Revenue Summary

As the 2019-21 biennium has begun, all major types of Oregon’s General Fund tax collections continue to outstrip gains in the underlying economy. The largest part of Oregon’s General Fund, personal income tax collections, surged during the peak tax season and continued to post strong gains as extension filers submitted their tax returns in the fall. Both income tax payments net of refunds, as well as withholdings out of paychecks, have been posting growth rates above what economic gains would call for. Corporate tax collections have slowed a bit in recent months, but remain elevated above their typical size as well.

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

Over the past business cycle, state tax policy changes have played a role in boosting tax collections. In particular, the increase in personal tax rates (Measure 66) and the imposition of a corporate minimum tax with (Measure 67) have supported additional revenue growth. In addition to enacting these tax laws, policymakers have increased revenues further by allowing some tax credits to sunset and by being selective about which federal tax law changes Oregon couples to. On net, however, the impact of state tax law changes has been relatively small since many tax cuts as well as tax increases have been enacted.

Oregon’s income tax rate structure has also played a role in supporting above-trend revenue gains. Strong household income gains represent the most encouraging aspect of Oregon’s economic expansion. As households earn more income, many step up tax brackets, leading to even faster growth in personal income tax liability. Also, as income growth has become polarized, a higher share of earnings is being accounted for by households at the top of the income distribution. Such households often face the highest tax rates. High-income households currently account for an income share that is around 50% larger than it was during the peak of the last economic expansion. The share of income reported by high-income households is very sensitive to the business cycle and will fall off sharply when the next recession inevitably comes around, exacerbating revenue losses.

Perhaps the biggest factor behind Oregon’s above-trend revenue gains has been the federal tax reforms that were enacted at the end of 2017. Federal tax law changes have boosted Oregon’s recent tax collections through several avenues. While many of these factors are clearly temporary and will fade in the months ahead, it can be
argued that some of the federal tax reforms have broadened Oregon’s tax base and will persist over the extended horizon.

Among temporary factors, timing shifts in tax payments in response to changing federal tax rules have been very widespread, particularly for business tax liability. Through strategic accounting practices, both firms and individuals actively pulled costs into 2017 and pushed income into future years in order to reduce their tax burdens. Also, taxpayers have sought to take full advantage of expiring or limited deductions, and have actively claimed bonus depreciation and Section 179 expenses.

In addition to shifts in the timing of tax payments, some taxpayers are turning to more complicated tax management strategies in response to federal reforms. In particular, some filers have changed their business structures or reporting classifications in light of the new federal rules. Switching between C-corporations and passthrough entities, from wages to business income, and dividing or merging different lines of business are all strategies that have the potential to lower tax burdens for some filers. To date, however, the adoption of complicated tax management strategies has been surprisingly limited. Over time, as tax practitioners get more experience with the new rules, such strategies may become more widespread. However, many practitioners report being hesitant to advise making big changes in filing status due to the uncertain future of federal tax policies. Filing changes are not without cost, and under a new administration or Congress, some of the federal law changes may well be reversed in the years ahead. For example, the decision to switch into a C-Corporation, is very difficult to reverse should incentives change.

While many of the downstream effects of federal tax law changes are likely to be temporary, Oregon’s tax base has clearly grown somewhat due to the reforms. One goal of the federal reforms was to rely on a broader tax base rather than higher tax rates. Corporate deduction limits such as the cap on net interest deductions feed through to state tax liability. Personal income tax deduction limits on business income such as operating losses can also affect state tax liability. In addition to limiting deductions, the territorial system of international taxation appears to have given businesses an incentive to report more income domestically.

While there is a great deal of uncertainty about the staying power of recent revenue growth, the December forecast reflects a stable economic outlook, with the expected size of General Fund collections increasing slightly over what was expected at the Close of Session. Going forward, the uncertain path of the nationwide economy will dominate the revenue outlook. 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 more than $2.7 billion in reserves set aside, amounting to almost 13% 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 $21,169 million. This represents an increase of $57 million from the September 2019 forecast, and an increase of $149 million relative to the Close of Session forecast. With revenue gains expected to be very modest from an historical perspective, there is both upside and downside risk to the forecast.

