall nearly 9 percent before resuming growth due to the underlying improvements in the economy and increases in consumer spending.



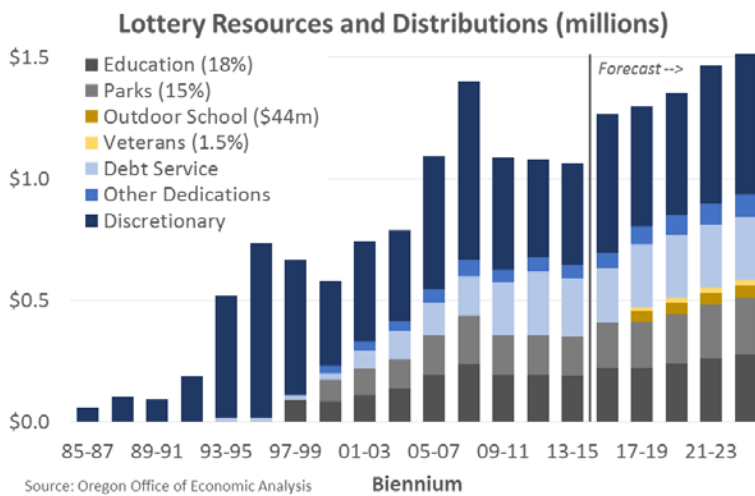
Other issues to watch include broader and national trends in gaming markets, demographic preferences for recreational activities, and to what extent consumers increase the share of their incomes spent on gaming. In much of the past 6 years, consumers have remained cautious with their disposable income.

The current outlook does leave room for both upside and downside risks. The ilani Casino Resort 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.

Lastly, Oregon voters last year approved two new constitutional amendments for where lottery resources are to be spent. The Outdoor School Education Fund is set to receive the lesser of 4 percent of net proceeds or \$5.5 million per quarter (\$44 million per biennium) and adjusted for inflation moving forward. The Veterans’ Services Fund is set to receive 1.5 percent of net proceeds.

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 Fund⁹ (ORDF) and the Education Stability Fund¹⁰ (ESF). This section updates balances and recalculates the outlook for these funds based on the May revenue forecast.

As of this forecast, the two reserve funds currently total a combined \$732.3 million. Additionally there is a projected General Fund ending balance for this biennium of \$723.9 million, bringing effective reserves to \$1,456.2 million, or about 8 percent of current biennium’s revenue. That General Fund ending balance does include the projected personal income kicker. Absent that, total effective reserves today total \$1,048.4 million, or about 6 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, \$11.7 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 \$388.8 million.

⁹ 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.

¹⁰ 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.

The forecast calls for \$204.4 million in deposits into the ESF in 2015-17 based on the current Lottery forecast. This would bring the ESF balance to \$383.8 million at the end of the current biennium.

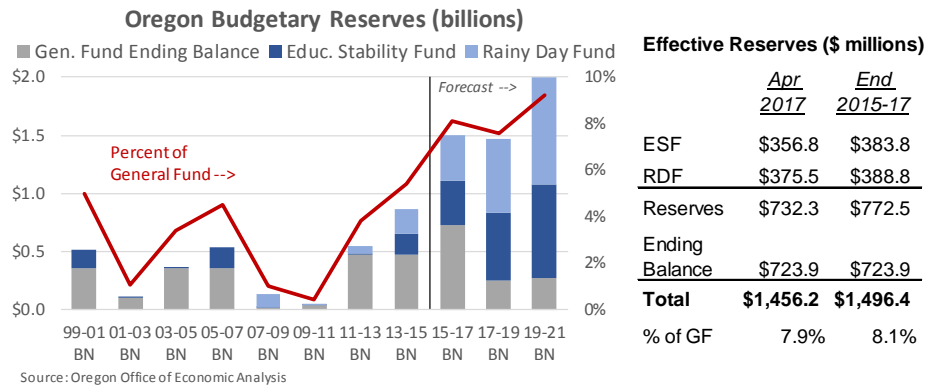
Together, the ORDF and ESF are projected to have a combined balance of \$772.5 million at the close of the 2015-17 biennium. Provided the General Fund ending balance remains unallocated, total effective reserves at the end of 2015-17 would nearly \$1.5 billion, or nearly 8 percent of current revenues.

