Revenue Summary

Ten years into the economic expansion, growth has slowed across many economic indicators. The same cannot be said for Oregon’s primary sources of tax revenue, which continue to outstrip the performance of the underlying economy.

The primary forecasting challenge for the current biennium is to determine what portion of the recently strong tax collections is due to temporary factors that will fade away or reverse themselves in the months ahead. Even without the onset of recession, revenue growth is facing major headwinds during the current biennium. State and federal tax policies, a big kicker refund and slower economic growth will all weigh on General Fund revenues in the near term.

The longer the revenue boom persists, the more likely it becomes that permanent factors are playing a significant role in boosting tax collections. As such, revenue estimates for the current biennium have been steadily revised upward over the past two years. Estimate of personal and corporate income taxes, lottery earnings, and estate taxes are all up sharply from the Close of Session forecast.

Even so, given that job gains and population growth have both taken a step back, some moderation in state revenue growth is likely going forward. It is also likely that the unprecedented surge in collections that occurred during the last tax filing season was due in part to taxpayers shifting their payments response to federal tax law changes, and other temporary factors.

Together with tax law changes at both the state and federal levels, the uncertain economic outlook is currently injecting a considerable amount of risk into the revenue forecast. Both April tax filing seasons are yet to come in the biennium, leading to a wide range of possible outcomes. Despite this uncertainty, the March forecast reflects a relatively stable outlook, with the expected size of General Fund collections increasing by just over one percentage point.

Fortunately, Oregon is better positioned than ever before to weather a revenue downturn. Automatic deposits into the Rainy Day Fund and Education Stability Fund have added up over the decade-long economic expansion. When the projected ending balance for the current biennium is included, Oregon is expected to end the biennium with nearly $3 billion in reserves set aside, amounting to almost 14% of the two-year budget.

Longer term, 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.
2019-21 General Fund Revenues

Gross General Fund revenues for the 2019-21 biennium are expected to reach $21,458 million. This represents an increase of $289 million from the December 2019 forecast, and an increase of $438 million relative to the Close of Session forecast. Just under half of this increase can be traced to a stronger outlook for personal income tax collections, with additional corporate income taxes and estate taxes accounting for most of the remainder.

Personal Income Tax

Personal income tax collections were $2,425 million during the second quarter of fiscal year 2020, $36 million (1.5%) above the latest forecast. Compared to the year-ago level, total personal income tax collections rose by 13.1% relative to a forecast that called for an 11.4% increase. Table B.8 in Appendix B presents a comparison of actual and projected personal income tax revenues for the October-December quarter. Strong growth in collections has continued into the third quarter of fiscal year 2020.

Personal income tax collections during the 2019-21 biennium will be constrained by many factors, including a large kicker credit to be paid out this tax season. State tax reforms enacted during the 2019 session will also put downward pressure on personal income tax collections.

While the forecast continues to call for modest gains in personal income tax collections, growth rates have been revised upward relative to the December outlook. Persistently large withholding payments are the primary reason for the change.

For several years, withholdings of personal income tax collections have grown significantly faster than have both the amount of wages reported on tax returns as well as measures of wages drawn from economic accounts. In the past, personal income tax withholdings have always grown in lockstep with other wage measures aside from brief periods when withholding tables were changed or when Oregon’s businesses paid out large bonuses to their workers. Growth in personal income tax withholdings has been broad-based, and cannot be traced to any particular industry.

One potential factor behind the strong personal income tax withholdings could be an increase in retirement income. Although direct data on retirement withholdings is not available over time, taxpayers have been...
cashing in an increasing amount of IRAs and reporting more pension income in recent years. Both of these income streams are often subject to withholding.

Going forward, retirement income streams will account for a much larger share of overall income in Oregon as many in the baby boom population cohort leave the workforce. While this shift will lead to a lower average tax rate, it will likely support stronger withholdings for several years. In keeping with increased retirement income and other nonwage sources of household income, the outlook for withholdings has been revised upward, leading to more expected personal income tax revenue across the forecast horizon.

**Corporate Excise Tax**

Corporate excise tax collections equaled $144 million for the second quarter of fiscal year 2020, $39 million (21%) below the December forecast. Compared to the year-ago level, net corporate excise tax collections fell by 22% while the forecast called for a decline of only 1%. Despite this decline, corporate tax collections remain elevated well above their historical average.

