
Metro Transportation Revenue Tool Analysis and Evaluation

December 2019

FINAL ANALYSIS

ECONorthwest

ECONOMICS • FINANCE • PLANNING

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Introduction

Metro is considering instruments (revenue tools) to pay for future transportation investments. This summary, a compilation of research by ECONorthwest, the City of Portland, and Metro, presents a purely technical review of the tools identified below. It includes an initial assessment of near-term revenue potential. The tools under consideration include:

- Property Tax
- Vehicle Registration Fee (flat and tiered)
- Vehicle Privilege/Purchase Tax
- Regional Gas Tax
- Payroll Tax
- Corporate Activities Tax
- Business Income Tax
- Personal Income Tax (flat and progressive)
- General Sales Tax
- Targeted Sales Tax on Prepared Food and Beverage

This analysis explores the following key questions:

1. What rate(s) are required to raise \$10 million, \$50 million, and \$100 million annually from each instrument?
2. What are the important considerations associated with collection costs or logistical barriers to collection (e.g., constitutional or statutory limitations, need for IGAs with other entities, etc.) for each instrument?
3. What are the known, obvious legal issues associated with each instrument? Note: Metro will also conduct a separate legal analysis.

Ref	Funding Tool and Description	Rates required to raise \$10m, \$50m, and \$100m in 2020	Considerations											
			Legal	Logistical	Economic	Equity								
1	<p>Property Tax</p> <p>A tax levied on the assessed value of property and improvements.</p> <p>Measure 5 and 50 limit jurisdictions' ability to increase their permanent property tax rates. Other funding tools, that rely on <i>temporary</i> property tax increases, are legally allowed in Oregon and may be levied at a regional level:</p> <ul style="list-style-type: none"> General Obligation Bonds Local Option Levy 	<p>Rate per \$1,000 taxable assessed valueⁱ</p> <table border="1"> <thead> <tr> <th>Rate per \$1,000 TAV</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>\$0.055</td> <td>\$10m</td> </tr> <tr> <td>\$0.276</td> <td>\$50m</td> </tr> <tr> <td>\$0.552</td> <td>\$100m</td> </tr> </tbody> </table> <p>Summary When combined with Metro's existing property tax levy, to meet Metro's revenue targets, rates would total \$0.728, \$0.949, and \$1.225.</p>	Rate per \$1,000 TAV	Est. Rev.	\$0.055	\$10m	\$0.276	\$50m	\$0.552	\$100m	<p>Per ORS 268.315, Metro may levy an ad valorem tax on all taxable property within its boundaries not to exceed in any one year one-half of 1% (i.e. 0.005) of the real market value of all taxable property within the boundaries of the district.</p> <p>Note: Metro's current property tax rate is \$0.6732 per \$1,000 of taxable assessed value.ⁱⁱ</p>	<p>Administrative Ease: Collection mechanisms are already in place for property taxes, so administrative burden is relatively low.</p> <p>Uses of Funds: Contingent on the funding tool. General obligation bonds are restricted to capital costs. Local option levies may be used for capital costs or operations and maintenance costs. Both tools require that funds be spent on predetermined purposes.</p> <p>Public Vote: Required</p> <p>Intergovernmental Agreement: Not Required</p>	<p>Potential market distortions are lower to the extent that taxed properties experience tax compression (not relevant for general obligation bonds).</p> <p>Avoidance: Property taxes are difficult to avoid and easy to enforce, making the tax relatively efficient. Although, at the margins, increases affect the feasibility of development and increase the desirability of development in areas with lower property tax.</p> <p>Volatility: Property taxes are among the most stable funding sources available. Property tax revenue in Oregon is protected to some extent from volatility in the real estate market by provisions implemented with Measures 5 and 50.</p>	<p>Property tax increases may or may not have a direct connection to transportation system users, depending on how the funds are used.</p> <p>In Oregon's property taxation system, rising home values do not directly result in higher property taxes. Except in limited circumstances, property taxes grow at a statutorily limited rate of 3%, regardless of changes in the larger housing market. Homeowners certainly do experience predatory purchasing practices and other financial challenges with housing cost, but once they have a mortgage in place, rising home prices in the market, and associated property taxes, are not likely to directly lead to displacement. In that, "some evidence that property tax pressure can trigger involuntary moves by homeowners [exists], but no evidence that such displacement is more common in gentrifying neighborhoods than elsewhere, nor that property tax limitation protects long-term homeowners in gentrifying neighborhoods."ⁱⁱⁱ</p> <p>Property taxes are technically regressive because households are taxed at the same rate (and pay the same amount of tax on similar valued homes), regardless of their incomes. In practice, property taxes are based on Taxable Assessed Value (AV), and higher-income earners typically, but not always, live in higher-valued homes. At present, there is no clear consensus on whether the tax is progressive, regressive, or proportional.</p>
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2	<p>Vehicle Registration Fee (VRF)</p> <p>The VRF is a recurring charge on individuals that own cars, trucks, and other vehicles. Metro may impose a flat rate, or a tiered rate based on vehicle type.</p>	<p>This section displays two different rate structures:</p> <p>Annual Flat Rate^{iv}</p> <table border="1"> <thead> <tr> <th>Rate on All Registered Vehicles</th> <th>Rate on All Passenger Vehicles</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>\$6.26</td> <td>\$7.80</td> <td>\$10m</td> </tr> <tr> <td>\$31.29</td> <td>\$38.99</td> <td>\$50m</td> </tr> <tr> <td>—</td> <td>\$56.00</td> <td>\$72m</td> </tr> <tr> <td>\$62.59</td> <td>\$77.98</td> <td>\$100m</td> </tr> </tbody> </table> <p>Annual Tiered Rate at statutory maximum^v</p> <table border="1"> <thead> <tr> <th>Vehicle Class</th> <th>Max. Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>Passenger</td> <td>\$56.00</td> <td rowspan="3">\$65m</td> </tr> <tr> <td>Utility/Light Trailer</td> <td>\$63.00</td> </tr> <tr> <td>Mopeds / Motorcycles</td> <td>\$44.00</td> </tr> </tbody> </table> <p>Summary: Using either methodology, Metro would not be able to reach its \$100m revenue target with a VRF.</p> <p>* Cells shaded in red indicate rates that would surpass the allowed maximum rate. Note that rates must ultimately be imposed as whole dollar amounts.</p>	Rate on All Registered Vehicles	Rate on All Passenger Vehicles	Est. Rev.	\$6.26	\$7.80	\$10m	\$31.29	\$38.99	\$50m	—	\$56.00	\$72m	\$62.59	\$77.98	\$100m	Vehicle Class	Max. Rate	Est. Rev.	