



*"Working together to
fund Washington's future"*

Corporate Income/Net Receipts Tax Macro Model

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Presentation Preview



Assignment

Estimate Revenue Impacts of Corporate Income/Net Receipts Tax

We are analyzing certain proposals to replace existing taxes with a corporate income/net receipts tax.

In this presentation we describe a macro model (the Corporate Macro Model) to estimate the potential revenue impacts of Washington implementing a corporate income/net receipts tax.

Assignment

Gates Study Proposals Involving Corporate Tax

The Gates study (2002) identified Proposals A and B below as achieving revenue neutrality in calendar year 2005.

Proposal A	Proposal B
<ul style="list-style-type: none"> Reduce state retail sales/use tax from 6.5% to 3.5% 	<ul style="list-style-type: none"> Reduce state retail sales/use tax from 6.5% to 3.5%
<ul style="list-style-type: none"> Eliminate state Business and Occupation (B&O) tax 	<ul style="list-style-type: none"> Eliminate state B&O tax
<ul style="list-style-type: none"> Eliminate state property tax levy 	
<ul style="list-style-type: none"> Replace revenues with flat 5.0% personal/corporate income tax 	<ul style="list-style-type: none"> Replace revenues with flat 3.8% personal/corporate income tax

- **How much revenue would these proposals raise in 2017-19 fiscal biennium?**
- **What tax rates would achieve revenue neutrality in 2017-19 fiscal biennium?**

Assignment

Gates Study Proposals: Conformity to Federal Tax Code

The Gates study (2002) proposal states:

“The corporate net income tax would be based on federal taxable income as defined in the [Internal Revenue Code]. Thus it would implicitly adopt all of the deductions as allowed under the federal corporate net income tax.”

Assignment

House Report Proposal Involving Corporate Tax

The House report (2018)¹ proposed eliminating Washington's B&O tax and replacing it with an alternative tax, such as a corporate income tax.

Estimate the impact on taxpayers.

- What corporate income tax rate would achieve revenue neutrality in 2017-19 fiscal biennium?

Proposal C

- Eliminate state B&O tax
- Replace revenues with corporate income tax

1: Washington State Legislature (2018): *House Tax Structure Work Group Final Report*.

Background

The U.S. Corporate Income Tax

The U.S. corporate income tax is a tax on business profits of U.S. resident corporations.

Prior to 2018, several features of the U.S. federal corporate income tax set it apart from most of the rest of the world.

- High statutory tax rate of 35%
- The U.S. had a “worldwide” system

In December 2017, the Tax Cuts and Jobs Act (TCJA) was passed and went into effect January 2018.

Background

Tax Equations: 2017

We assume, following Gates (2002), that the Washington corporate income/net receipts tax will be based on federal taxable income.

A few basic tax equations show Washington tax due under corporate income/net receipts tax, circa 2017:*

$$(1) \text{TaxDue}_{US} = 35\% \times \text{Taxable}_{US} - \text{TotalCredits}_{US} + \text{AMT}_{US}$$

$$(2) \text{Taxable}_{US} = [\text{TaxDue}_{US} + \text{TotalCredits}_{US} - \text{AMT}_{US}] / 35\%$$

$$(3) \text{TaxDue}_{Wa} = \text{TaxRate}_{Wa} \times \text{Apport\%}_{Wa} \times \text{Taxable}_{US}$$

* Note, Taxable_{US} is total income less deductions.

* These equations ignore timing differences and non-compliance.

Background

Tax Equations: 2018-

$$(1) \text{TaxDue}_{US} = 21\% \times \text{Taxable}_{US} - \text{TotalCredits}_{US} + \text{BEAT}_{US}$$

$$(2) \text{Taxable}_{US} = [\text{TaxDue}_{US} + \text{TotalCredits}_{US} - \text{AMT}_{US}] / 21\%$$

$$(3) \text{TaxDue}_{Wa} = \text{TaxRate}_{Wa} \times \text{Apport\%}_{Wa} \times \text{Taxable}_{US}$$

These equations provide the basic framework for our Corporate Macro Model methodology.

