Economic and Revenue Forecast Process

Presented to
Budget Officers Forum

Steve Lerch
Executive Director

October 23, 2019
Olympia, Washington
Economic and Revenue Forecast Council Organization Chart

**ERFC**
- Created in 1984 as part of Dept. of Revenue
- Became separate agency in 1990

**Office of the Governor**
- Director, OFM
- Director, DOR

**Economic and Revenue Forecast Council**
- Member, Democratic Caucus
- Member, Republican Caucus
- House of Representatives
- State Treasurer
- Member, Democratic Caucus
- Member, Republican Caucus
- Senate

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL
Revenue forecast based on multi-step statistical modeling

- **Step 1**: use modified version of IHS-Markit model of U.S. economy to produce U.S. economic forecast

- **Step 2**: use forecast values of U.S. economic measures as inputs into in-house WA economic model to produce WA economic forecast

- **Step 3**: use forecast values of WA and U.S. economic measures to forecast tax revenue

Data gathering and quality assurance checks occur prior to Steps 1, 2 & 3.

Models are updated with new data prior to each forecast.
U.S. Macro Model Overview

Model captures full simultaneity of U.S. economy
Output, employment, incomes, prices, interest rates, international trade, industrial detail, etc.
ERFC’s US economic model

- Blue Chip consensus GDP
- IHS-Markit model
- Brent & WTI futures prices

ERFC U.S. Forecast
ERFC’s Washington economic model

U.S. Economic Forecast
Other Exogenous

Wage Rates

Employment

Nonwage Income

Wage & Salary Payments

Population & Housing

Personal Income
Major taxes are broken into multiple components to account for differences in economic activity and drivers.
ERFC Forecast Process

1. Preliminary National Economic Forecast
2. Review by Work Group
3. Preliminary Washington State Economic Forecast
4. Review by Governor’s Council of Economic Advisors & Economic and Revenue Forecast Council
5. Final National and Washington Economic Forecast
6. ERFC and Revenue-Generating Agencies Create Revenue Forecasts
7. Review by Forecast Council
8. Final Washington General Fund Revenue Forecast
Why start with the U.S. economic forecast? U.S., WA economies are related in (mostly) predictable ways

- National economic policy (Federal taxes and spending, international trade) affects state businesses and residents

- Interest rates and commodity prices tend to be determined nationally and internationally

- National economic measures such as GDP, personal income and inflation tend to have a reasonably consistent relationship to state economic activity
U.S. and WA personal income track fairly closely

Source: U.S. Bureau of Economic Analysis, data through 2018
WA has a consistently higher share of employment in construction

Construction employment as % of total: U.S. & WA

Sources: ESD, ERFC, U.S. Bureau of Labor Statistics; data through 2019 Q2
Due to migration, WA population typically grows faster than U.S. – but recessions slow migration.

Population growth rates, U.S. & WA

Sources: OFM, U.S. Census Bureau; data through 2019 Q2
State personal income is major driver of tax collections

Personal income (YP) = sum of wages, salaries, self-employed income, rental income, interest income, dividends, transfer payments (Social Security, SSI, etc.)

Personal income can also be derived from population and per capita personal income:

- \( \text{YP} = \text{Population} \times \text{Per Capita YP} \)
- State personal income grows due to population growth and growth in average wages, salaries and other YP components
Negative per capita personal income growth, slower population growth led to decline in personal income in 2009.

Source: U.S. Bureau of Economic Analysis; data through 2018.
How personal income relates to major tax sources

- Retail sales tax: household purchases strongly related to income

- Business & occupations tax: based on gross business receipts (sales) which in turn are affected by household purchases and income

- Real estate excise tax: rising population increases demand for housing, resulting in more transactions and higher prices
Taxable retail trade sales and personal income: WA

Retail trade includes grocery stores, department stores, furniture stores, car dealers and online sales.

Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2
Taxable retail trade sales as percent of personal income: WA

Retail trade accounts for about 44% of all taxable sales subject to the sales tax.

Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2
Both construction labor and materials are subject to sales tax; includes remodel and repair work as well as sales of new structures.

Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2
Taxable construction sales as percent of personal income: WA

- 1.0%
- 1.2%
- 1.4%
- 1.6%
- 1.8%
- 2.0%
- 2.2%
- 2.4%


Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2
Other selected revenue forecast drivers

Employment
- Impacts level of personal income, in turn affecting many tax sources

Interest rates
- Impact cost of residential and commercial real estate and other major purchases, affecting sales tax and real estate excise tax

Oil and gasoline prices
- Impact B&O taxes paid by oil refineries, gasoline stations
Questions

Economic & Revenue Forecast Council
PO BOX 40912
Olympia WA 98504-0912

www.erfc.wa.gov
360-534-1560