Passenger	\$56.00	\$65m	Utility/Light Trailer	\$63.00	Mopeds / Motorcycles	\$44.00	<p>Metro may legally impose a VRF by ordinance per ORS 801.040.^{vi} The fee would apply to all vehicles registered at a residence or business address within the district.</p> <p>VRF rates are statutorily limited per ORS 803.420^{vii} and ORS 803.442.^{viii} Fees are currently limited to \$56 per year per passenger vehicle.</p>	<p>Administrative Ease: A mechanism is already in place to collect statewide vehicle registration fees, which could be used to collect Metro's fees.</p> <p>Uses of Funds: VRF may be used to fund investments in the road right-of-way. If Metro raises revenues for highways, roads, streets, and roadside rest areas, Metro shall establish a Regional Arterial Fund to deposit all VRF revenues.</p> <p>Public Vote: Required. Per ORS 801.042, to establish a VRF ordinance, Metro must submit the VRF proposal to the electors of the district for approval.</p> <p>Intergovernmental Agreements: If the VRF is voter approved, Metro will enter into an IGA with all counties, other districts, and cities (with 300,000+ population) that overlap with Metro. The IGA must state the fee rates and, if applicable, the revenue apportionment among the counties and other districts. Before Counties can enter into the IGA, they shall consult with the cities in their jurisdiction.</p> <p>Once an ordinance is established, Metro shall enter into an IGA with the Department of Transportation who will collect the fees and distribute the revenue back to Metro.</p>	<p>Avoidance: Vehicle registration fees could be avoided by a vehicular owner registering their vehicle at an address that is outside of Metro's taxing jurisdiction.</p> <p>Volatility: Vehicle registration fees tend to be a fairly stable and predictable source of revenue.</p> <p>The number of registered vehicles in the three counties comprising Metro has grown by about 56,600 vehicles over the 2016–2018 period. Growth in registered vehicles is, however, slowing. The rate of total registered vehicles grew by 1.62% from 2016–2018, and 2.16% from 2014–2016. The rate of total registered passenger vehicles grew by 1.66% from 2016–2018, and 2.98% from 2014–2016.^{ix}</p>	<p>Vehicle registration fees are only paid by individuals and businesses that own automobiles, which is somewhat fair, as this is a rough approximation of the population that will use the transportation system. However, there is no direct ratio of vehicles owned and registered to the amount of benefits received from the transportation system.</p> <p>Vehicle registration fees are regressive. To make the fee less regressive, Metro could evaluate the legal and administrative feasibility of structuring a tax exemption for lower valued vehicles or a tiered rate based on vehicle value.</p> <p>Impact on the Individual: Oregon, Clackamas County, Multnomah County, and Washington County impose a VRF. If Metro imposes a VRF at \$56 per year (for example), passenger vehicle-owner who registered their vehicle under the new schedule would pay \$142 in Clackamas County, \$131 in Multnomah County, and \$142 in Washington County (annually):^x</p>
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3	<p>Vehicle Privilege / Purchase Tax</p> <p>A vehicle privilege tax is a tax for the privilege of selling a vehicle in a taxing jurisdiction. The vehicle dealer is responsible for paying the tax, but the dealer may pass on the tax amount onto the buyer.</p> <p>A vehicle purchase tax is a tax on vehicles which are purchased from dealers <i>outside</i> of the taxing jurisdictions, and then registered/titled in the taxing jurisdiction.</p> <p>Dealers in Oregon are responsible for collecting/remitting the tax; out-of-state dealers have the option of collecting/remitting the tax for motor vehicles.^{xi}</p>	<p>Limitations^{xiii} in the data provided by the Department of Revenue suggest that rates to meet the revenue targets could be lower.</p> <p>For both taxes, the rate is applied to the retail sales price of the vehicle (ORS 320).</p> <p>Vehicle Privilege:^{xiii}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.3%</td> <td>\$10m</td> </tr> <tr> <td>1.3%</td> <td>\$50m</td> </tr> <tr> <td>2.6%</td> <td>\$100m</td> </tr> </tbody> </table> <p>Vehicle Purchase (Use):^{xiv}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.7%</td> <td>\$10m</td> </tr> <tr> <td>3.5%</td> <td>\$50m</td> </tr> <tr> <td>7.5%</td> <td>\$100m</td> </tr> </tbody> </table>	Rate	Est. Rev.	0.3%	\$10m	1.3%	\$50m	2.6%	\$100m	Rate	Est. Rev.	0.7%	\$10m	3.5%	\$50m	7.5%	\$100m	<p>ORS 320.490 precludes local governments from levying a vehicle privilege / purchase tax, unless authorized by statute or unless it was in effect on or before October 6, 2017. While Metro is not necessarily considered a “local government”, legal review is needed to determine whether Metro may levy these taxes. ORS 320 does not define “local government.”</p> <p>ORS 320.405 and 320.410, outlines Oregon’s privilege / purchase taxes rate of 0.5% of the retail sales price of the taxable motor vehicle^{xv} and an excise tax of \$15 on the sale of a taxable bicycle.</p> <p>A “taxable vehicle” is either a “taxable bicycle” or a “taxable motor vehicle.” A “taxable bicycle” is a bicycle that is at least 26 inches with a retail sales price of \$200 or more. A “taxable motor vehicle” is a vehicle with a gross weight rating of 10,000 to 26,000 pounds (further defined in ORS 320.400.^{xvi}</p>	<p>Administrative Ease: The State of Oregon already imposes vehicle privilege / purchase (use) taxes. Metro could use the state’s existing collection mechanism.</p> <p>Uses of Funds: Per an Oregon Supreme Court ruling,^{xvii} the use of vehicle privilege / purchase tax funds is unrestricted (unlike gas taxes or vehicle title and registration fees which must be allocated to the State Highway Trust Fund.</p> <p>Public Vote: Required.</p> <p>Intergovernmental Agreement: Metro may enter into an IGA with the State who could collect the taxes and distribute the revenues back to Metro.</p>	<p>Avoidance: Unless the intent was tax evasion, there is little existing research on the risk of vehicle privilege / purchase tax avoidance.</p> <p>Volatility: Vehicle purchases declined by 40% over a period of 12 months in response to the last recession,^{xviii} indicating that revenue generated by a tax tied to new purchases could follow economic cycles.</p> <p>Vehicles tend to be more elastic in urban areas, as there are more alternative modes of transportation (e.g. compared to more rural areas). A 1997 study found that price elasticity for vehicles was 1.2 to 1.5 in the short-run and 0.2 in the long-run.^{xix} A 2009 study found that the price elasticity for a new vehicle was 1.311, implying that “consumers are somewhat sensitive to changes in price.”^{xx}</p>	<p>Vehicle Privilege / Purchase taxes are regressive because they have a larger impact on low-income residents than on those with higher incomes.</p> <p>Additional legal review would be needed to determine the extent to which Metro could reduce or waive the tax for vehicles with lower retail values in an attempt to make the taxes more progressive. ORS 320 does not outright preclude this as a tiered rate structure option.</p>