BEAT: Base Erosion Anti-Abuse Tax

Background (IRS Form 1120, Page 1)

Income	1a Gross receipts or sales	Tax, Refundable Credits, and Payments	30 Taxable income. Subtract line 29c from line 28. See instructions
	b Returns and allowances		31 Total tax (Schedule J, Part I, line 11)
	c Balance. Subtract line 1b from line 1a		32 2019 net 965 tax liability paid (Schedule J, Part II, line 12)
	2 Cost of goods sold (attach Form 1125-A)		33 Total payments, credits, and section 965 net tax liability (Schedule J, Part III, line 13)
	3 Gross profit. Subtract line 2 from line 1c		34 Estimated tax penalty. See instructions. Check if Form 2220 is attached
	4 Dividends and inclusions (Schedule C, line 23)		35 Amount owed. If line 33 is smaller than the total of lines 31, 32, and 34, enter the difference here
5 Interest	36 Overpayment. If line 33 is larger than the total of lines 31, 32, and 34, enter the difference here		
6 Gross rents			

[7-9: More Income Items]

	10 Other income (see instructions—attach statement)
	11 Total income. Add lines 3 through 10
Deductions (See instructions.)	12 Compensation of officers (see instructions—attach statement)
	13 Salaries and wages (less employment credits)
	14 Repairs and maintenance

[15-25: More Deductions]

Deductions (See instructions.)	26 Other deductions (attach statement)
	27 Total deductions. Add lines 12 through 26
	28 Taxable income before net operating loss deduction
	29a Net operating loss deduction (see instructions)
	b Special deductions (Schedule C, line 24)
	c Add lines 29a and 29b

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Background

Ten Steps

1. Gather federal tax collections data through U.S. Fiscal 2019.
2. Adjust for timing differences between U.S. and Washington fiscal years.
3. Estimate and add-back federal tax credits (less minimum tax), including effects of Tax Cuts and Jobs Acts (TCJA) provisions.
4. Divide by federal tax rate to estimate federal taxable income.
5. Estimate federal taxable income apportionable to Washington (unadjusted estimate).
6. Adjust apportionment to account for large companies and industries.
7. Apply tax rates from proposals to determine Washington corporate income/net receipts tax revenues (or back out rates based on revenues).
8. Adjust for lags in Washington tax payments.
9. Forecast future Washington tax payments.
10. Validate model and report results.

Assumptions

Assumptions Underlying Corporate Macro Model

1. Conformity to federal definition of taxable income.
2. Tax applies to C-corporations only.
3. Single-factor (sales) apportionment.
4. No Washington tax credits, deductions, minimum tax.
5. Allocate federal taxable income, deductions, and credits between quarters based on quarterly corporate profits.
6. Corporations pay Washington quarterly estimated tax payments quarterly, following Oregon and Idaho schedule. E.g.,:

Estimated Tax Payments of December 31 Fiscal Year End Company:

- Q1: April 15
 - Q2: June 15
 - Q3: September 15
 - Q4: December 15
-

Data

Data Sources Include:

Federal Tax Collections

- Internal Revenue Service (IRS) aggregate data, including Statistics of Income (SOI)
- U.S. Department of Treasury Press Release, November 2019

Federal Tax Credits and Deductions (Pre-TCJA)

- IRS SOI data
- IRS microdata for Washington federal corporate income taxpayers

Impact of TCJA on Tax Credits and Deductions

- Joint Committee on Taxation (JCT) (2017)
 - Congressional Budget Office (CBO)
-

Data

Data Sources Include:

Apportionment

- Bureau of Labor Statistics, Personal Consumption Expenditures
- IMPLAN Input-Output Data
- U.S. Census of Governments
- U.S. Department of Treasury

Apportionment Adjustments

- Securities and Exchange Commission, Form 10-K (SEC 10-K)
- IMPLAN Input-Output Data
- Washington State Department of Revenue Excise Tax Data