Such levels of reserve balances are bigger than Oregon has ever been able to accumulate, at least in the state's recent history. However, if you exclude the projected kicker that will be paid out next biennium, the net reserves are still insufficient 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 size¹¹.

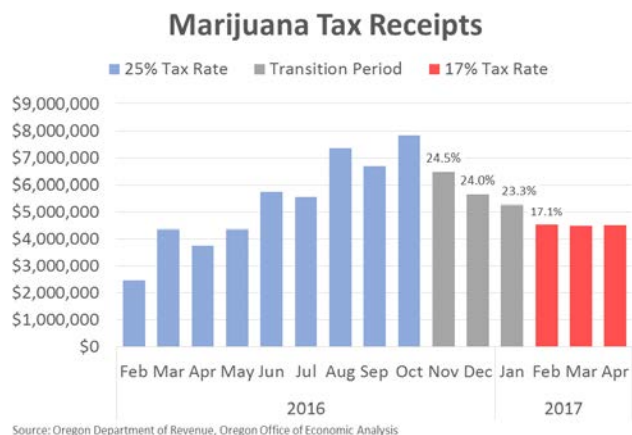
B.10 in Appendix B provides more details for Oregon's budgetary reserves.



Recreational Marijuana Tax Collections

This quarterly forecast marks the first time our office has produced a recreational marijuana outlook for the state. Senate Bill 845 (2017), recently passed out of committee, would give our office the responsibility on a permanent basis. In developing the outlook, our office held a preliminary forecast meeting with stakeholders from state agencies and invited input from local governments and industry professionals. Additionally, our office spoke with our counterparts in both Colorado and Washington to better understand their experiences and views. Moving forward, our office will continue to work with stakeholders and those who can advise us on industry and consumer trends, regulatory impacts, issues to watch, and the like.

Currently the outlook for recreational marijuana sales and tax collections remains highly uncertain. While Oregon has now collected just over a year's worth of taxes, there have been substantial changes during this time that complicate any analysis. Early start sales through medical dispensaries were taxed at a 25 percent of rate, while sales at OLCC licensed retailers are now taxed at a 17 percent rate, with the local option of adding up to 3 additional percent. Furthermore, regulatory changes, more stringent product testing requirements, and Mother Nature all impacted and reduced available supply on the market during this time.



¹¹ Based on a one standard deviation change in revenues. Larger reserves needed to insure against a more severe recession.

Combined, it is challenging to get a handle on the underlying trends in this newly legalized world. Thankfully, Oregon is not alone. Both Colorado and Washington are two years ahead of Oregon. Both states have seen tremendous growth in sales and tax collections, which serves as a guide for where Oregon is likely headed in the near-term. Over time, as the market matures, future growth will follow trends in the economy and consumer spending. However the coming few years will see strong growth as the product becomes more widely available, more socially acceptable, and more black and gray market sales are realized in the legal market.

One year's worth of tax collections, and one set of quarterly tax returns filed by dispensaries is certainly more valuable than no data. Our office's forecasting responsibilities are made considerably easier than what faced those estimating the potential impact of Measure 91 (2014) which legalized recreational sales. That said, one year's worth of data is not enough to build a full-fledged forecasting model, particularly when it is a brand new legal market. Over time, as we accumulate more data, a longer history of sales, and detailed breakdowns of consumer purchases and consumer demographics, our office will build an econometric model. Until then, in consultation with our advisory group, and using Colorado and Washington as a guide, our office is relying on trends for the short-term outlook.

So far, Oregon's first year of recreational sales closely tracks Colorado's first year and outpaces Washington's, after controlling for the fact both states have larger populations than Oregon. There are at least four main reasons for this pattern.

