Economic and Revenue Forecast Process

Presented to
Budget Officers Forum

Steve Lerch

Executive Director

October 23, 2019

Olympia, Washington
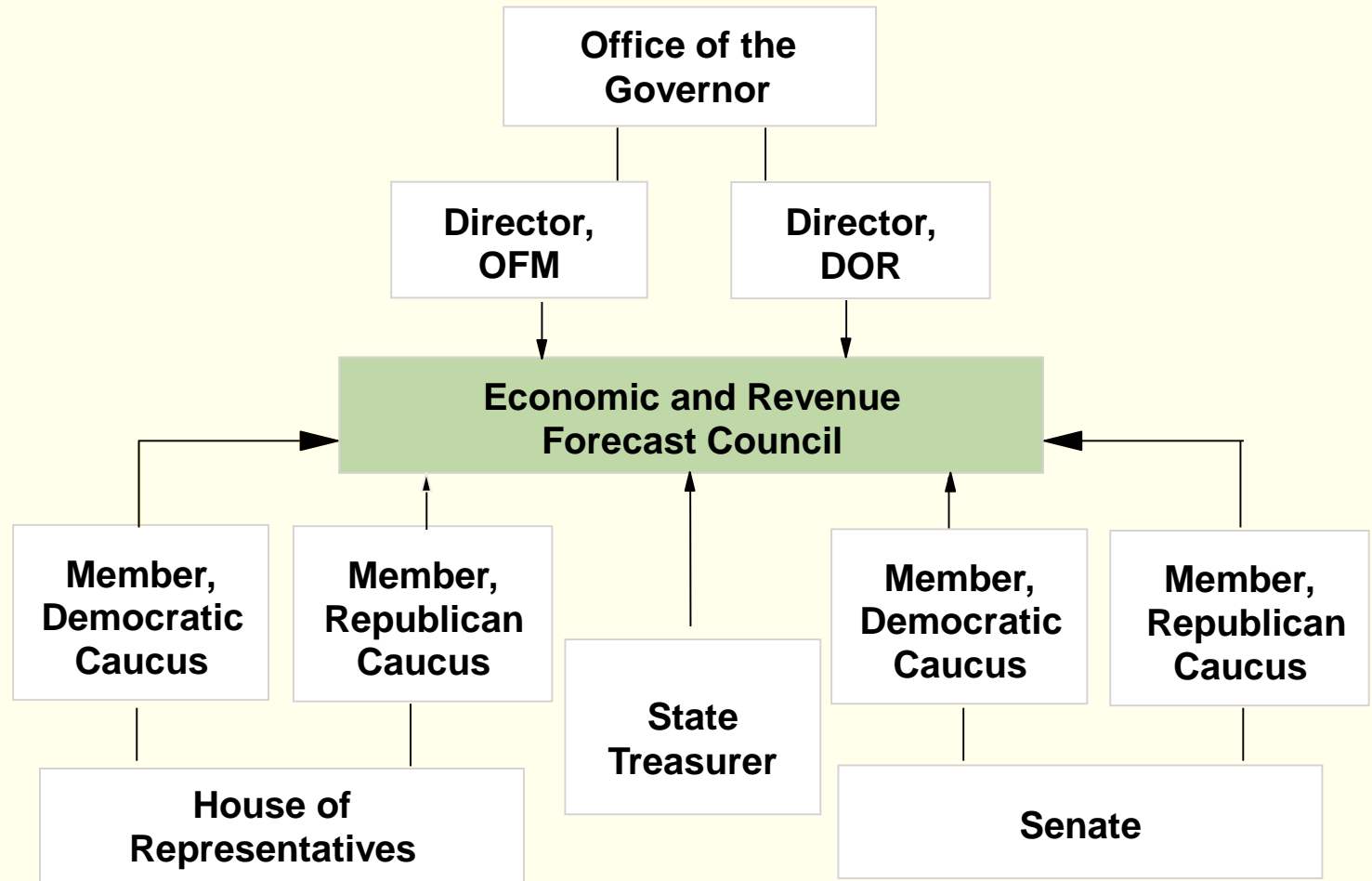
WASHINGTON STATE
ECONOMIC AND REVENUE FORECAST COUNCIL

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

State Treasurer

Member, Democratic Caucus

Member, Republican Caucus

House of Representatives

Senate

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

Revenue forecast based on multi-step statistical modeling

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

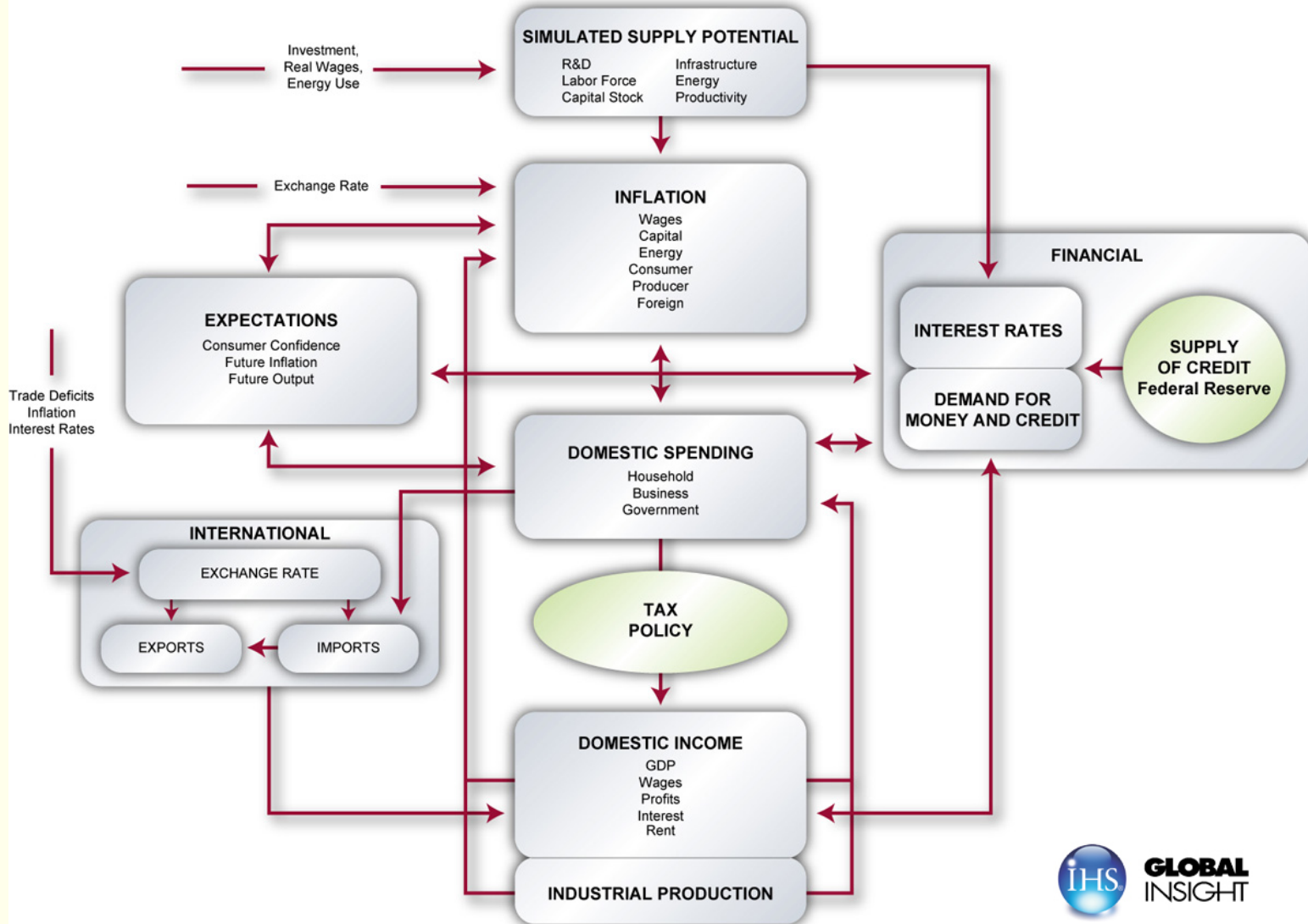Models are updated with new data prior to each forecast.