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4	<p>Regional Gas Tax</p> <p>A fuel tax is a tax typically levied as a fixed dollar amount per gallon, charged on the sale of gasoline and other fuels.</p>	<p>Flat Rate per Gallon of Gasoline only^{xxi}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>\$0.02</td> <td>\$10m</td> </tr> <tr> <td>\$0.08</td> <td>\$50m</td> </tr> <tr> <td>\$0.16</td> <td>\$100m</td> </tr> </tbody> </table> <p>Flat Rate per Gallon of Fuel (Gasoline and Diesel)</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>\$0.01</td> <td>\$10m</td> </tr> <tr> <td>\$0.06</td> <td>\$50m</td> </tr> <tr> <td>\$0.13</td> <td>\$100m</td> </tr> </tbody> </table>	Rate	Est. Rev.	\$0.02	\$10m	\$0.08	\$50m	\$0.16	\$100m	Rate	Est. Rev.	\$0.01	\$10m	\$0.06	\$50m	\$0.13	\$100m	<p>Nothing in ORS 319^{xxii} precludes a regional government from levying a regional gas tax.</p>	<p>Administrative Ease: A collection mechanism is already in place.</p> <p>Uses of Funds: Fuel tax revenue can be used flexibly for transportation projects (capital, operations, and maintenance). Funds may be used for roads, bike/pedestrian pathways, sidewalks, and other investments within the road right of way.</p> <p>Public Vote: Required</p> <p>Intergovernmental Agreement: Metro may enter into an IGA with the State who could collect taxes for and remit revenues to Metro.</p>	<p>Avoidance: Because the tax is added to the sale of gasoline, it is not likely that an individual could avoid the tax if purchasing fuel in the taxing jurisdiction. The individual could, however, avoid the tax by purchasing fuel outside the limits of the taxing jurisdiction.</p> <p>Volatility: Depending on total population, expected population growth, and the extent of tourism, fuel tax could provide a highly stable revenue source over long time horizon. That said, revenue expectations from fuel taxes could drop as the popularity in fuel efficient and fuel alternative vehicles increases over time.</p> <p>Purchased fuel in the three counties comprising Metro has grown by about 53.8 million gallons over the 2016–2018 period (6% change).^{xxiii} About 93% of this growth is due to the purchase of diesel fuel, rather than gasoline.^{xxiv}</p> <p>In a 2012 study, US evidence suggested that consumer demand for vehicle fuel falls more when fuel taxes rise, rather than when pre-tax prices rise.^{xxv}</p> <p>Per a 2014 study, “the price elasticity of motor gasoline is currently estimated to be in the range of -0.02 to -0.04 in the short term, meaning it takes a 25% to 50% decrease in the price of gasoline to raise automobile travel 1%.”^{xxvi} A study reviewing elasticity of gasoline between 2007 and 2014 found that “households did not dramatically change their behavior in response to changes in gasoline prices.”^{xxvii}</p> <p>Per a 2018 study, the decline in new auto sales after the last recession was not associated with a substantial decline in vehicle miles travelled.”^{xxviii}</p>	<p>Fuel taxes are regressive because gasoline expenditures account for a larger share of income from lower income households; moreover, members of those households often drive older, less fuel-efficient vehicles.</p> <p>Metro’s tax would apply in addition to state (\$0.34 per gallon, or \$0.36 effective January 2020) and federal (\$0.184 per gallon) rates.^{xxix} In addition, some local municipalities with Metro’s UGB (including Multnomah and Washington Counties and the City of Portland) levy a gas tax.</p> <p>A fuel tax has benefits because it reduces the externalities associated with automobile travel (e.g., congestion, pollution) and induce drivers to use vehicles that are more fuel-efficient. Using fuel taxes to fund transportation can improve mobility for lower income households.</p>
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5	<p>Payroll Tax</p> <p>A payroll tax is a tax on wages and salaries paid by employers or by employees as a payroll deduction. A payroll tax generates revenue from people who work inside an area, even if they live outside of the area in which the tax is applied.</p> <p>Employers, including those out-of-state, are required to pay a payroll tax on employees who work in the area, including telecommuters.</p>	<p>Employer and Self-employment payroll tax^{xxx}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.02%</td> <td>\$10m</td> </tr> <tr> <td>0.11%</td> <td>\$50m</td> </tr> <tr> <td>0.21%</td> <td>\$100m</td> </tr> </tbody> </table> <p>As a point of reference, the TriMet regional payroll tax rate will be 0.7737% in 2020.</p>	Rate	Est. Rev.	0.02%	\$10m	0.11%	\$50m	0.21%	\$100m	<p>Payroll tax may be imposed by ordinance by a mass transit district established under ORS 267.010 to 267.390. Legal review is needed to determine whether Metro could levy a payroll tax under ORS 268.310.^{xxxi}</p> <p>Preliminary legal review by Metro attorney identified no legal barrier to Metro imposing a payroll tax.</p>	<p>Administrative Ease: Depending on how the tax is implemented, administration costs could be fairly low as employers are required to withhold and report payroll tax.</p> <p>Uses of Funds: No restrictions on the use of funds were identified. If Metro is legally allowed to impose a payroll tax, additional legal review may be needed to determine the full extent of how funds may be used.</p> <p>Public Vote: Likely required – legal review needed</p> <p>Intergovernmental Agreement: Legal review needed</p>	<p>Because payroll taxes are broad-based, low tax rates (<1%) have potential to generate substantial levels of revenue.</p> <p>Avoidance: Though illegal, cash income can be underreported, reducing an individual's tax liability. For example, the IRS estimated that 10% of 2006 tips by employees went unreported.^{xxxii}</p> <p>Volatility: Though dependent upon larger economic trends, payroll taxes are relatively stable.</p>	<p>Payroll tax progressivity can be increased by exempting wages below a certain threshold or imposing a tiered rate structure.</p> <p>In addition, the statutory incidence of the tax (i.e., whether the employer or the employee is responsible for payment) could affect the economic burden on an individual, at least in the short run.</p>