While corporate tax collections are notoriously volatile, federal tax law changes have injected a good deal of uncertainty into the outlook for corporate tax payments. It is likely that the corporate tax base has become larger in Oregon. In part, firms are now recognizing more of their global income streams. Also, some employees, investors, partnerships, S-corps and sole proprietorships face a larger tax incentive to incorporate. The City of Portland and Multnomah County have both reported a surge in corporate revenues in recent months. Conversely, some C-corporations and employees will benefit from becoming pass-through entities. Accelerated depreciation provisions are also impacting the revenue stream, as is the repatriation of deferred income from multinational corporations. Given recent return data, estimates of repatriated taxable corporate income have been revised upward in the current outlook.

**Other Sources of Revenue**

Non-personal and non-corporate revenues in the General Fund account for approximately 7 percent of the total. One-fifth of this amount comes from Oregon Liquor Control Commission revenues, while estate taxes account for another fifth. In terms of forecast changes in recent biennia, estate taxes stand out as they have come in considerably above expectations. The 2019-21 biennium is no exception.

Overall the number of estates impacted by the tax is relatively steady over the past decade, both in absolute numbers and as a share of all Oregon deaths. The growth in tax collections largely reflects the increasing size of a few very large estates. Looking forward, the outlook for collections remains strong, however not quite as strong as demographics and asset markets alone suggest due to household’s tax planning capabilities.

All told, General Fund revenues excluding personal and corporate taxes are expected to total $1.67 billion in 2019-21. This represents a huge upward revision of $115 million relative to the previous forecast, or +7.4 percent.
Much of this increase comes from a stronger outlook for estate taxes, which have been raised $87 million relative to last quarter. In early 2020 there have been a handful of very large estate tax payments. Monthly collections are twice as large as the previous historical record. Overall, fiscal year 2020 is expected to be 30% larger than any previous year.

Should the forecast hold, one impact of the strong estate tax collections in 2019-21 is that an expected $17.6 million will be transferred next biennium to help pay down the Oregon Public Employee Retirement System Unfunded Accrued Liability (PERS UAL). The reason is that estate tax collections this biennium are expected to be stronger than the trend growth over the previous five biennia which is the trigger for this transfer, per SB 1566 (2018).

In 2019-21, General Fund revenues excluding personal and corporate taxes are also revised higher due to stronger interest earnings ($12m) and a one-time solar-related restitution payment ($13m).

Over the extended forecast horizon, General Fund revenues excluding personal and corporate taxes are revised higher by around one percent, due to a slightly stronger estate tax forecast going forward.

**Extended General Fund Outlook**

Table R.2 exhibits the long-run forecast for General Fund revenues through the 2027-29 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>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Biennium</td>
<td>Chg</td>
<td>Biennium</td>
<td>Chg</td>
<td>Biennium</td>
<td>Chg</td>
</tr>
<tr>
<td>Personal Income Taxes</td>
<td>18,823.3</td>
<td>17.2%</td>
<td>18,472.6</td>
<td>-1.9%</td>
<td>21,746.5</td>
<td>17.7%</td>
</tr>
<tr>
<td>Corporate Income Taxes</td>
<td>1,752.7</td>
<td>44.8%</td>
<td>1,312.7</td>
<td>-25.1%</td>
<td>1,316.3</td>
<td>0.3%</td>
</tr>
<tr>
<td>All Others</td>
<td>1,339.3</td>
<td>3.9%</td>
<td>1,672.7</td>
<td>24.9%</td>
<td>1,420.2</td>
<td>####</td>
</tr>
<tr>
<td>Gross General Fund</td>
<td>21,915.3</td>
<td>18.1%</td>
<td>21,457.9</td>
<td>-2.1%</td>
<td>24,483.0</td>
<td>14.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Offsets and Transfers</th>
<th>(129.5)</th>
<th>(254.3)</th>
<th>(132.7)</th>
<th>(118.1)</th>
<th>(82.6)</th>
<th>(85.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Revenue</td>
<td>21,785.8</td>
<td>17.6%</td>
<td>21,203.6</td>
<td>-2.7%</td>
<td>24,350.3</td>
<td>14.8%</td>
</tr>
</tbody>
</table>

**Tax Law Assumptions**

The revenue forecast is based on existing law, including measures and actions signed into law during the 2019 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 2019 Legislative Session can be found in Appendix B Table B.3. For a detailed treatment of the components of the 2019 Legislatively Enacted Budget, see: LFO 2019-21 Budget Summary.