- 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

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL
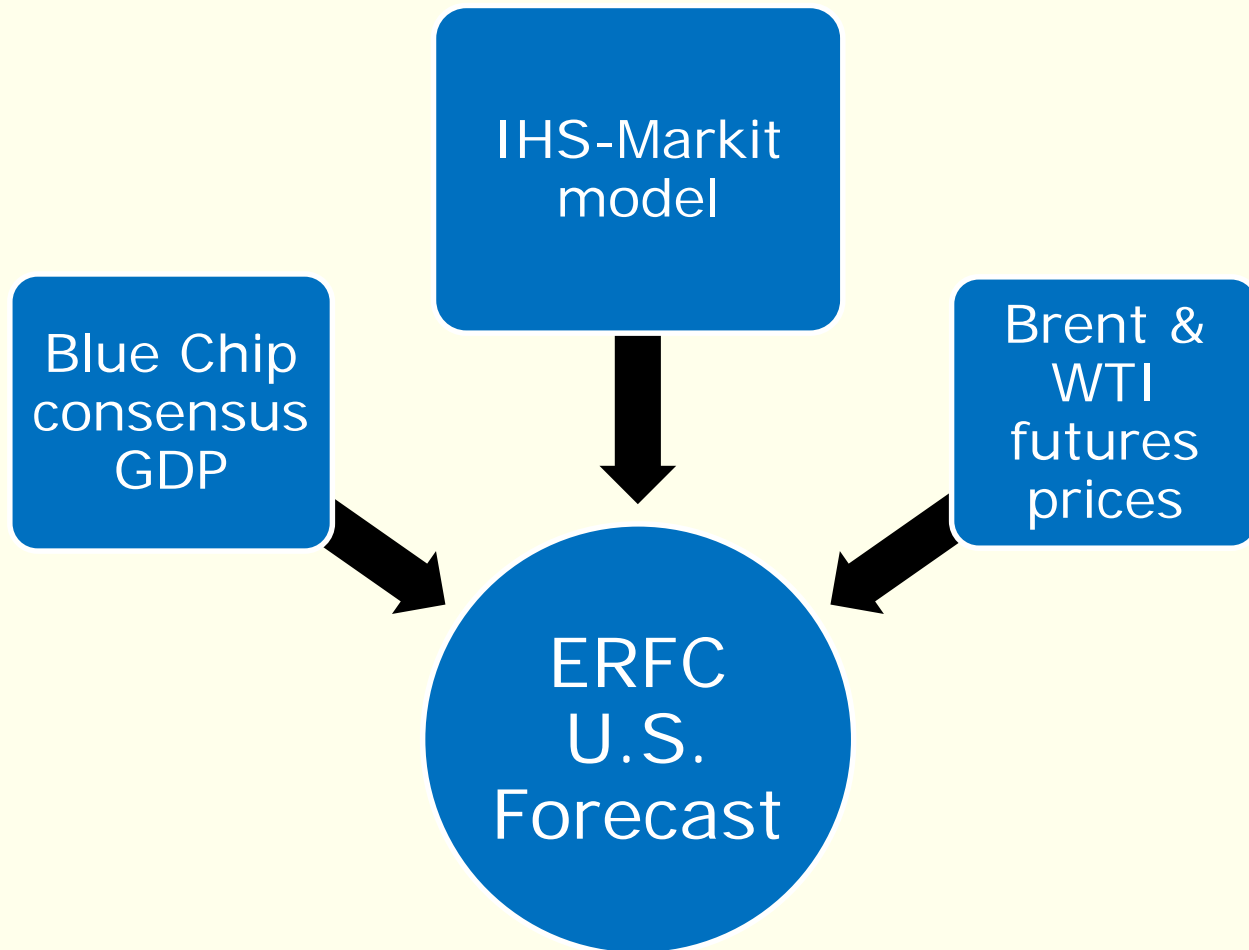
U.S. Macro Model Overview