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6	<p>Corporate Activities Tax</p> <p>A corporate activities tax is a gross receipts tax, which is a tax on the total gross revenue of a company, regardless of its source.</p>	<p>Corporate Activities Tax^{xxxiii}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.01%</td> <td>\$10m</td> </tr> <tr> <td>0.05%</td> <td>\$50m</td> </tr> <tr> <td>0.10%</td> <td>\$100m</td> </tr> </tbody> </table>	Rate	Est. Rev.	0.01%	\$10m	0.05%	\$50m	0.10%	\$100m	<p>Per Section 67 of Enrolled House Bill 3427, "a city, county, district or other political subdivision or municipal corporation of this state may not impose, by ordinance or other law, a tax upon commercial activity or upon receipts from grocery sales."^{xxxiv} Jurisdictions are not preempted if the tax was in effect and operative as of April 1, 2019 (or was adopted prior to March 1, 2019).</p>	<p>Administrative Ease: Metro is preempted from levying this tax. The administrative burden would fall on lobbying the state to reverse the preemption for districts or make an exception for Metro.</p> <p>Use of Funds: Funds from the newly passed corporate activity tax will be transferred to the Fund for Student Success and will be used for education spending. Though there are no restrictions on spending of revenue from additional gross receipts tax.</p> <p>Public Vote: A public vote would ultimately be required. In 2016, Oregon asked voters to approve a 2.5% gross receipts tax on C corporations whose sales exceeded \$25m (Measure 97). Voters opposed the measure 59% to 41%.</p>	<p>Because gross receipts taxes are broad-based, low tax rates (<1%) have potential to generate substantial levels of revenue.</p> <p>Avoidance: If the tax is perceived to be too costly to small-scale businesses or start-ups, they could choose to locate elsewhere. While it would reduce overall revenues, the tax could be structured similar to the City of Portland's tax by exempting small businesses.</p> <p>Volatility: Gross receipts taxes are also relatively stable and track well with broader economic trends.</p>	<p>A gross receipts tax would face opposition from the business community; public outreach would be necessary to frame the value proposition appropriately.</p> <p>The tax is functionally a sales tax, and regressive, to the extent firms are able to pass the tax on in the form of higher prices.</p> <p>Some also argue the tax is regressive if it leads to lower employee wages. As wealthier individuals often have substantial income from wages and business capital, others argue the tax falls proportionally higher on business owners and is therefore progressive.</p> <p>The current Portland gross receipts tax only applies to large retailers and was partly implemented to support the City of Portland's Climate Action Plan.</p>
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7	<p>Business Income Tax</p> <p>A business income tax (also known as a corporate income tax) is a tax levied on business income. The tax applies to the taxable income derived from sources within a jurisdiction.</p>	<table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.1%</td> <td>\$10m</td> </tr> <tr> <td>0.4%</td> <td>\$50m</td> </tr> <tr> <td>0.8%</td> <td>\$100m</td> </tr> </tbody> </table> <p>Summary Metro could meet each of its three revenue targets, while implementing a tax rate under the legal limit of 1%.</p>	Rate	Est. Rev.	0.1%	\$10m	0.4%	\$50m	0.8%	\$100m	<p>ORS 268.505^{xxxv} allows Metro to impose a tax (which may not exceed 1%), by ordinance, on or measured by the net income of a mercantile, manufacturing, business, financial, centrally assessed, investment, insurance, or other corporation/entity that is subject to the tax under ORS chapter 317 or 318.</p> <p>Legal barriers to implementation may still exist due to the passage of HB 3427^{xxxvi} which preempted commercial activity taxes. Legal review is needed to determine the extent to which a business income tax is preempted as a subset of the commercial activity tax.</p>	<p>Administrative Ease: Oregon already levies a progressive business income tax. Existing infrastructure would make administering additional taxes relatively easy.</p> <p>Public Vote: Required</p> <p>Uses of Funds: No restrictions</p> <p>Intergovernmental Agreement: Metro may enter into an IGA with the State who could collect the taxes and distribute the revenues back to Metro.</p>	<p>A 1% tax on all business income would generate substantial annual revenue.</p> <p>Avoidance: Implementing this tax could increase appeal of Clark County, relative to Portland, as a business location. Businesses with more than one location or a home office located outside the taxing district could list the non-taxable address as the principle place of business.</p> <p>Volatility: Corporate or business income taxes tend “to be the most volatile source of tax revenue” because they are sensitive to variations in business cycles.^{xxxvii}</p>	<p>Some argue the tax is regressive if it leads to lower employee wages. As wealthier individuals often have substantial income from wages and business capital, others argue the tax falls proportionally higher on business owners and is therefore progressive.</p>
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0.4%	\$50m													
0.8%	\$100m													
8	<p>Personal Income Tax</p> <p>A personal income tax is a tax paid on an individual's personal income. The tax may be levied as a percentage of the individual's personal income, or as a flat fee.</p>	<p>Based on information provided by the City of Portland^{xxxviii}</p> <table border="1"> <thead> <tr> <th>Single rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.02%</td> <td>\$10m</td> </tr> <tr> <td>0.1%</td> <td>\$50m</td> </tr> <tr> <td>0.2%</td> <td>\$100m</td> </tr> </tbody> </table> <p>See addendum for analysis of a tiered income tax</p>	Single rate	Est. Rev.	0.02%	\$10m	0.1%	\$50m	0.2%	\$100m	<p>ORS 268.505^{xxxix} allows Metro to impose a tax, by ordinance, on the entire taxable income of every resident of the district who is subject to the tax under ORS chapter 316.</p> <p>The personal income tax rate may not exceed 1%.</p>	<p>Administrative Ease: Oregon already levies a personal income tax. Existing tax collection infrastructure would make administering additional taxes relatively easy.</p> <p>Public Vote: Required</p> <p>Uses of Funds: No restrictions</p> <p>Intergovernmental Agreement: Metro may enter into an IGA with the State who could collect the taxes and distribute the revenues back to Metro.</p>	<p>Personal income taxes are one of the state's largest income sources and can generate substantial amounts of revenue.</p> <p>Avoidance: Raising income tax could decrease the appeal of living or working within the taxing district. Partial avoidance could be achieved through choosing not to increase income or maximizing deductions and credits. At the extreme, individuals not working would avoid the tax entirely.</p> <p>Volatility: Personal income taxes are highly volatile, but less volatile than the business income tax.^{xl} The taxes “ups and downs are directly tied to a state's economic condition through employment. Taxable income falls during recessions... [and] surges during expansions.”^{xli}</p>	<p>Personal income taxes can be implemented in a variety of ways and each would affect equity differently.</p>
Single rate	Est. Rev.													
0.02%	\$10m													
0.1%	\$50m													
0.2%	\$100m													