First, marijuana usage rates from surveys indicate a larger share of Oregonians have used marijuana in the past month than what is reported in Washington. As such, Oregon is more likely to see larger sales than Washington, when adjusting for population size. However, usage is not the only measure that matters, as Colorado's usage rates are even higher than Oregon's.

Second, prices and taxes matter. Oregon has a significantly lower tax rate than does Washington, which helps keep final consumer prices lower. Furthermore, the first set of quarterly tax returns, a very limited data set, indicates that Oregon prices were very competitive with Washington prices, even though Washington had two additional years to get accustomed to the newly legal market, license growers, processors and the like. A lower retail price, everything else equal, should bring more consumers and more black market conversions.

Third, the cross-border effect with legal sales beginning earlier in Washington likely had an impact on Oregon's first year of sales. Counties in southwest Washington saw sales fall by nearly 40 percent once Oregon's early sales began. Clearly there was plenty of cross-border activity. Effectively this meant Oregon had somewhat of a built-in customer base who were used to purchasing in the legal market. Thus Oregon's initial sales were larger than in Washington, but this may have some to do with social acceptance and being used to the new system rather than fundamentally stronger sales.

Fourth, both Colorado and Washington initially had relatively few retail outlets in major population centers. In Colorado, Denver had retailers but Boulder did not initially. In Washington, Seattle had only a few retailers at first, but have added quite a few in recent years. As such, some of each state's strong growth in the first two years was simply due to market access and product availability, particularly in places where lots of people live. It is unlikely this is a similar issue in Oregon, with our major population centers having dispensaries at first, and retailers now. Not that Oregon is overstored, or that there cannot be more room for growth – Colorado, for example, has considerably more retailers even after adjusting for their larger population – however lack of consumer access does not appear to be a major issue in Oregon today for much of the population.

In terms of the outlook, Oregon is poised for strong growth in the coming years. However, given the above and the advice from our advisory group, our office is not forecasting revenues to be quite as strong as those seen in Colorado over their second and third years. This outlook remains highly uncertain with substantial upside and downside risks.

On the downside, supply constraints that keep products and inventory low will result in fewer sales, and tax collections. Such constraints could be regulatory changes that

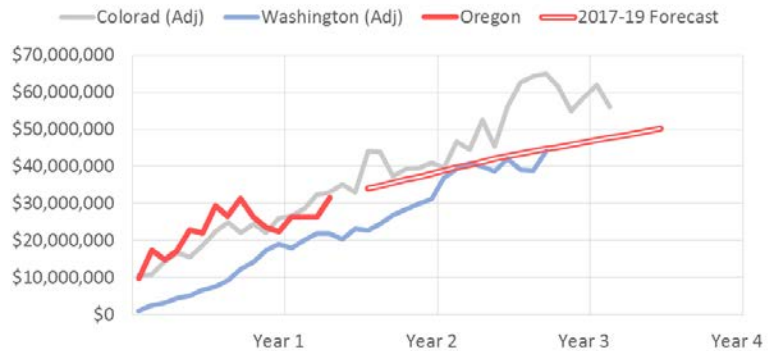
impact grower, processors or retailers, or regulatory bottlenecks where companies in the industry are unable to get their licenses, renewals or tests completed or approved in a timely manner. Another downside risk for tax collections are prices, given Oregon levies the tax based on the sales price. To date in Colorado and Washington, prices have fallen around 20 percent per year. Marijuana is a commodity and eventually will be commoditized. How far and how quickly prices decline is a considerable risk to the outlook for tax collections. Offsetting this risk somewhat is the fact that lower prices should result in larger sales, helping to buoy tax collections overall, which is what has happened in both Colorado and Washington so far. Finally, the one risk that looms large over the entire forecast is the federal government. While there has been no clear warning or action taken, there is a non-zero chance the federal government could step in and eliminate, or severely restrict recreational marijuana sales. In this event, taxes collected would be considerably less than forecasted.