Model captures full simultaneity of U.S. economy

Output, employment, incomes, prices, interest rates, international trade, industrial detail, etc.
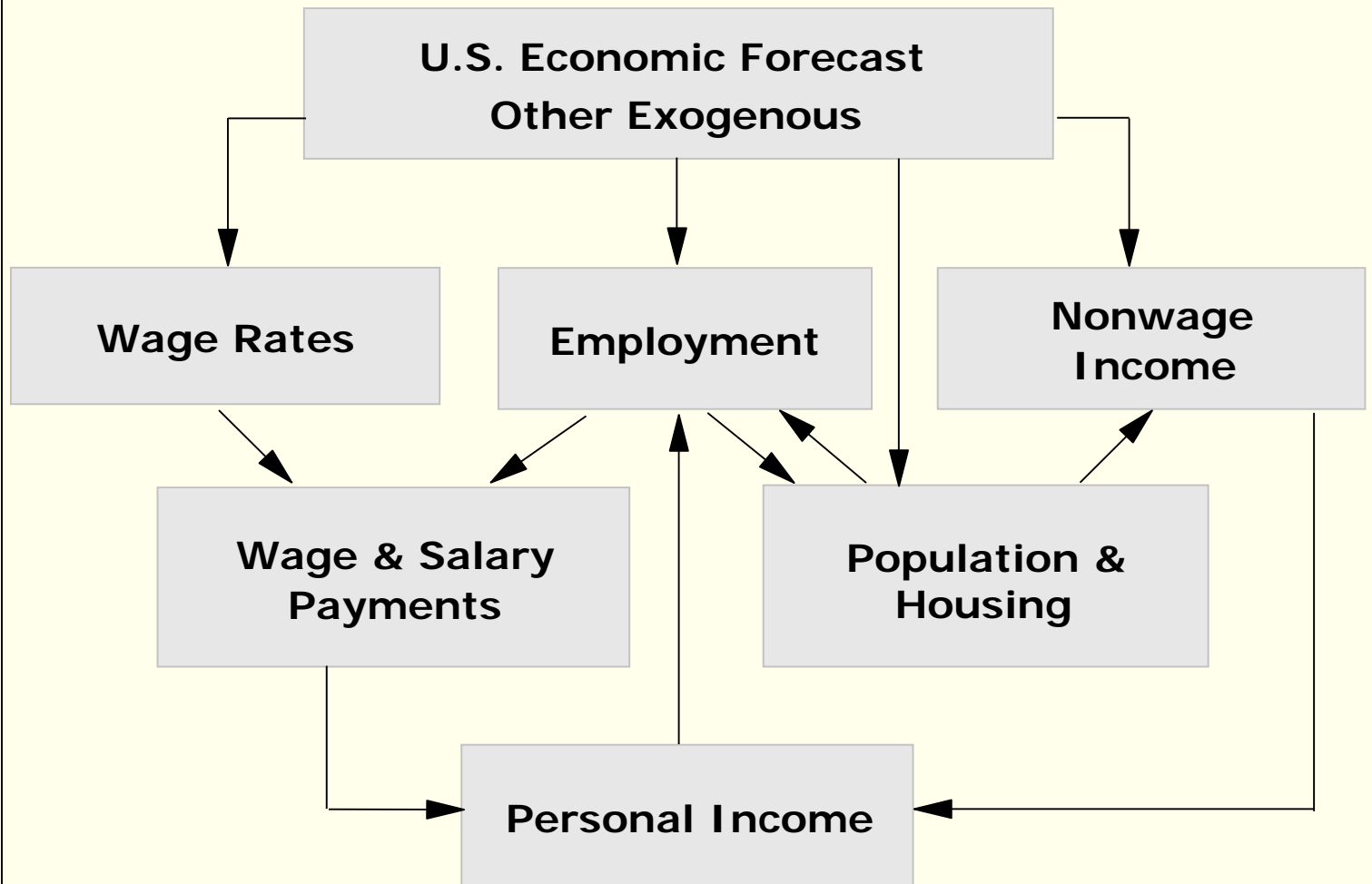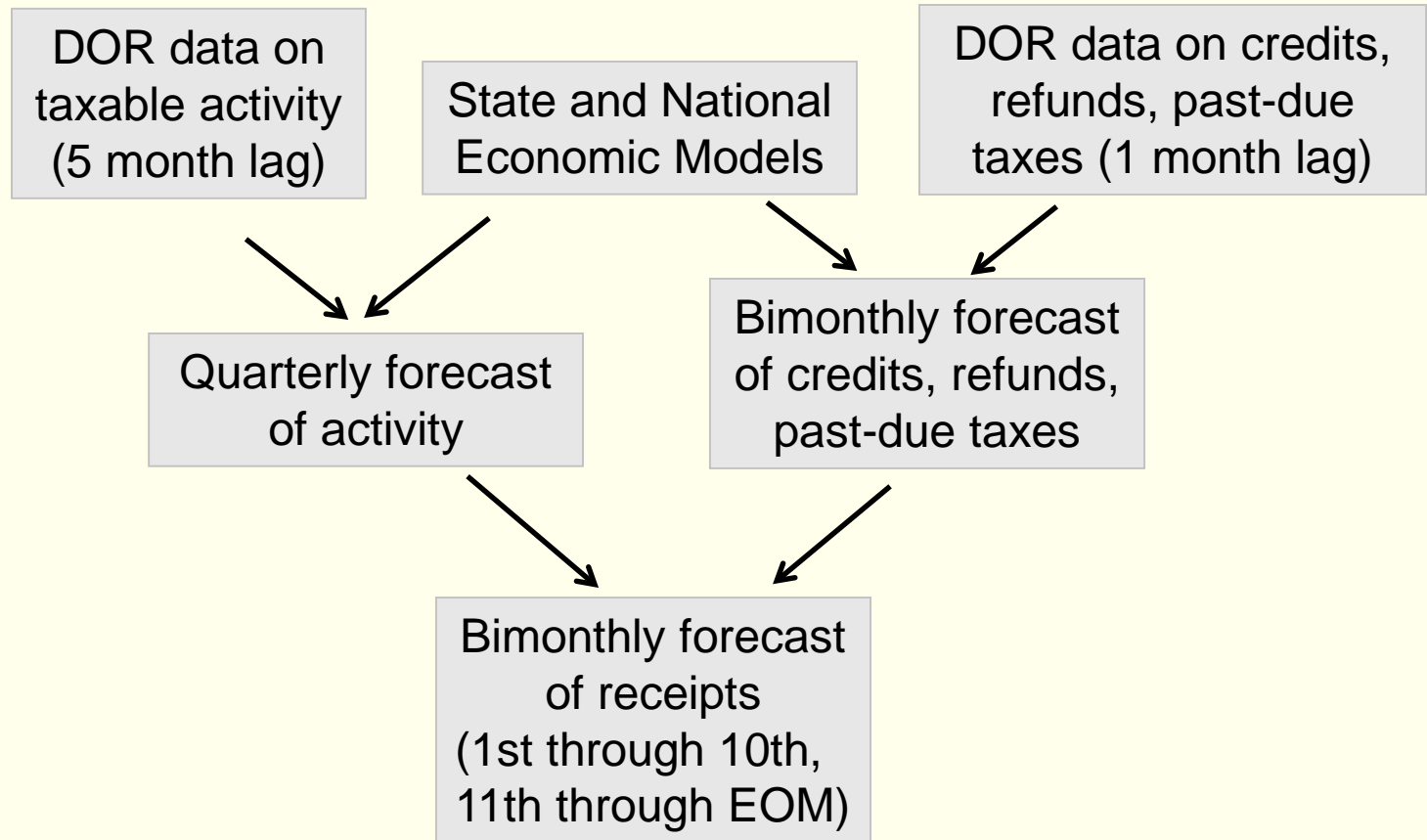
Economic & Revenue Forecast Process

October 23, 2019

ERFC's US economic model

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

ERFC's Washington economic model

U.S. Economic Forecast / Other Exogenous → Wage Rates, Employment, Nonwage Income; Wage Rates → Wage & Salary Payments; Employment → Wage & Salary Payments, Population & Housing; Population & Housing ↔ Employment; U.S. Economic Forecast → Population & Housing; Nonwage Income → Population & Housing; Wage & Salary Payments → Personal Income; Employment → Personal Income; Nonwage Income → Personal Income