Ref	Funding Tool and Description	Rates required to raise \$10m, \$50m, and \$100m in 2020	Considerations											
			Legal	Logistical	Economic	Equity								
9	<p>General Sales Tax</p> <p>A general sales tax is a consumption tax on the sale of all goods and services.</p> <p>The tax is usually levied at the time of transaction and collected by the seller who passes it on to the government.</p>	<p>Based on information provided by the City of Portland^{xiii}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.02%</td> <td>\$10m</td> </tr> <tr> <td>0.07% to 0.14%</td> <td>\$50m</td> </tr> <tr> <td>0.18% to 0.25%</td> <td>\$100m</td> </tr> </tbody> </table>	Rate	Est. Rev.	0.02%	\$10m	0.07% to 0.14%	\$50m	0.18% to 0.25%	\$100m	<p>ORS 305.620 enables any state agency or department to enter into agreement with a political subdivision to collect, enforce, administer or distribute local taxes, including <i>local</i> sales taxes.^{xiii} Additional legal review should determine the extent to which Metro could levy a <i>regional</i> sales tax.</p>	<p>Administrative Ease: A general sales tax would require new staff to oversee implementation and administration (monthly reporting, enforcement, etc.). Businesses that collect sales tax would also need to adjust their accounting procedures.</p> <p>Uses of Funds: No restrictions</p> <p>Public Vote: Required. Sales taxes are unpopular in Oregon and numerous proposals have been defeated by wide margins. Ontario was the first city in Oregon to approve a general sales tax in 2017, but it was overturned through a referendum.</p> <p>Intergovernmental Agreement: Not required; an agreement could be considered to outline revenue sharing.</p>	<p>The broad array of goods and services taxed would easily generate substantial revenue.</p> <p>Avoidance: A general sales tax could be avoided by shipping online purchases to an address or PO Box outside of taxing boundary. Based on “purchase decisions of approximately 25,000 online users... people living in high sales taxes locations are significantly more likely to buy online.”^{xiv}</p> <p>Volatility: General sales tax revenue would be relatively stable over time, tracking well with broader economic trends, but with less volatility than an income tax.</p>	<p>A general sales tax is considered regressive because low-income people pay a higher share of their income. Exemptions (e.g., for basic necessities such as groceries) would increase progressivity.</p> <p>Because there are so many goods and services taxed there may be a weak connection between the tax users pay and the benefits they receive.</p> <p>Visiting non-residents (e.g., tourists), who also use the transportation system, will bear a portion of the tax burden imposed by a general sales tax.</p>
Rate	Est. Rev.													
0.02%	\$10m													
0.07% to 0.14%	\$50m													
0.18% to 0.25%	\$100m													
10	<p>Targeted Sales Tax on Prepared Food and Beverages</p> <p>A targeted sales tax on food and beverages is a consumption tax on prepared food and beverages.</p> <p>The tax is usually levied at the time of the transaction and collected by the seller who passes it onto the government.</p>	<p>Based on information provided by the City of Portland^{xv}</p> <table border="1"> <thead> <tr> <th>Rate</th> <th>Est. Rev.</th> </tr> </thead> <tbody> <tr> <td>0.1% to 0.2%</td> <td>\$10m</td> </tr> <tr> <td>0.7% to 0.8%</td> <td>\$50m</td> </tr> <tr> <td>1.3% to 1.8%</td> <td>\$100m</td> </tr> </tbody> </table>	Rate	Est. Rev.	0.1% to 0.2%	\$10m	0.7% to 0.8%	\$50m	1.3% to 1.8%	\$100m	<p>ORS 305.620 enables any state agency or department to enter into agreement with a political subdivision to collect, enforce, administer or distribute local taxes, including <i>local</i> sales taxes.^{xvi} Additional legal review should determine the extent to which Metro could levy a <i>regional, targeted</i> sales tax.</p>	<p>Administrative Ease: A targeted sales tax would require new staff to oversee implementation. For example, in 2008 the City of Ashland (2017 pop: 20,733) had one employee who managed their food and beverage tax and room tax. Given Metro’s size, more than one staff member may be necessary to administer the tax program.^{xvii}</p> <p>Note: a targeted sales tax on food and beverage may be challenging for the businesses, particularly small businesses, that collect the tax.^{xviii}</p> <p>Public Vote: Required. Only two Oregon cities have a prepared food and non-alcoholic beverage tax: Ashland (since 1993; 5%) and Yachats (since 2007; 5%). The widespread unpopularity of this tax will make the tool difficult to implement.</p> <p>Uses of Funds: No restrictions</p> <p>Intergovernmental Agreement: Not required; an agreement could be considered to outline revenue sharing parameters</p>	<p>While not as broad as a general sales tax, a <i>targeted</i> food and beverage sales, levied across the Metro area, would generate a substantial revenue.</p> <p>Avoidance: A targeted tax may impact purchases. For example, in Philadelphia a sugar-sweetened beverage tax of 1 cent per ounce decreased household purchases by 27.7%.^{xix} Additionally, people living near the jurisdictional border may choose to travel further to purchase food and beverages, which would decrease purchases and tax revenue.</p> <p>Volatility: A food and beverage sales tax would be relatively stable and predictable over time. It would track broader economic trends, but with less volatility than an income tax.</p>	<p>A prepared food and beverage sales tax would likely be regressive because lower-income people would pay a higher share of their income on the tax. Implementation details will affect progressivity (e.g., exempting food prepared and sold at grocery stores or fast food restaurants could increase progressivity but would also lower revenue potential).</p> <p>Because this tax only targets prepared food and beverages, there is a weak connection between the tax and the benefits to the transportation system. A targeted sales tax on other kinds of goods (e.g. tires, auto parts, etc.) may have a stronger connection with the transportation. (For example, The State of Kansas imposes a \$0.25 excise tax on tires sold. While technically a fee, the City of Chicago and State of Nebraska impose a \$1 fee per (qualified) tire sold.)</p> <p>A general sales tax will export some of the tax burden onto visiting non-residents (including tourists), who also use the transportation system.</p>
Rate	Est. Rev.													
0.1% to 0.2%	\$10m													
0.7% to 0.8%	\$50m													
1.3% to 1.8%	\$100m													