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 2019-21 Tax Expenditure Report together with more timely updates produced by the Legislative Revenue Office.

General Fund 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 $4.8 billion lower than predicted over the next two biennia.

Corporate Activity Tax

HB 3427 (2019) created a new state revenue source by implementing a corporate activity tax (CAT) that went into effect January 2020. The tax is expected to generate $1.6 billion in revenue in 2019-21 and $2.8 billion in 2021-23. These revenues are dedicated to spending on education. The legislation also included personal income tax provisions: Recessions begin in 2019 and return to baseline income by 2026. The moderate recession scenario assumes personal income growth will be reduced by one-half relative to the baseline in 2019 and 2020. The severe recession scenario assumes personal income will decline in 2019 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.

---

25
tax rate reductions, reducing General Fund revenues. The net impact of HB 3427 was designed to generate approximately $1 billion per year in new state resources, or $2 billion per biennium.

In terms of the big picture economic impacts, as always, our office starts with the Legislative Revenue Office’s (LRO) impact statement and any Oregon Tax Incidence Model (OTIM) results LRO found. At the top line, OTIM results find minimal macroeconomic impacts across Oregon due to the new tax. Personal income, employment, population, investment and the like are less than one-tenth of a percent different under the new tax relative to the baseline. The model results also show that price levels (inflation) will increase above the baseline as some of the CAT is pushed forward onto consumers. Of course these top line, statewide numbers mask the varying experiences that individual firms and different industries will experience. There are likely to be some businesses or sectors that experience large impacts from the CAT, or where pyramiding increases prices to a larger degree, while other businesses or sectors see relatively few impacts.

Today there exists no real economic or revenue data to evaluate either the revenue estimates or the economic impact. Businesses will make quarterly payments throughout 2020, however it really will not be until after the April 2021 annual tax returns are processed that we will have a complete look at the revenue, taxpayer behavior or the like. As data does become available, our office, in conjunction with our advisors and LRO will work together to better understand the revenue and its impact. Our office will update the outlook accordingly at that time. Until then, the forecast adopts the initial LRO revenue impact statement estimates as the best available.

Table B.12 in Appendix B has details on 10 year forecast and the allocation of resources, while the personal income tax reductions are built into the General Fund forecasts shown in Tables B.1 and B.2.

**Lottery Earnings**

Overall the lottery outlook is raised modestly relative to last quarter. Available resources in the current 2019-21 biennium are revised $9.7 million higher (0.7%). One quarter of this change is due to stronger than expected sales in recent months while three quarters is due to a stronger outlook.

Video lottery sales growth is slowing some, tapering to around 4 percent year-over-year in recent weeks. While in-line with the general nature of previous outlooks, this growth remains above expectations. Moving forward, the outlook calls for some further slowing in video sales, down to around 3 percent year-over-year. When combined with a stronger economic forecast, the overall lottery outlook is raised both in the near-term and long-run.

Available lottery resources in the 2021-23 biennium are revised upward by $11.5 million (+0.7%) while the 2023-25 is revised higher by $14.2 million (+0.8). The out-biennia are up a larger amount, around $45 million or 2.5%. Previous forecasts had video lottery sales growth slowing considerably in the out-years. The current forecast has video lottery growth slowing some, but keeping closer to overall gains in personal income.

No adjustments were made to the outlook for sports betting as the game has only been available for a few months. To date, gaming revenues are a little below but profit margins slightly higher than initial expectations. It is too soon to know how accurate the first year projections are overall, particularly for a brand new legal market.
that is continuing to develop. In 2019-21, Scoreboard (sports betting) is projected to generate $8.3 million in available resources, which are dedicated to the PERS Employer Incentive Fund per SB 1049 (2019).