**Personal Income Tax**

Personal income tax collections were $2,460 million during the first quarter of fiscal year 2020, $13 million (0.5%) above the latest forecast. Compared to the year-ago level, total personal income tax collections rose by 9.0% relative to a forecast that called for an 8.4% increase. Table B.8 in Appendix B presents a comparison of actual and projected personal income tax revenues for the July-September quarter. Strong growth in collections has continued into the second 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. During the kicker certification process, when revenue data is reconciled with accounting records, it was determined that the kicker credit included an additional $118 million, bringing the total amount to just under $1.7 billion. This change was roughly neutral from a budgeting perspective since the beginning balance grew along with the size of the kicker credit.

**Corporate Excise Tax**

Corporate excise tax collections equaled $230 million for the first quarter of fiscal year 2020, $9 million (4.2%) below the September forecast. Compared to the year-ago level, net corporate excise tax collections fell by 9.5% while the forecast called for a decline of 13.1%.

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. 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. While large, the amount of taxes on repatriated earnings appears to be falling short of expectations, and has been revised downward.

**Other Sources of Revenue**

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**Table R.1**

<table>
<thead>
<tr>
<th>2019-21 General Fund Forecast Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Millions)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2019 COS</td>
</tr>
<tr>
<td>---------</td>
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<tr>
<td>Structural Revenues</td>
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<tr>
<td>Personal Income Tax</td>
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<tr>
<td>$18,283.5</td>
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<tr>
<td>Corporate Income Tax</td>
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<tr>
<td>$1,190.8</td>
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<tr>
<td>All Other Revenues</td>
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<tr>
<td>$1,546.1</td>
</tr>
<tr>
<td>Gross GF Revenues</td>
</tr>
<tr>
<td>$21,020.4</td>
</tr>
<tr>
<td>Offsets and Transfers</td>
</tr>
<tr>
<td>-$203.5</td>
</tr>
<tr>
<td>Administrative Actions1</td>
</tr>
<tr>
<td>-$21.5</td>
</tr>
<tr>
<td>Legislative Actions</td>
</tr>
<tr>
<td>-$199.5</td>
</tr>
<tr>
<td>Net Available Resources</td>
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<tr>
<td>$22,914.4</td>
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</table>

Confidence Intervals

<table>
<thead>
<tr>
<th>67% Confidence</th>
<th>14.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/- 7.1%</td>
<td>$1,497.4</td>
</tr>
<tr>
<td>$19.67B to $22.67B</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>95% Confidence</th>
<th>14.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/- 14.1%</td>
<td>$2,994.8</td>
</tr>
<tr>
<td>$18.17B to $24.16B</td>
<td></td>
</tr>
</tbody>
</table>

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

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 $1.56 billion in 2019-21, an upward revision of $7.6 million relative to the previous forecast. Increases in insurance taxes and interest earnings were partially offset by downward revisions in tobacco taxes, criminal fines and securities fees. In the out biennia, these revenues are revised higher due to a stronger outlook for insurance taxes.

**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 R.2

<table>
<thead>
<tr>
<th>Revenue Source</th>
<th>Forecast 2017-19</th>
<th>% Chg</th>
<th>Forecast 2019-21</th>
<th>% Chg</th>
<th>Forecast 2021-23</th>
<th>% Chg</th>
<th>Forecast 2023-25</th>
<th>% Chg</th>
<th>Forecast 2025-27</th>
<th>% Chg</th>
<th>Forecast 2027-29</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income Taxes</td>
<td>18,823.3</td>
<td>17.2%</td>
<td>18,285.8</td>
<td>-2.9%</td>
<td>21,709.3</td>
<td>18.7%</td>
<td>23,672.7</td>
<td>9.0%</td>
<td>25,717.4</td>
<td>8.6%</td>
<td>28,408.1</td>
<td>10.5%</td>
</tr>
<tr>
<td>Corporate Income Taxes</td>
<td>1,752.7</td>
<td>44.8%</td>
<td>1,325.9</td>
<td>-24.4%</td>
<td>1,288.4</td>
<td>-2.8%</td>
<td>1,459.4</td>
<td>13.3%</td>
<td>1,697.3</td>
<td>16.3%</td>
<td>1,909.0</td>
<td>12.5%</td>
</tr>
<tr>
<td>All Others</td>
<td>1,339.3</td>
<td>3.9%</td>
<td>1,557.4</td>
<td>16.3%</td>
<td>1,405.0</td>
<td>-9.8%</td>
<td>1,470.9</td>
<td>4.7%</td>
<td>1,543.1</td>
<td>4.9%</td>
<td>1,639.2</td>
<td>6.2%</td>
</tr>
<tr>
<td>Gross General Fund</td>
<td>21,915.3</td>
<td>18.1%</td>
<td>21,169.0</td>
<td>-3.4%</td>
<td>24,402.7</td>
<td>15.3%</td>
<td>26,603.0</td>
<td>9.0%</td>
<td>28,957.8</td>
<td>8.9%</td>
<td>31,956.3</td>
<td>10.4%</td>
</tr>
<tr>
<td>Offsets and Transfers</td>
<td>(129.5)</td>
<td></td>
<td>(209.1)</td>
<td></td>
<td>(112.0)</td>
<td></td>
<td>(114.3)</td>
<td></td>
<td>(78.3)</td>
<td></td>
<td>(80.8)</td>
<td></td>
</tr>
<tr>
<td>Net Revenue</td>
<td>21,785.8</td>
<td>17.6%</td>
<td>20,959.9</td>
<td>-3.8%</td>
<td>24,290.6</td>
<td>15.9%</td>
<td>26,488.7</td>
<td>9.0%</td>
<td>28,879.5</td>
<td>9.0%</td>
<td>31,875.4</td>
<td>10.4%</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 $4.7 billion lower than predicted over the next two biennia.