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

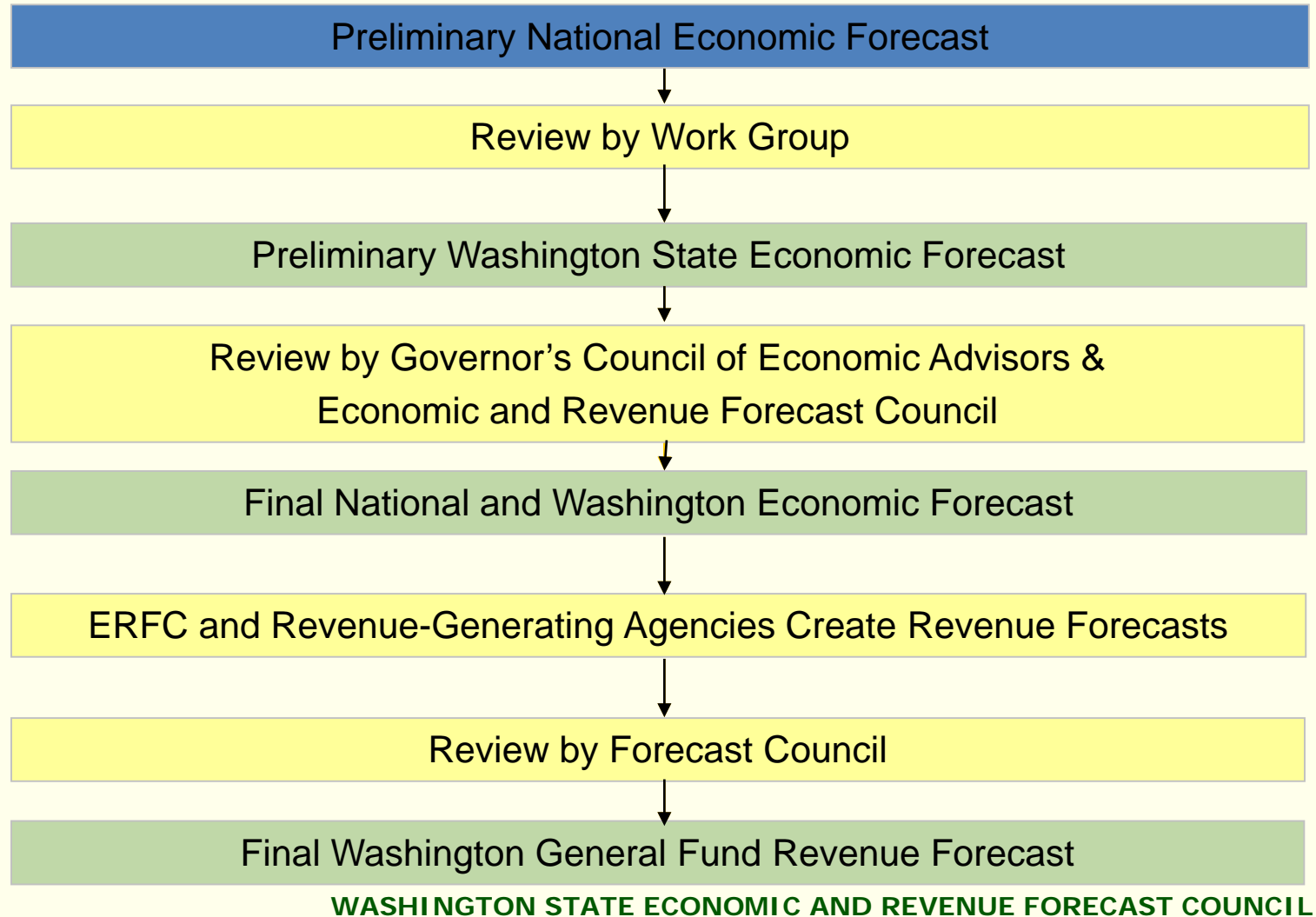# Revenue Act model overview

Major taxes are broken into multiple components to account for differences in economic activity and drivers.

DOR data on taxable activity (5 month lag)

State and National Economic Models

DOR data on credits, refunds, past-due taxes (1 month lag)

Quarterly forecast of activity

Bimonthly forecast of credits, refunds, past-due taxes

Bimonthly forecast of receipts (1st through 10th, 11th through EOM)

ERFC Forecast Process

Preliminary National Economic Forecast

↓

Review by Work Group

↓

Preliminary Washington State Economic Forecast

↓

Review by Governor's Council of Economic Advisors & Economic and Revenue Forecast Council