Addendum

	Low	High
\$10,000,000		
Income up to \$50K (\$100K for joint filers)	0.01%	0.01%
Income from \$50K to \$100K (\$100K to \$200K for joint filers)	0.02%	0.02%
Income from \$100K to \$250K (\$200K to \$500K for joint filers)	0.03%	0.03%
Income above \$250K (above \$500K for joint filers)	0.04%	0.05%
\$50,000,000		
Income up to \$50K (\$100K for joint filers)	0.06%	0.07%
Income from \$50K to \$100K (\$100K to \$200K for joint filers)	0.09%	0.10%
Income from \$100K to \$250K (\$200K to \$500K for joint filers)	0.13%	0.16%
Income above \$250K (above \$500K for joint filers)	0.21%	0.24%
\$100,000,000		
Income up to \$50K (\$100K for joint filers)	0.12%	0.15%
Income from \$50K to \$100K (\$100K to \$200K for joint filers)	0.18%	0.21%
Income from \$100K to \$250K (\$200K to \$500K for joint filers)	0.27%	0.33%
Income above \$250K (above \$500K for joint filers)	0.42%	0.48%

End Notes

ⁱ Calculated by Metro. The calculation assumed that collections would start on 7/1/2021, that assessed value increased 3% annually from the current fiscal year, and that the collection rate was 96.5%. If a local option levy, the rate would need to be higher because of compression.

ⁱⁱ Metro. Adopted Budget, Fiscal Year 2019-2020, page C-12. <https://www.oregonmetro.gov/sites/default/files/2019/09/10/FY2019-20-adopted-budget-09102019.pdf>

ⁱⁱⁱ Isaac William Martin and Beck, Kevin. (2016). Gentrification, Property Tax Limitation, and Displacement. *Urban Affairs Review*, Vol. 54(1) 33-73.

^{iv} Rates were informed through break even analyses using these assumptions and methods: Using DMV records by county for 2018 (growth factor of 1.3% applied), ECONorthwest performed a goal seek analyses that multiplied “Total Registered Vehicles,” for the tri-county area *inside* Metro’s UGB* by tax rate (and “Passenger” Vehicles, for the tri-county area *inside* Metro’s UGB* by tax rate). https://www.oregon.gov/ODOT/DMV/Pages/News/vehicle_stats.aspx

* To determine registered vehicles *inside* Metro’s UGB, ECONorthwest multiplied “Total Registered Vehicles” / “Passenger Vehicles” in the tri-county area (Clackamas, Multnomah, and Washington County) by population factors provided by Metro’s economist. The percent of the county population within the Metro UGB was 68-69% in Clackamas County, 98-99% in Multnomah County, and 92-93% in Washington County. ECONorthwest used the low-end of each range to determine registered vehicles *inside* Metro’s UGB.

^v Rates were informed through break even analyses using these assumptions and methods: Using DMV records by county for 2018 (growth factor of 1.3% applied), ECONorthwest performed a goal seek analysis that multiplied a ‘share total registered vehicles’ (see note below), for the tri-county area *inside* Metro’s UGB,* by tax rates. https://www.oregon.gov/ODOT/DMV/Pages/News/vehicle_stats.aspx

* To determine registered vehicles *inside* Metro’s UGB, ECONorthwest multiplied “Total Registered Vehicles” / “Passenger” Vehicles in tri-county area (Clackamas, Multnomah, and Washington County) by population factor provided by Metro’s economist. The percent of the county population within the Metro UGB was 68-69% in Clackamas County, 98-99% in Multnomah County, and 92-93% in Washington County. ECONorthwest used the low-end of each range to determine registered vehicles *inside* Metro’s UGB.

Note: A ‘share of total registered vehicles’ excludes all fields except those listed as “Passenger,” “Light Trailer,” and “Motorcycle.”

^{vi} **ORS 801.042** Terms and conditions for imposition of registration fee by district; rules. https://www.oregonlegislature.gov/bills_laws/ors/ors801.html

^{vii} **ORS 803.420** Registration fees. https://www.oregonlegislature.gov/bills_laws/ors/ors803.html

^{viii} **ORS 803.422** Registration fees based on miles per gallon.

(3) Except as provided in ORS 319.890 (3), in addition to the registration fees prescribed under ORS 803.420 (6)(a), during the period beginning on January 1, 2018, and ending on December 31, 2019, there shall be paid for each year of the registration period an additional amount of \$13.

(4) Except as provided in ORS 319.890 (3), in addition to the registration fees prescribed under ORS 803.420 (6)(a), during the period beginning on January 1, 2020, and ending on December 31, 2021, there shall be paid for each year of the registration period, an additional amount as follows:

- (a) For vehicles that have a rating of 0-19 MPG, \$18.
- (b) For vehicles that have a rating of 20-39 MPG, \$23.
- (c) For vehicles that have a rating of 40 MPG or greater, \$33.
- (d) For electric vehicles, \$110.

^{ix} Vehicle registration records: https://www.oregon.gov/ODOT/DMV/Pages/News/vehicle_stats.aspx

^x Oregon’s imposes a \$112 biennial VRF (\$56/year). Clackamas County imposes a \$60 biennial VRF which applies to cars, pick-up trucks, vans and other passenger vehicles (\$30/year); the fee for motorcycles is \$30 biennially (\$15/year). Multnomah County imposes a \$38 biennial VRF (\$19/year). Washington County imposes a \$60 biennial VRF (\$30/year); the fee for motorcycles/mopeds is \$34 biennially (\$17/year).