Longer term, sports betting is forecasted to generate $29.4 million in 2021-23 and $42.2 million 2023-25 for the Employer Incentive Fund. These estimates are highly uncertain and come from myriad assumptions about the size of the sports betting market overall, industry competition, player adoption rates, administrative costs and the like. The research team at Lottery provided the underlying estimates of the handle, gross gaming revenue and expenses. Our office worked to extend the analysis over the full forecast horizon and to translate the gaming revenue estimates into available resources.

We also know that additional uncertainty arises from the volatility of revenues as wagers come in heavy on one team or another. For this reason, the forecast also assumes that Lottery will build reserves out of the sports betting revenue to help account for the expected volatility.

These figures have been discussed among the Lottery forecast advisory group and represent just a first step in incorporating sports betting revenue into the outlook. As actual sales data comes in, our office, along with the Oregon Lottery, Oregon Legislative Fiscal and Revenue Offices, and the state CFO’s office will discuss trends, issues and risks. We will update the outlook accordingly.

Lottery Outlook and Distributions

Big picture issues to watch include broader 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 decade, consumers have remained cautious with their disposable income. Increases in spending on gaming have largely matched income growth.

Over the long-run our office expects increased competition for household entertainment dollars, increased competition within the gaming industry, and potentially shifts in generational preferences and tastes when it comes to gaming. As such, our outlook for video lottery sales is continued growth, however at a rate that is slightly slower than overall personal income growth. Lottery sales will continue to increase as Oregon’s population and economy grows, however video lottery sales will likely be a slightly smaller slice of the overall pie.

Finally, in recent years Oregon voters approved two new 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), adjusted for inflation. The Veterans’ Services Fund is set to receive 1.5 percent of net proceeds.
For more on the Lottery and overall gaming outlook, see our office’s report\textsuperscript{13}.

*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\textsuperscript{14} (ORDF) and the Education Stability Fund\textsuperscript{15} (ESF). This section updates balances and recalculates the outlook for these funds based on the March revenue forecast.

As of this forecast the two reserve funds currently total a combined $1.35 billion. At the end of the current 2019-21 biennium, they will total $1.82 billion.

The forecast for the ORDF includes two deposits for this biennium relating to the General Fund ending balance from the previous biennium (2017-19). A deposit of $198.3 million is expected in 2020 after the accountants close the books. Additionally a $64.0 million deposit relating to the increased corporate taxes from Measure 67 is expected at the end of the biennium. All told, at the end of 2019-21 the ORDF will total $962.8 million.

The forecast for the ESF calls for $240.6 million in deposits during the 2019-21 biennium based on the current Lottery forecast. This would bring the ESF balance to $860.3 million at the end of the current biennium. The ESF is forecasted to reach its cap of 5% of the previous biennium’s General Fund revenues at the end of FY2022. Once the cap it reached, transfers accrue to the Capital Matching Account.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
 & January 2020 & End 2019-21 \\
\hline
ESF & $678.8 & $860.3 \\
RDF & $675.1 & $962.8 \\
Reserves & $1,353.9 & $1,823.1 \\
Ending Balance & $1,153.8 & $1,153.8 \\
Total & $2,507.6 & $2,976.8 \\
\% of GF & 11.7 & 13.9 \\
\hline
\end{tabular}
\caption{Effective Reserves ($ millions)}
\end{table}

The forecast for the ORDF includes two deposits for this biennium relating to the General Fund ending balance from the previous biennium (2017-19). A deposit of $198.3 million is expected in 2020 after the accountants close the books. Additionally a $64.0 million deposit relating to the increased corporate taxes from Measure 67 is expected at the end of the biennium. All told, at the end of 2019-21 the ORDF will total $962.8 million.

The forecast for the ESF calls for $240.6 million in deposits during the 2019-21 biennium based on the current Lottery forecast. This would bring the ESF balance to $860.3 million at the end of the current biennium. The ESF is forecasted to reach its cap of 5% of the previous biennium’s General Fund revenues at the end of FY2022. Once the cap it reached, transfers accrue to the Capital Matching Account.

---

\textsuperscript{13} \url{https://oregoneconomicanalysis.com/2019/02/13/lottery-and-gaming-outlook-2019/}

\textsuperscript{14} 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.