↓

Final National and Washington Economic Forecast

↓

ERFC and Revenue-Generating Agencies Create Revenue Forecasts

↓

Review by Forecast Council

↓

Final Washington General Fund Revenue Forecast

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

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

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

U.S. and WA personal income track fairly closely
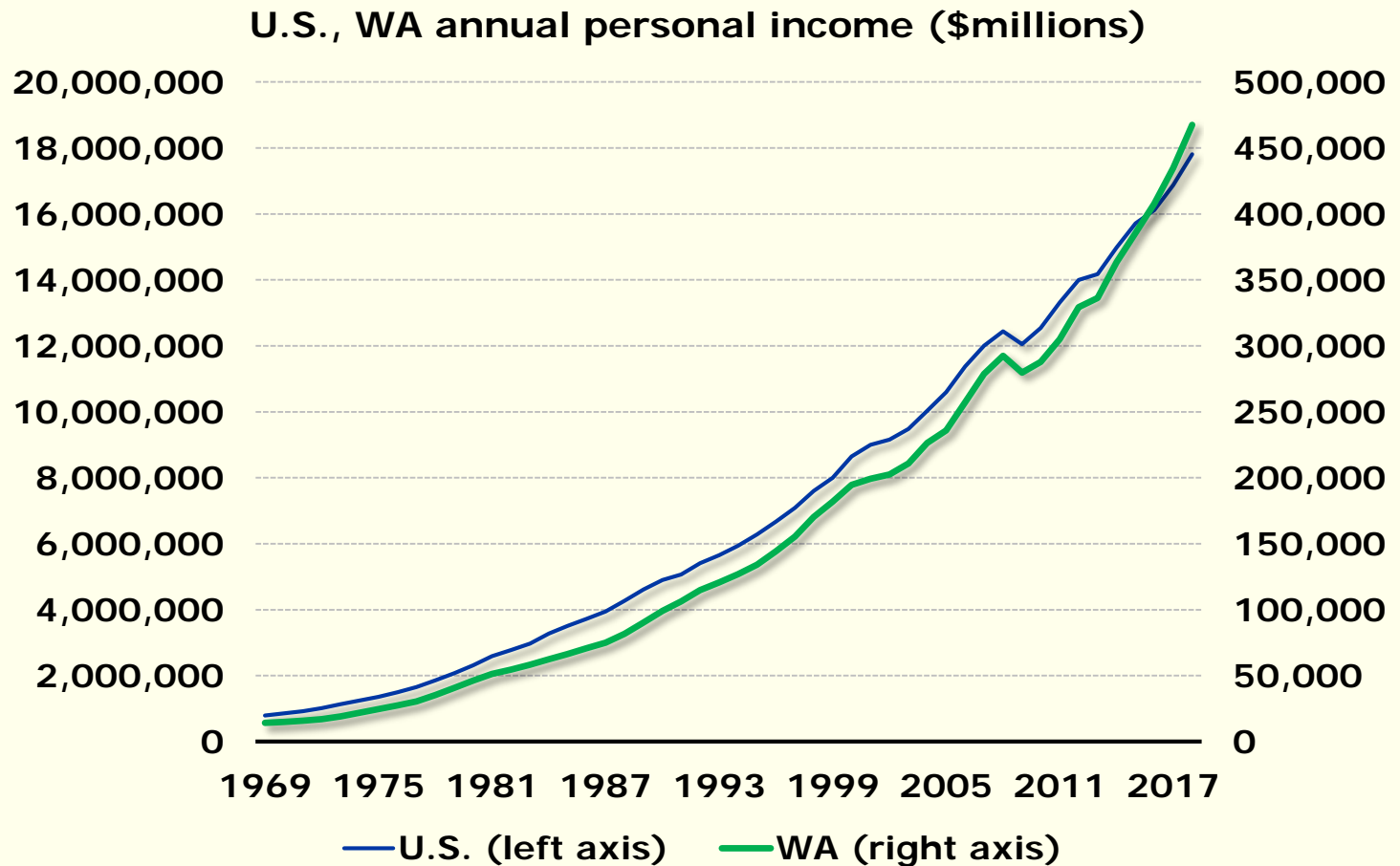
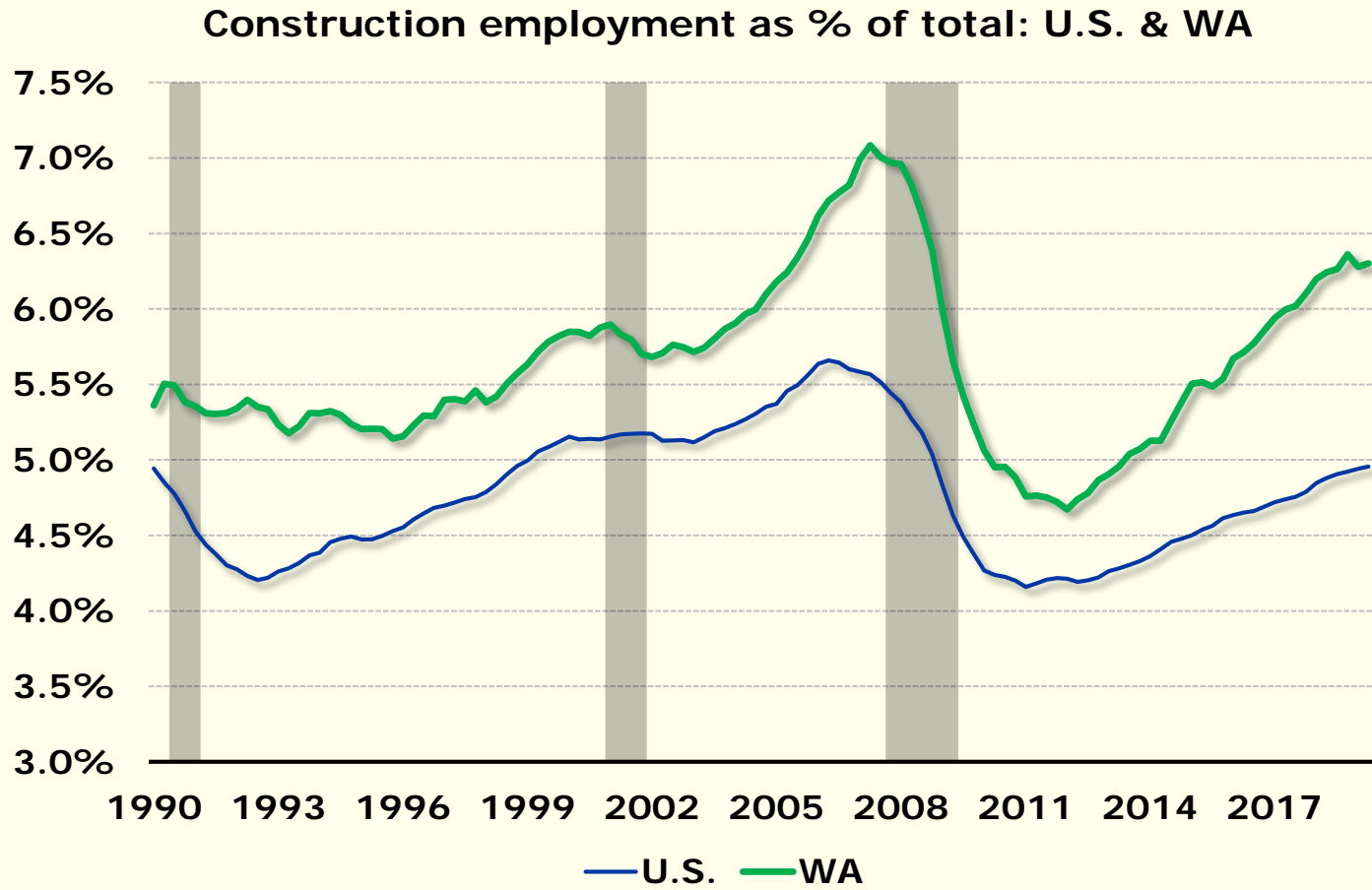**U.S., WA annual personal income ($millions)**

Source: U.S. Bureau of Economic Analysis, data through 2018

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

WA has a consistently higher share of employment in construction

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

Economic & Revenue Forecast Process

October 23, 2019

Slide 10

Sources: ESD, ERFC, U.S. Bureau of Labor Statistics; data through 2019 Q2

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

Due to migration, WA population typically grows faster than U.S. – but recessions slow migration

Population growth rates, U.S. & WA
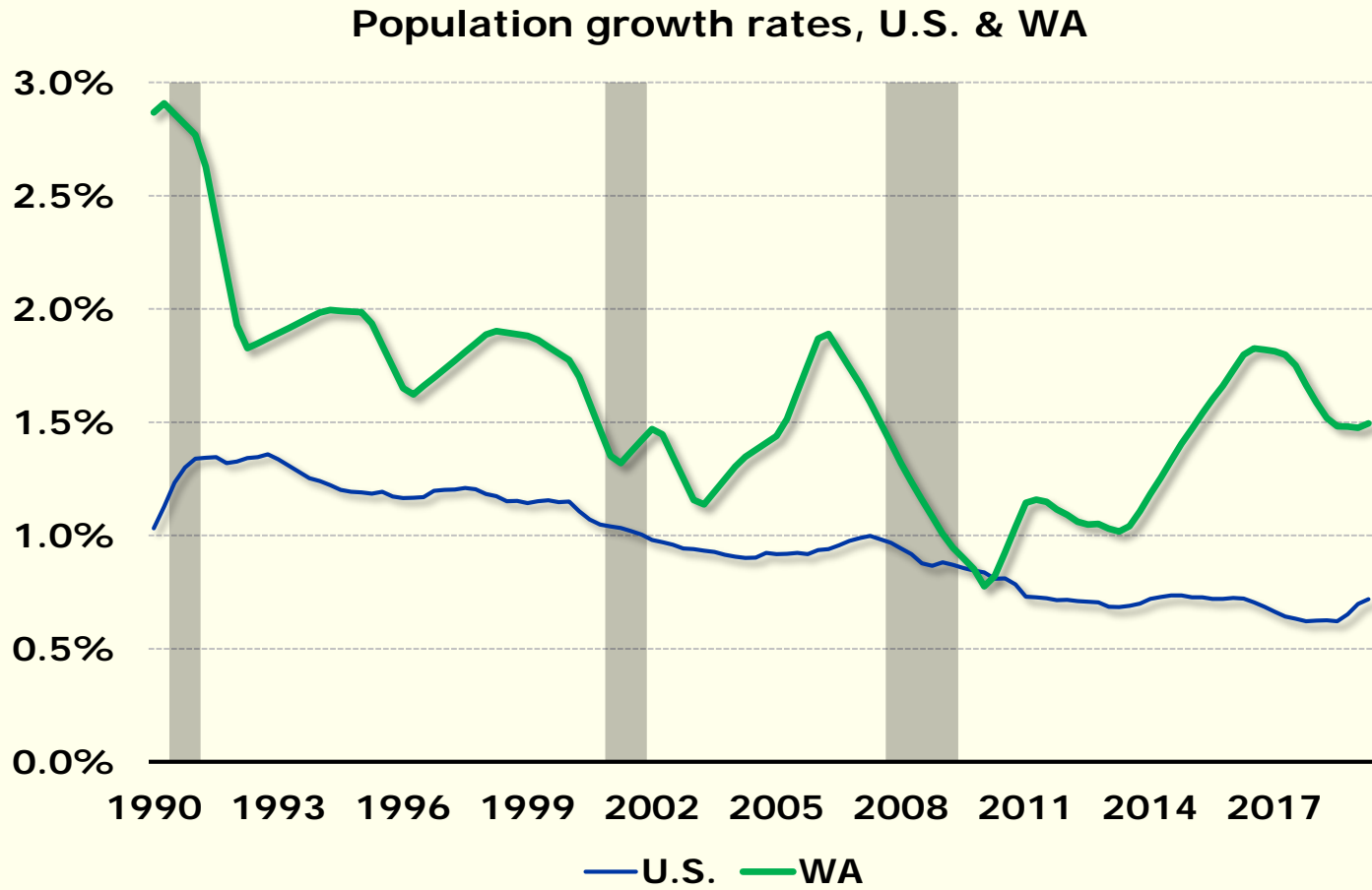
Sources: OFM, U.S. Census Bureau; data through 2019 Q2