- Oregon: <https://content.govdelivery.com/accounts/ORDOT/bulletins/1c003c9>
- Clackamas County: <https://www.clackamas.us/news/2019-02-21/vehicle-registration-fee-approved-by-clackamas-county-board-will-help-meet-local-transportation-needs>
- Multnomah County: <https://multco.us/bridges/about-county-vehicle-fee>

-
- Washington County: <https://www.co.washington.or.us/LUT/News/vrf-in-effect-070118.cfm>

^{xi} More information about vehicle privilege / vehicle purchase taxes (descriptive): <https://www.oregon.gov/DOR/programs/businesses/Pages/Vehicle-privilege-and-use-taxes.aspx>; HB 4059 Enrolled (amendments to definitions): <https://olis.leg.state.or.us/liz/2018R1/Downloads/MeasureDocument/HB4059/Enrolled>

^{xii} The estimates assume 1.3 percent annual growth in value of car sales between 2018 and 2020 and a conservative price elasticity of demand of 1.5 (see “Economic”).

The following information describes the data limitations for the Department of Revenue (DOR) data informing the Vehicle Privilege and Vehicle Purchase tax projections. The implications of the data limitations are that the revenue estimates are conservative—or that the tax rates may be lower to reach the revenue targets.

Vehicle Privilege: Data is not tracked at the county level (and the DOR only receives reports for total retail sales and not the number of vehicles sold). The DOR aggregated retail sales data for all cities within the Metro UGB, meaning retail sales within an unincorporated area within Metro’s UGB were not included.

Vehicle Purchase: The Department of Motor Vehicles cannot title or register a taxable vehicle without a certificate from the DOR showing that the tax was paid—and the tax can be paid in two ways: (1) The purchaser can pay the tax *directly to the dealer* or (2) the purchaser can pay the tax *directly to the DOR*. If the tax was paid directly to the dealer, the dealer must request the certificate from DOR. In this case, the dealer does not provide information on the city or county of the purchaser to the DOR; the dealer simply records that the purchaser is an Oregon resident. Accordingly, the data provided by the DOR *only* encompasses aggregated taxable retail sales for cities with the Metro UGB (excluding unincorporated areas) when the purchaser pays the tax *directly to the DOR*. In addition, the DOR does not verify whether an address provided by the purchaser is their *actual* residence. The result of all this is that information on the purchase tax could be inaccurate, either to a small or large extent.

^{xiii} Rates were informed through break even analyses using these assumptions and methods: Inflate 2018 DOR data (sum of gross sales, less exemptions) for cities within Metro’s UGB using CPI. Perform a goal seek analysis that multiplied the sum of gross sales (less exemptions) by a tax rate.

^{xiv} Rates were informed through break even analyses using these assumptions and methods: Inflate 2018 DOR data (sum of taxable sales amount) for cities within Metro’s UGB using CPI. Perform a goal seek analysis that multiplied the sum of taxable sales by a tax rate.

^{xv} **ORS 320.405** Tax for privilege of engaging in business of selling motor vehicles at retail; collection of privilege tax from purchaser. https://www.oregonlegislature.gov/bills_laws/ors/ors320.html

^{xvi} **ORS 320.400** Definitions for ORS 320.400 to 320.490 and 803.203. https://www.oregonlegislature.gov/bills_laws/ors/ors320.html

^{xvii} Supreme Court Of The State Of Oregon. AAA Oregon/ Idaho Auto Source, LLC v. State Of Oregon. http://media.oregonlive.com/roadreport_impact/other/p17027coll3_6822.pdf

^{xviii} Dupor, William. (May 2018). “Last Recession Effect: New Car Buyers Hold Cars Longer.” Federal Reserve Bank of St. Louis. <https://www.stlouisfed.org/on-the-economy/2018/may/great-recession-effect-new-car-buyers-hold-cars-longer>

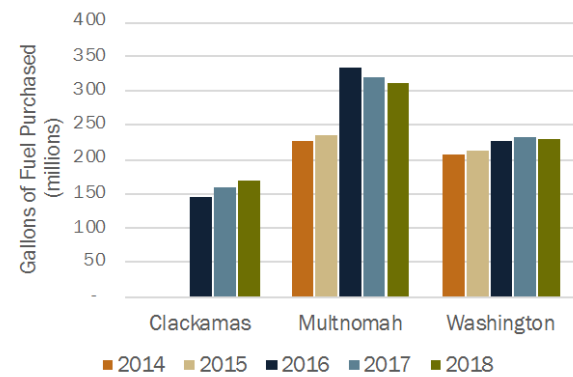
^{xix} Patrick L Anderson; McLellan, Richard; Overton, Joseph; Dr Wolfram, Gary L. (1997). Price Elasticity of Demand, Harvard University. https://scholar.harvard.edu/files/alada/files/price_elasticity_of_demand_handout.pdf

^{xx} Copeland, Adam. (September 2009). The Dynamics of Automobile Expenditures. Federal Reserve Bank of New York Staff Reports. Staff Report no. 394. https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr394.html

^{xxi} To estimate revenue, ECONorthwest performed a goal seek analysis based on fuel consumption (gallons) (i.e. gallons of fuel sold multiplied by a rate). Fuel consumption data (gasoline and diesel) was provided by ODOT for the tri-county area (Clackamas, Multnomah, and Washington County). Gallons of gasoline was based on tax paid sales in the counties, as reported to ODOT by their licensed Motor Vehicle Fuel Dealers. Diesel gallons was based on fuel received in the counties by ODOT’s licensed Use Fuel Sellers. Fuel consumption for each county was multiplied by a population factor to estimate volume of fuel sold within Metro UGB (which is not contiguous with the tri-county area). Population factors were provided by Metro’s economist. The percent of the county population within the Metro UGB was 68-69% in Clackamas County, 98-99% in Multnomah County, and 92-93% in Washington County. The estimates assume no net increase in fuel consumption, consistent with recent volume data and small estimates of the price elasticity of demand for fuel.