Forecasts

- Bureau of Economic Analysis (BEA), Before Tax Corporate Profits
 - Economic and Revenue Forecast Council, Washington Personal Income
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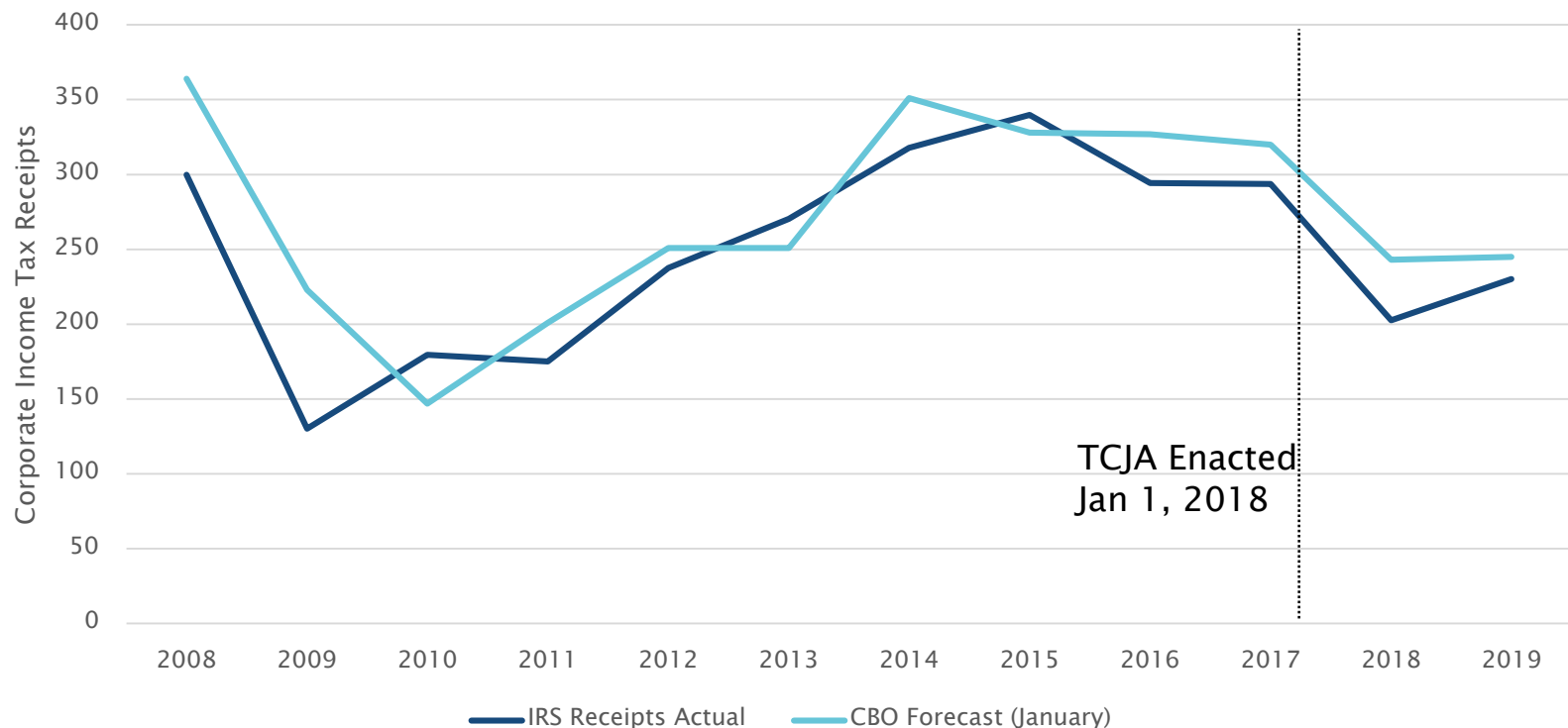
Step 1: Gather Federal Tax Collections Data

Step 1

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Step 1: Gather Federal Tax Collections Data

IRS Corporate Income Tax Collections vs. Forecasts, U.S. Fiscal 2008-2019 (\$ Billions)*



- * **Sources:**
- IRS SOI, Corporation Income Tax, 2008-18
 - U.S. Treasury Department Press Release Press Release: 2019
 - CBO: The Budget and Economic Outlook (2008-19)

Step 1: Gather Federal Tax Collections Data

Technical Advisory Group Question 2

We observe that federal corporate income tax collections fell short of their January forecasts in each of the previous four tax years (2016 – 2019). We welcome any insights about any underlying cause for this, especially given solid corporate profits during the period.

Step 2: Alignment of Fiscal Years

Step 2

1. Gather federal tax collections data through U.S. Fiscal 2019.
2. **Adjust for timing differences between U.S. and Washington fiscal years.**
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Step 2: Alignment of Fiscal Years

Reported annual federal corporate income tax receipts are based on U.S. fiscal years ending September 30.