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8 The methodology for computing alternative scenarios has been changed to reflect recent work done by the Legislative Revenue Office. Assumptions: Recessions begin in 2019 and return to baseline income by 2026. The moderate recession
Corporate Activity Tax

HB 3427 (2019) creates a new state revenue source by implementing a corporate activity tax (CAT). 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 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.

This forecast represents the second time the new CAT has been included. 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 as shown in Tables B.1 and B.2.

In terms of the big picture economic impacts, as always, our office starts with the Legislative Revenue Office’s 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 we have no real economic or revenue data to evaluate the impact of the corporate activity tax as it begins in 2020. While businesses will make quarterly payments throughout 2020, it really will not be until April 2021 when their annual tax return is due that we will have a complete look at the revenue, taxpayer behavior and the like. As data does become available, our office, in conjunction with our advisors and the Legislative Revenue Office will work together to better understand the revenue and its impact. Our office will update the outlook accordingly at that time.

Lottery Earnings

While available Lottery resources are largely unchanged relative to three months ago, these small topline changes mask two underlying forecast adjustments.

First, video lottery growth not only remains strong, but has accelerated in the recent months. The video outlook has been raised $11 million in 2019-21 and $4.1 million in 2021-23, while the outer biennia adjustments are relatively minor. These near-term changes, when combined with recent forecast revisions, have removed much of the weakness or lingering hangover expectations from the ilani Casino Resort in southwest Washington.

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.
Second, traditional lottery has been revised down approximately $2.4 million per year over the extended forecast due to adjustments made to the multistate jackpot games, Powerball and Mega Millions.

No adjustments were made to the outlook for sports betting as the game has only been available for a handful of weeks and is therefore it is too soon to know how accurate the initial projections are. Scoreboard is projected to generate $8.3 million in available resources in 2019-21. These revenues 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**

Given the uncertain economic outlook and discussions with the advisory group, our office went ahead and modeled the impacts a recession would have on video lottery spending in Oregon. Of course one can model myriad alternative scenarios, however this one starts with IHS Markit’s pessimistic scenario of a mild to moderate recession. Our office then ran this through our economic and lottery models and compared the outcomes relative to the baseline.

All told, there is a clear impact and a permanent reduction in sales over the forecast horizon amounting to around $45 million per year ($29 million in transfers). Consumer spending on recreational services in this scenario is not expected to return to the baseline. However, given that the baseline has ongoing growth built into it, the mild to moderate recession scenario really results in a couple of flat years for video lottery sales. At this point, they also just happen to split into 2019-21 and 2021-23. If this scenario comes to pass, overall lottery resources for both biennia will show growth, albeit slower growth than the baseline. And the more severe a recession is, the larger the impact on consumer spending.
Other 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 10 years, consumers have remained cautious with their disposable income. Increases in spending on gaming have largely matched income growth at best.

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 recent report.9

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 Fund10 (ORDF) and the Education Stability Fund11 (ESF). This section updates balances and recalculates the outlook for these funds based on the May revenue forecast.

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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.
As of this forecast the two reserve funds currently total a combined $1.32 billion. At the end of the current 2019-21 biennium, they will total $1.76 billion. A slightly lower interest rate forecast results in fewer interest earnings for both reserve accounts relative to last quarter’s forecast.