^{xxii} **ORS Chapter 319** — Motor Vehicle and Aircraft Fuel Taxes. https://www.oregonlegislature.gov/bills_laws/ors/ors319.html

^{xxiii} **Purchased Gasoline (millions of gallons), Tri-County Area, 2014-2018**
Source: ECONorthwest using data from ODOT.



xxiv Gasoline and Diesel fuel volume data derived from ODOT for the tri-county area. Data was provided for 2014 through 2018, however, some gaps in the data exist: ODOT did not have gasoline or diesel fuel volume data for Clackamas County in 2014 and 2015; ODOT did not have diesel fuel volume data for Multnomah and Washington Counties for 2014 and 2015.

xxv Institute for Fiscal Studies. (July 2012). Tax and Benefits Policy: insights from behavioural economics. <https://www.ucl.ac.uk/~uctpimr/research/IFScomm125.pdf>

xxvi U.S. Energy Information Administration. (2014). Gasoline prices tend to have little effect on demand for car travel, based on data from the Federal Reserve Bank of St. Louis. <https://www.eia.gov/todayinenergy/detail.php?id=19191>

xxvii United States Department of Labor. (March 2016). Using gasoline data to explain inelasticity, Bureau of Labor Statistics. Written by Eliana Eitches and Vera Crain. <https://www.bls.gov/opub/btn/volume-5/using-gasoline-data-to-explain-inelasticity.htm>

xxviii Dupor, William. (May 2018). “Last Recession Effect: New Car Buyers Hold Cars Longer.” Federal Reserve Bank of St. Louis. <https://www.stlouisfed.org/on-the-economy/2018/may/great-recession-effect-new-car-buyers-hold-cars-longer>

xxix State and federal gas tax rates, on the sale of gasoline: <https://www.oregon.gov/ODOT/FTG/Pages/Current%20Fuel%20Tax%20Rates.aspx>; <https://www.oregon.gov/odot/ftg/pages/index.aspx>
Local gas tax rates, on the sale of gasoline: https://www.oregon.gov/ODOT/FTG/Pages/Current%20Fuel%20Tax%20Rates.aspx?wp9904=p:1#g_c4d3c385_c495_4c4b_8fa2_0c771edc16e5

xxx Estimates are based on output for calendar year 2020 from ECONorthwest’s models of the regional economy and TriMet payroll tax collections. Estimate assumes collection of state revenue in lieu of payroll taxes that is proportionate TriMet in lieu collections (about 0.5% of total collections in recent years), and that the Metro payroll tax increment is otherwise identical in terms of effects on the economy and taxpayer behavior.

xxxi **ORS 268.310** Powers of district. https://www.oregonlegislature.gov/bills_laws/ors/ors268.html

xxxii U.S. Treasury Inspector General for Tax Administration. (September 2018). “Billions in Tip-Related Tax Noncompliance Are Not Fully Addressed and Tip Agreements Are Generally Not Enforced.” <https://www.treasury.gov/tigta/auditreports/2018reports/201830081fr.pdf>

xxxiii Estimate based on LRO’s revenue impact statement for HB 3427 and Metro region’s assumed share of statewide economic activity.

xxxiv Enrolled House Bill 3427-A. Local Tax Preemption, page 36. <https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB3427>

xxxv **ORS 268.505** Income tax; rate limitation; elector approval required. https://www.oregonlegislature.gov/bills_laws/ors/ors268.html

xxxvi <https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB3427/Enrolled>

xxxvii Kim Rueben and Randall, Megan. (November 2017). “Revenue Volatility: How States Manage Uncertainty.” Urban Institute, Tax Policy Center. https://www.taxpolicycenter.org/sites/default/files/publication/149171/revenue-volatility_1.pdf

xxxviii ECONorthwest extrapolated City of Portland estimates for the City to the Metro region based primarily on population and county-level personal income.

^{xxxix} **ORS 268.505** Income tax; rate limitation; elector approval required. https://www.oregonlegislature.gov/bills_laws/ors/ors268.html

^{xi} Kim Rueben and Randall, Megan. (November 2017). "Revenue Volatility: How States Manage Uncertainty." Urban Institute, Tax Policy Center. https://www.taxpolicycenter.org/sites/default/files/publication/149171/revenue-volatility_1.pdf

^{xii} Mary Murphy; Zhang, Alexandria; and Iyengar, Akshay. (October 2017). "State's Tax Portfolios Drive Differences in Revenue Volatility: What different tax types mean for fiscal stability." The Pew Charitable Trusts. <https://www.pewtrusts.org/en/research-and-analysis/articles/2017/10/16/states-tax-portfolios-drive-differences-in-revenue-volatility>

^{xiii} Modeled as a retail sales tax based on Washington's sales tax. ECONorthwest extrapolated City of Portland estimates for the City to the Metro region based primarily on the City's share of retail sales in the tri-county region.

^{xiii} **ORS 305.620** Collection and distribution of local taxes on income and sales; costs; court review of determinations and orders; appeals. https://www.oregonlegislature.gov/bills_laws/ors/ors305.html

^{xiv} Goolsbee, Austan (May 2000). "In a World Without Borders: The Impact of Taxes on Internet Commerce." The Quarterly Journal of Economics, Volume 115, Issue 2.

^{xv} Modeled as a tax based on Ashland's food and beverage tax. ECONorthwest extrapolated City of Portland estimates for the City to the Metro region based primarily on the City's share of total sales at food and beverage establishments.

^{xvi} **ORS 305.620** Collection and distribution of local taxes on income and sales; costs; court review of determinations and orders; appeals. https://www.oregonlegislature.gov/bills_laws/ors/ors305.html

^{xvii} <https://www.bendbulletin.com/entertainment/restaurants/1457291-151/sales-tax-islands>

^{xviii} Friedman LLP. (June 16, 2016). "Challenges with Sales Tax Compliance." Insights.

A point on defining food and beverages for tax purposes: "In certain jurisdictions a bagel is itself not taxable, yet when cream cheese is spread on the bagel it becomes subject to tax. Another difficulty in identifying sales tax application is when taxable and nontaxable items are sold together - so called bundled transactions. Typically, in situations where two items, one taxable and one exempt, are bundled together, the entire transaction becomes taxable unless the taxable and nontaxable items are separately delineated on the invoice."

^{xix} Cawley, John, David Frisvold, and David Jones. (October 2019). The Impact of Sugar-Sweetened Beverage Taxes on Purchases: Evidence from Four City-Level Taxes in the U.S. The National Bureau of Economic Research, NBER Working Paper No. 26393.

¹ Nebraska: <http://www.revenue.nebraska.gov/info/1-103.pdf>; Kansas: <https://www.ksrevenue.org/pdf/pub1530.pdf>; City of Chicago: https://www.chicago.gov/city/en/depts/fin/supp_info/revenue/tax_list/tire_fee.html