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

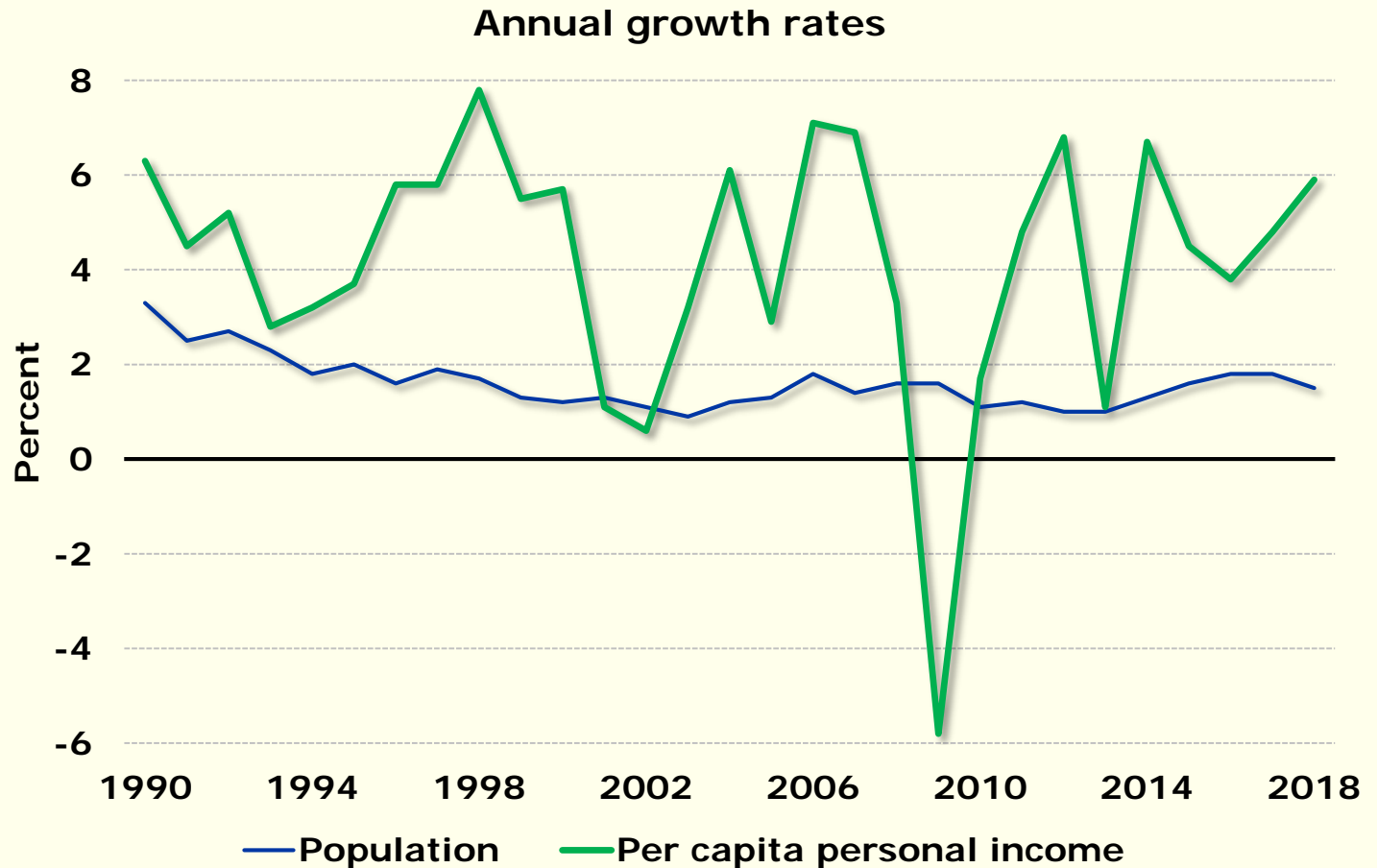# State personal income is major driver of tax collections

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:

➢ YP = Population * 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

Annual growth rates

Source: U.S. Bureau of Economic Analysis; data through 2018

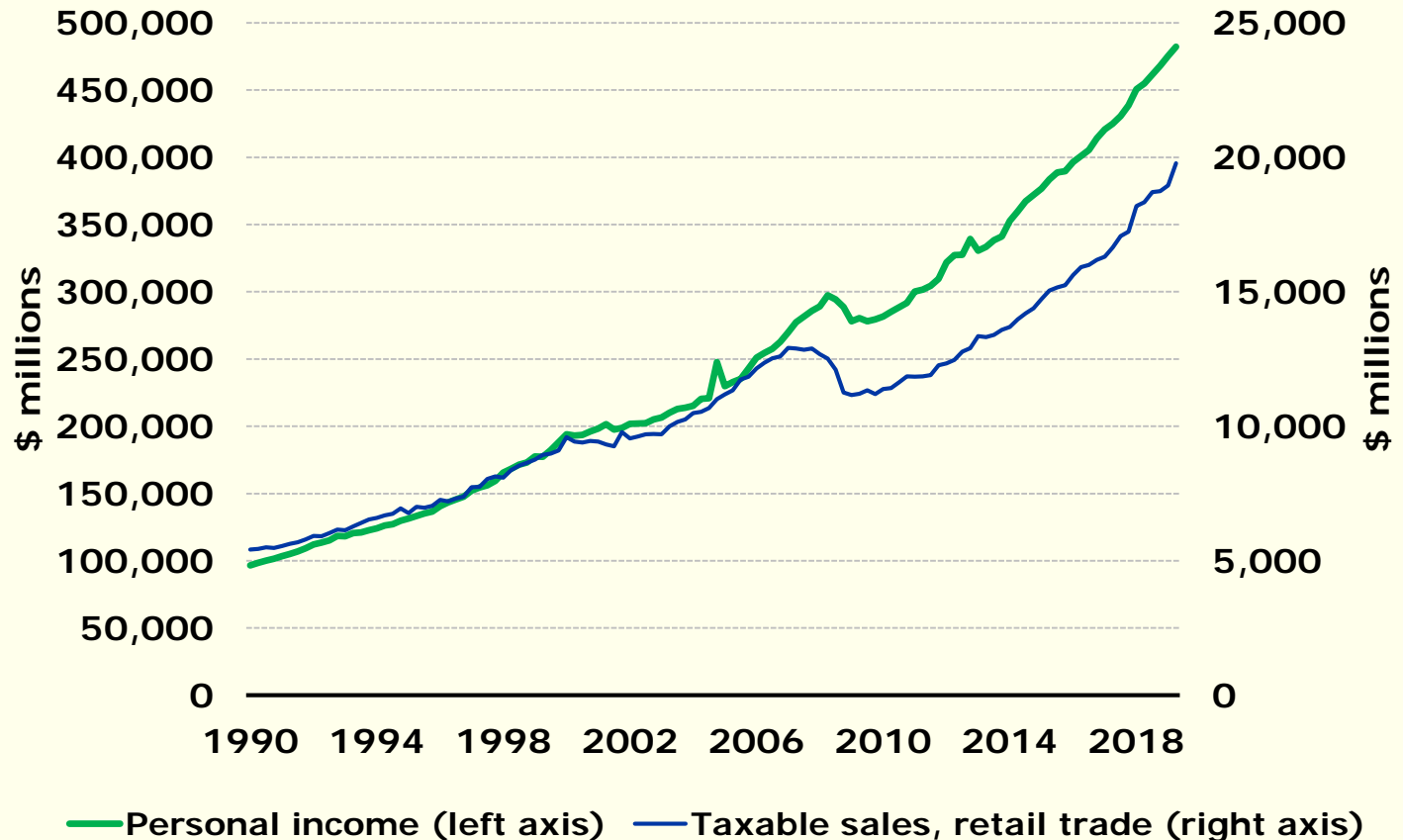**WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL**

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
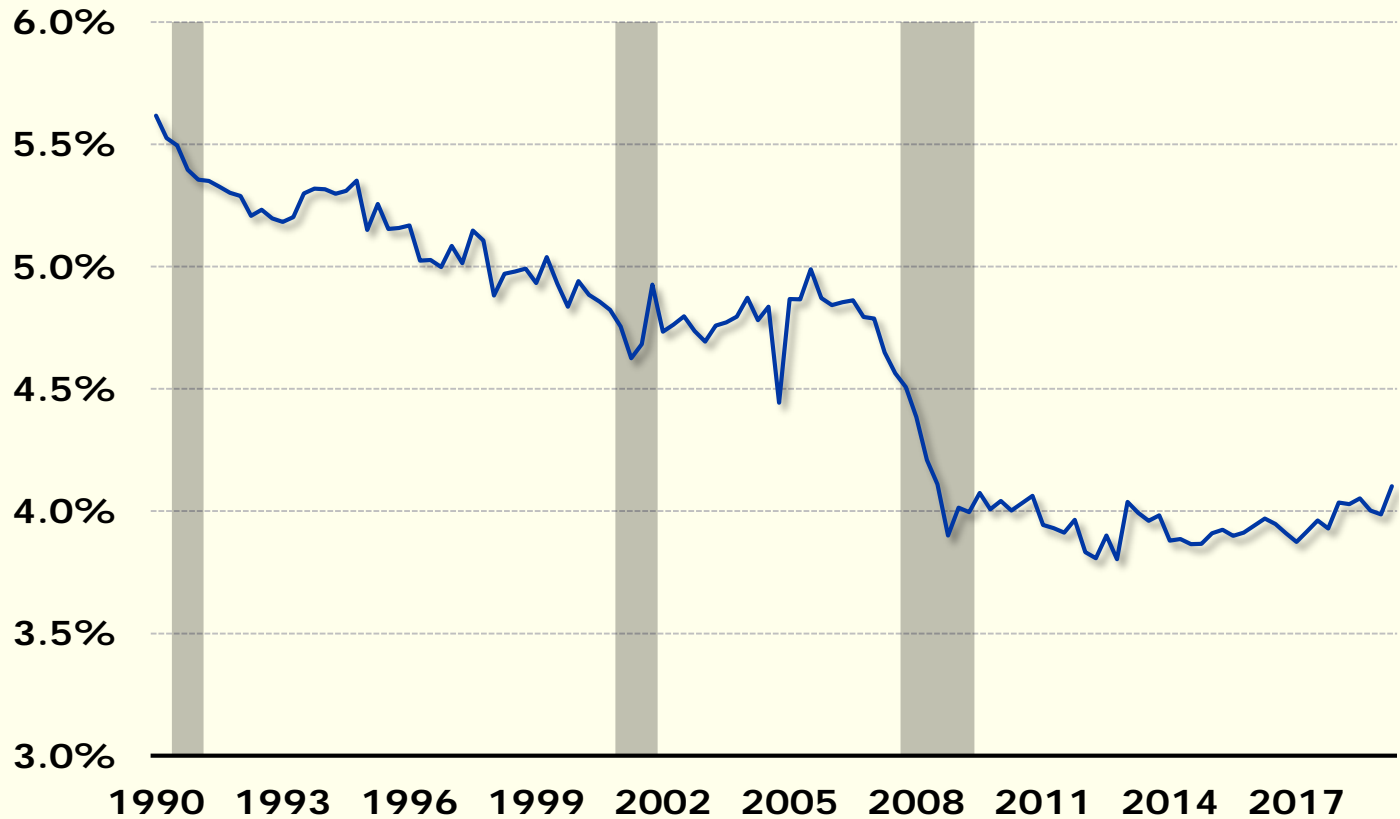
WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