\textsuperscript{15} 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 – 10% 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.
Together, the ORDF and ESF are projected to have a combined balance of $1.82 billion at the close of the 2019-21 biennium. Provided the General Fund ending balance remains unallocated, total effective reserves at the end of 2019-21 would total nearly $3 billion, or 13.9 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. Such reserves would likely be just sufficient enough to withstand a typical recession’s impact on state revenues, but not likely enough to account for the increase in public services and programs during downturns. That said, reserves of approximately 7 percent are generally accepted to withstand a medium sized recession. Oregon now has reached that threshold.

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

**Recreational Marijuana Tax Collections**

The underlying outlook for recreational marijuana sales and tax collections remains intact and largely unchanged. Tax collections in recent months have largely tracked expectations, although a few million to the high side, resulting in a minor upward revision to 2019-21 available resources. No other changes have been made to the underlying sales forecast.

That said, issues and risks abound. As discussed further in the December 2019 forecast, a potential vaping ban would impact the sales forecast while the timing of transfers to programs is impacted by quickly and accurately firms file their tax returns and they are processed by the Oregon Department of Revenue.

Prices are an issue that could have long-run impacts. As our office has discussed every quarter since we began developing the recreational marijuana forecast, prices are a big risk to the outlook. Oregon levies its recreational marijuana tax based on the price of the product. As such if prices fall, then the state receives less tax revenue for every ounce sold, or every edible purchased. Over the past couple of years this is exactly what has happened. Total state tax collections leveled off throughout 2018 and into early 2019, however the relatively stagnant topline masked big price declines and increases in quantities sold.

However, in the past year prices have risen, leading to higher tax collections but slower gains in the volume of products sold. This is certainly the case for usable marijuana where wholesale prices are up around 50 percent and retail prices more like 25 percent since the summer.

This rebound in prices is likely the bounce back following the large supply glut in recent years. As that inventory is sold or converted to other forms like concentrates, extracts, edibles and the like, prices are rising as the

---

16 [https://digital.osl.state.or.us/islandora/object/osl%3A939177](https://digital.osl.state.or.us/islandora/object/osl%3A939177)
market works to find a better equilibrium between consumer demand and industry supply. A recent report by the Oregon Liquor Control Commission finds that inventory levels remain high for concentrates and extracts indicating that the backlog was likely converted into these forms, which have a longer shelf life.

Looking forward, Oregon is posed for strong growth in the coming years as the state’s population, household incomes, and marijuana usage rates all increase.

The latest survey of drug usage across the country shows that Oregon remains the state with the highest report usage of marijuana among adults in the past year, and number two behind Vermont for reported usage among adults in the most month. The 2018 survey results are essentially unchanged from 2017. Whether this is simply noise in the year-to-year changes or is indicative that the market may flatten out as social acceptance and usage rates top out is still yet to be determined. Besides the overall usage rate, black and medical market conversions should boost recreational sales and tax collections as well in the years ahead.

One other source of recreational sales and tax collections comes from nonresidents. Oregon sales in counties along the borders with Idaho and Washington are above average and larger than can be explained by local socio-economic conditions, things like population, incomes and the like. Much of these higher level of sales per capita are likely due to the so-called border effect, a well-researched topic and issue that arise when neighboring jurisdictions have different laws and taxes for the same industry or product. See our office’s recent report¹⁷ for more on the marijuana border effects in the Pacific Northwest.

All told, the outlook remains highly uncertain with substantial upside and downside risks. These risks include not only usage rates and prices, but shifts in supply and regulations that impact product availability. Additionally potential actions by the federal government remains a large risk as marijuana is a controlled substance and leakage into other states a large concern. Furthermore, the federal legalization of hemp introduces yet another risk to the outlook. To the extent that consumers choose to purchase CBD products, which have many of the same purported medical benefits as cannabis but without the psychoactive component, then these widely available products may gain market share at the expense of the Oregon taxed recreational marijuana products only available at licensed retailers.

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.

¹⁷ https://oregoneconomicanalysis.com/2020/01/17/fun-friday-more-marijuana-border-effects/
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 and 2000 to 18th between 2000 and 2010. Oregon’s national ranking, including D.C., in population growth rate was 12th between 2010 and 2019 lagging behind all of our 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 census 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 strong growth as a consequence of state’s strong economic recovery. Population growth between 2018 and 2019 was 13th fastest in the nation. Due to this better than average growth on national scale, Oregon will most likely get an additional seat in the U.S. House of Representatives. Based on the current forecast, Oregon’s population of 4.236 million in 2019 will reach 4.612 million in the year 2029 with an annual rate of growth of 0.8 percent between 2019 and 2029.