The forecast for the ORDF includes one deposit for this biennium relating to the General Fund ending balance from the previous biennium (2017-19). A deposit of $199.5 million is expected in 2020 after the accountants close the books. The ORDF deposit relating to the increased corporate taxes from Measure 67 was made in June 2019. We had previously assumed it would occur during the 2019-21 biennium, however statute requires it to occur by the end of the biennium in which the revenues were received. All told, at the end of 2019-21 the ORDF will total $899.4 million.

The forecast for the ESF calls for $239.0 million in deposits during the 2019-21 biennium based on the current Lottery forecast. This would bring the ESF balance to $858.7 million at the end of the current biennium.

Together, the ORDF and ESF are projected to have a combined balance of $1.76 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 more than $2.73 billion, or 12.9 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. However, 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._

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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.
**Recreational Marijuana Tax Collections**

The underlying outlook for recreational marijuana sales and tax collections remains intact and largely unchanged. That said, there are a couple of new issues to the forecast that warrant continued monitoring to gauge their impact on taxes paid and/or the flow of money and when it is disbursed to recipient programs.

Tax collections in recent months have largely tracked expectations, although a couple 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.

One potential risk to sales and tax collections remains the outcome of pending policies and lawsuits regarding the vaping ban. Getting a handle on both the current market share of potentially impacted products and estimates of how consumers would respond is challenging but something our office continues to research. Should the ban, which is a public health concern, go into effect, our office will adjust the sales and tax revenue outlook accordingly.

In terms of a potential issue that does not impact the sales outlook, but could impact resources for recipient programs is the timing and size of actual transfers into the Oregon Marijuana Account. The current process is businesses make monthly estimated payments based on their sales, but then file quarterly tax returns. Once the return has been processed at the Department of Revenue, then the tax revenue from that particular business is available to transfer to programs.

To the extent that firms file tax returns in a timely manner and/or there are relatively few disputes between businesses and tax authorities, then monies may be available for recipient programs faster than is currently assumed in the forecast – generally a one or two quarter delay. This may have been the case in the first quarter of the 2019-21 biennium in which the actual transfer made into the Oregon Marijuana Account was about $4 million larger than expected, based upon these timing assumptions. Given such transfers are relatively new and fluctuations will naturally occur due to filing and processing patterns, no fundamental changes have been made yet to these timing assumptions. However this issue remains one to monitor moving forward.

Combined, the somewhat stronger sales in recent months and larger than expected quarterly transfer result in available resources in 2019-21 being revised higher by $6.6 million, while expectations remain unchanged in future biennia.

Finally, prices are one 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, over the past six months or so, prices are once again rising, 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 since the start of the year and retail prices more like 25 percent.

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 market works to find a better equilibrium between consumer demand and industry supply.

So far, price declines are ongoing among the concentrates and edibles, and their volume of sales is growing strongly. These differences among market segments represent any number of possibilities including that rising prices among more recently harvested products have not fully worked their way into the entire market yet, and/or the possibility that in a more mature industry, there may be greater seasonality in prices that ebbs and flows with harvest season.

Looking forward, Oregon is poised for strong growth in the coming years as the state’s population, household incomes, and marijuana usage rates all increase. Furthermore, black and medical market conversions should boost recreational sales and tax collections as well.

That said, 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.
POPCULATION 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 and 2000 to 18th between 2000 and 2010. Oregon’s national ranking, including D.C., in population growth rate was 12th between 2010 and 2018 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 very strong growth as a consequence of state’s strong economic recovery. Population growth between 2017 and 2018 was 11th 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 4.195 million in 2018 will reach 4.705 million in the year 2029 with an annual rate of growth of 1.0 percent between 2018 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, the ratio of net migration-to-population change has registered at 89 percent in 2018 and will continue to rise throughout the forecast horizon. By 2029, all of the population growth and more in Oregon 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 through the forecast horizon that 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 2018-2029. 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 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 2.9 percent.
during the 2018-2029 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 4 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. 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 2018-2029 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 2.9 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 structure 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 1.5 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 -0.2 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.

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 2018 are from the Population Research Center, Portland State University. The numbers of births through 2018 and the deaths through 2017 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 2018 and this rate is projected to remain 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 2018 and 2029 is expected to remain in the range of 38,500 to 47,500, averaging 42,600 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.