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
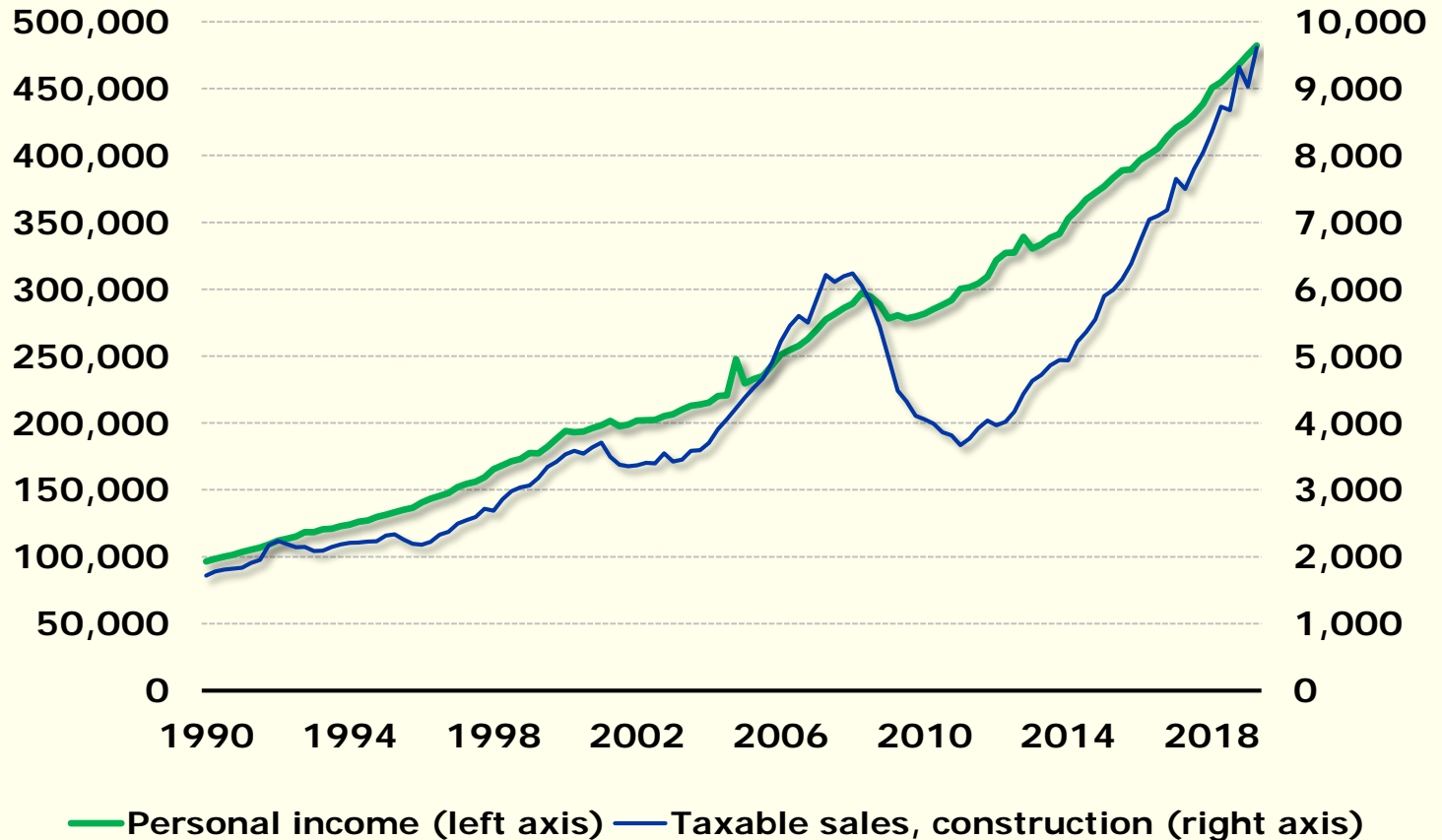
Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

Taxable construction sales and personal income: WA

Both construction labor and materials are subject to sales tax; includes remodel and repair work as well as sales of new structures.

Personal income (left axis) — Taxable sales, construction (right axis)

Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

Taxable construction sales as percent of personal income: WA

Source: DOR, ERFC, U.S. Bureau of Economic Analysis; data through 2019 Q2

Economic & Revenue Forecast Process

October 23, 2019

Slide 18

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL
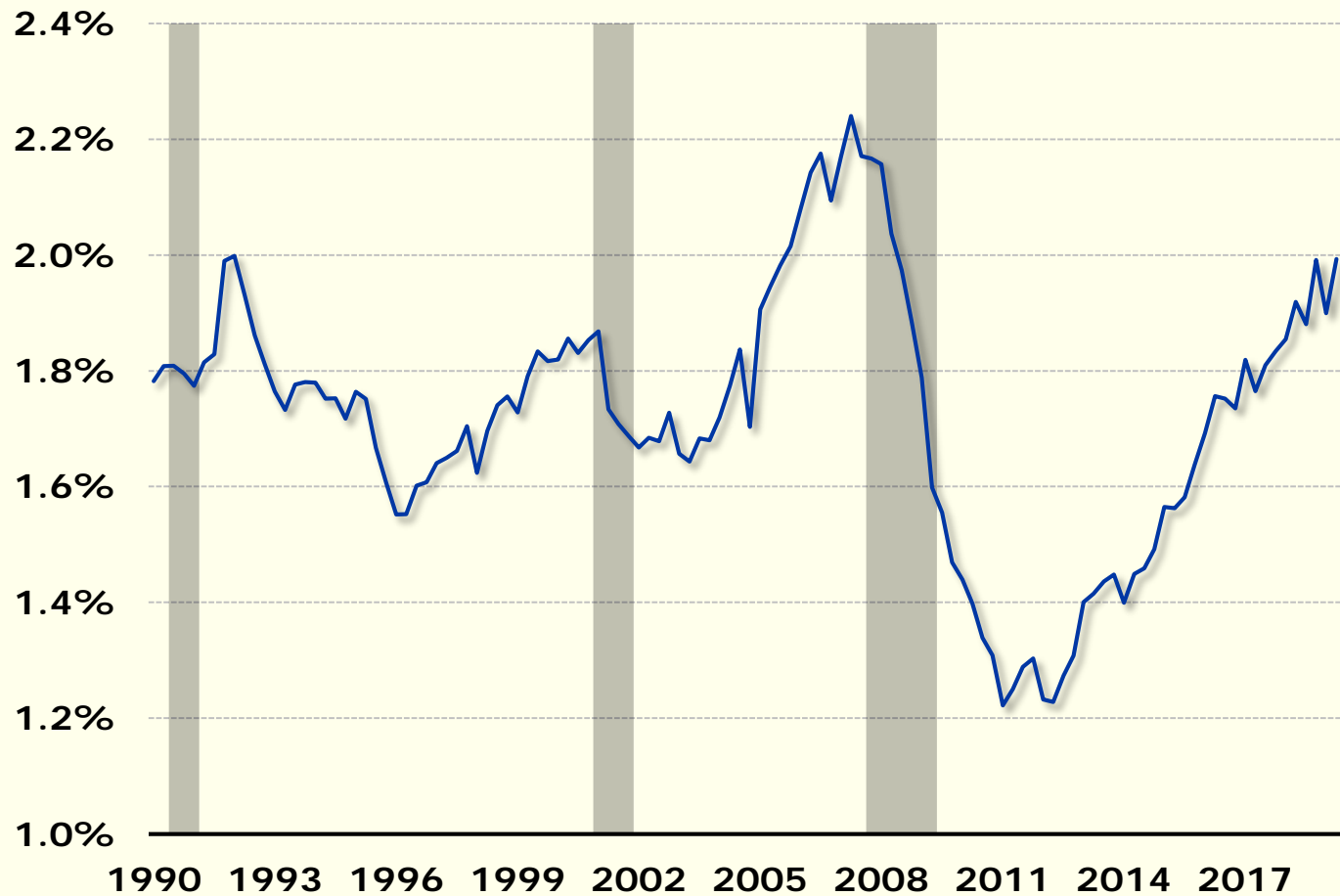
Other selected revenue forecast drivers

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

WASHINGTON STATE ECONOMIC AND REVENUE FORECAST COUNCIL

Questions

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

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