On the upside, consumers overall could get more comfortable with legalized recreational marijuana sales, and the industry gains broader social acceptance, resulting in larger sales. Furthermore, a faster rate of black market conversion would also result in more legal sales. Similarly, conversions from the medical marijuana market to the recreational market would result in more sales and taxes collections. The impact of the seed-to-sale tracking system may also increase activity within the legal market, resulting in fewer black or grey market sales.

While the sales and tax collection outlook is uncertain, it is also fairly straightforward. The same cannot be said for distributing the taxes, or at least not yet. Currently there have been no distributions from the collected recreational marijuana taxes and there are likely to be none in the current biennium. Start-up costs to OLCC and other state programs need to be repaid first, with only the net revenues after accounting for these costs available for transfer to recipient programs like schools, state police, city and county law enforcement and the like. The exact reimbursement figures will be finalized in the coming months, with the first tax distributions made early in the 2017-19 biennium.

Recreational Marijuana Sales Base

Estimates, Based on Tax Receipts



(Adj) data accounts for the relative size difference between CO, WA, and OR's adult population. Source: CO Dept of Revenue, OR Dept of Revenue, WA Econ & Rev Forecast Council, Oregon Office of Economic Analysis

Summary of Marijuana Resources

	2015-17	2017-19
(in millions of dollars)	Current Forecast	Current Forecast
MARIJUANA EARNINGS		
+ Tax Revenue	67.278	156.696
- Administrative Costs	7.226	6.481
Net Available to Transfer	60.052	150.216
OREGON MARIJUANA ACCOUNT		
Beginning Balance	0.000	60.052
Revenue Transfers	60.052	150.216
Total Available Resources	60.052	210.268
ALLOCATION OF RESOURCES		
Common School Fund (40%)	0.000	84.107
OHA Mental Health (20%)	0.000	42.054
State Police (15%)	0.000	31.540
Cities (10%)	0.000	21.027
Counties (10%)	0.000	21.027
OHA Drug Abuse (5%)	0.000	10.513
Total Distributions³	0.000	210.268
Ending Balance	60.052	0.000

The process and timing for future tax distributions is as follows. First, retailers pay taxes on a monthly basis. However these taxes are not immediately available for distribution. They only become available for recipient programs once the Department of Revenue has received and processed a retailer's quarterly tax return. This ensures transfers are made based on the correct, not estimated, taxes paid by retailers. As such there is a time lag of between one and two quarters from when taxes are initially paid to the Department of Revenue and when they are available to transfer to programs. This discrepancy is likely to shorten some in the future as retailers file their taxes in a timelier manner, however the time lag will not be eliminated entirely.

See Table B.11 in Appendix B for a full breakdown of distributions for recreational marijuana tax collections. Note that these distributions are based on current law. The same SB 845 (2017) that gives our office the forecasting responsibilities, also changes the distribution formulas some. As new legislation is passed, future forecasts will be adjusted accordingly.

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, including D.C., in population growth rate was 12th between 2010 and 2016 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 current population is showing very strong growth as a consequence of state's strong economic recovery. Population growth between 2015 and 2016 was 6th fastest in the nation. Based on the current forecast, Oregon's population will reach 4.59 million in the year 2026 with an annual rate of growth of 1.2 percent between 2016 and 2026.

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 76 percent of the population change during the booming economy of early 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 for several years. 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 continued high 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. With improvement in California's housing market and Oregon's growing economy continues, 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 2016-2026. It will also reflect demographics impacted by the depression era birth cohort combined with diminished migration of 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 and attrition of small depression era cohort due to death. The average annual growth of the elderly population will be 3.5 percent during the 2016-2026 forecast

period. 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 below one 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. Annual growth rate during the forecast period is expected to be unusually high 5.6 percent. 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 2.1 percent. An unprecedented growth in oldest elderly will commence near 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 1.6 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 very competitive job market, 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 after 2016. 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 83.2 years for females by the year 2026.

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 2016 and 2026 is expected to remain in the range of 38,700 to 50,600, averaging 42,800 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 in the near future. 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.