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 aging population, long-term growth comes mainly from net in-migration. Working-age adults come to Oregon as long as we have favorable economic and living conditions. 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 and declining natural increase (births minus deaths), the ratio of net migration-to-population change has registered at 87 percent in 2019 and will continue to rise throughout the forecast horizon. By 2029, all of Oregon’s population growth and more will come from the net migration due to the combination of continued high net migration, decline in the number of births, and the rise in the number of deaths. The natural increase of population, defined as the numbers of births minus deaths, will actually turn negative by the end of the forecast period due to the below replacement level fertility and increase in the number of deaths associated with the increase in the elderly population. With Oregon’s favorable economic and environmental conditions, high level of net migration into Oregon will continue. Not too far into the future, migration will be solely responsible for Oregon’s population growth.

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 forecast period of 2019-2029. It will also reflect demographics impacted by the depression era birth cohort combined with changing migration of working age population and elderly retirees through history. 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 continue a very high level as the baby-boom generation continue to enter this age group combined with the attrition of
small depression era cohort due to death. However, this age cohort seems to have hit the highest point and will continue a high but diminishing rate of growth. The average annual growth of the elderly population will be 2.7 percent during the 2019-2029 forecast period. Different age groups among the elderly population show quite varied and fascinating growth trends. The youngest elderly (aged 65-74), which has been growing at an extremely fast pace in the recent past, will exhibit a tendency to slow down in the future. The annual growth rate of this youngest elderly will exceed 3 percent in the near future 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. This fast paced growth rate will taper off to negative growth by the end of the forecast period as a sign of end of the baby-boom generation transitioning to elderly age group. Reversing several years of slow growth and a period of 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 is starting to mature into 75-84 age group. Annual growth rate during the forecast period of 2019-2029 is expected to be unusually high 5.3 percent. The oldest elderly (aged 85+) will continue to grow at a slow but steady rate in the near future 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 3.2 percent. An unprecedented growth in oldest elderly will commence near the end of the forecast horizon as the fast growing 75-84 age group population transition into this oldest elderly age cohort. As a sign of massive demographic structural change of Oregon’s population, starting in 2023 the number of elderly population will exceed the number of children under the age of 18. To illustrate the contrast, in 1980 elderly population numbered less than half of the number of children in Oregon.

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 has remained and will remain at slow or below zero growth phase for several years. The size of this older working-age population will see only a small increase by 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 but slow growth starting in the year 2004 and will increase by 1.1 percent annual average rate during the forecast horizon mainly because of the exiting smaller birth (baby-bust) cohort being replaced by larger 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, but 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 in the near future and will see negative growth for the rest of the forecast years. This will translate into slow growth or even decline in the school enrollments. On average for the forecast period, this school-age population will actually decline by -0.4 percent annually. 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. 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 the number of children actually decline over the forecast horizon. The number of working-age adults in general will show fast paced growth after the
year 2023. Hence, based solely on demographics of Oregon, demand for public services geared towards children and young adults will likely to decline or 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.

Population forecasts by age-sex detail for the years 2000 through 2009, called intercensal estimates, in the tables in Appendix C are developed by OEA based on 2000 and 2010 censuses. Post-censal population totals for the years 2010 through 2019 are from the Population Research Center, Portland State University. The numbers of births and deaths through 2018 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 be 1.6 per woman in 2019 and this rate is projected to remain well below the replacement level of 2.1 children per woman during the forecast period, tracking below the national rate.

Life Table survival rates are developed for the year 2010. Male and female life expectancies for the 2010-2029 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 79.4 years for males and 83.5 years for females by the year 2029.

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 2019 and 2029 is expected to remain in the range of 35,760 to 38,300, averaging 37,100 persons annually. In the recent past, slowdown in Oregon’s economy 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. 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, limiting the potential destination choices. 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 aging population and decline in the number of births largely due to the decline in fertility rate.