This creates some alignment issues relative to Washington fiscal years ending June 30.

We will allocate annual federal taxable income between quarters assuming the quarterly growth rate of before-tax corporate profits.

We will also allocate the effects of TCJA provisions between quarters in a similar way.

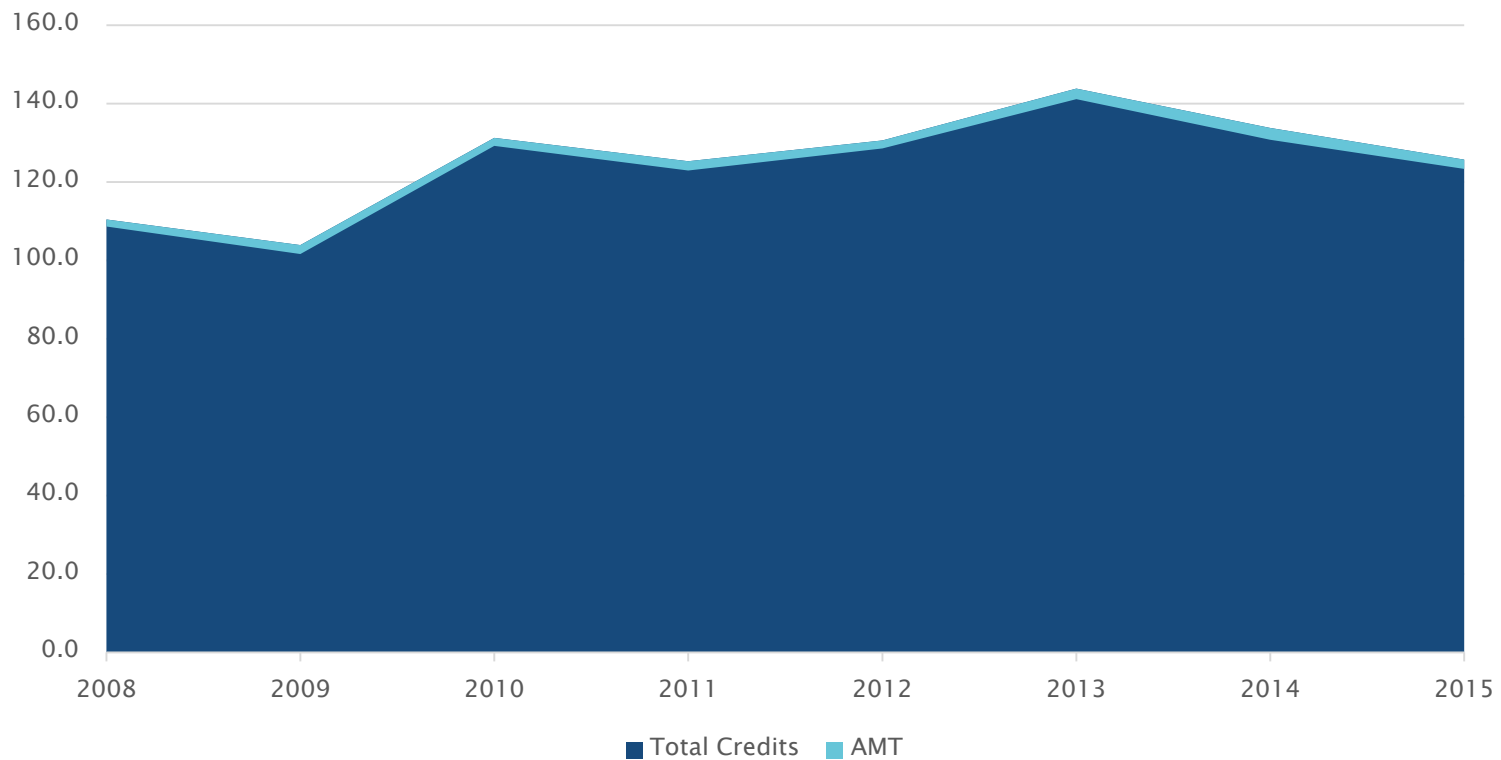
Step 3: Add Back Federal Tax Credits

Step 3

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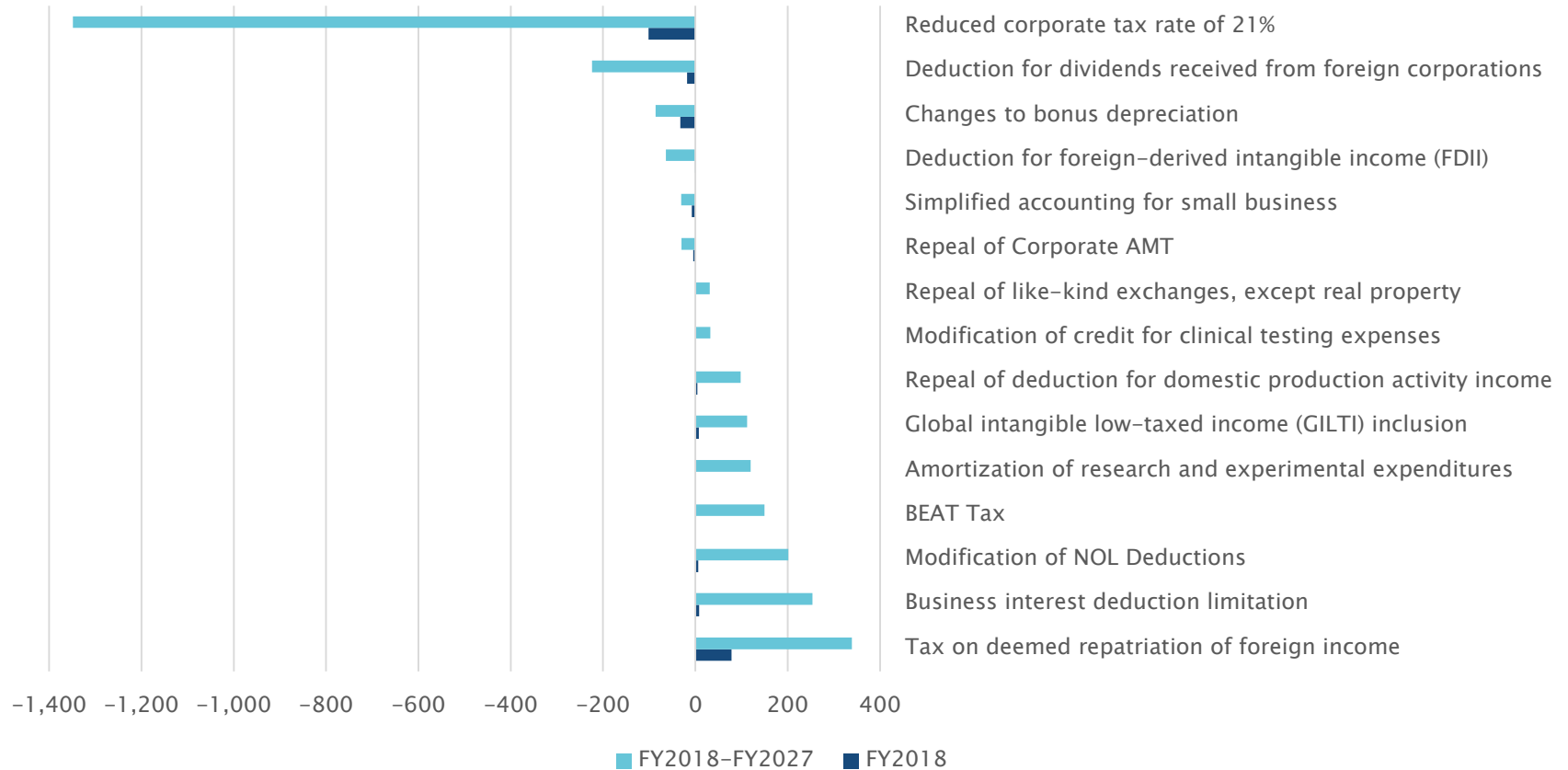
Federal Corporate Income Tax Credits (Less AMT), U.S. Fiscal 2008-2015 (\$ Billions)*



* **Source:** IRS SOI, Corporation Income Tax (Line Item Estimates), 2008-15

Step 3: Add Back Federal Tax Credits

Forecasted Budget Impacts of TCJA Provisions (\$ Billions)*



* **Source:** JCT, *Estimated Budget Effects of the Conference Agreement for H.R. 1, the 'Tax Cuts and Jobs Act,* December 2017.

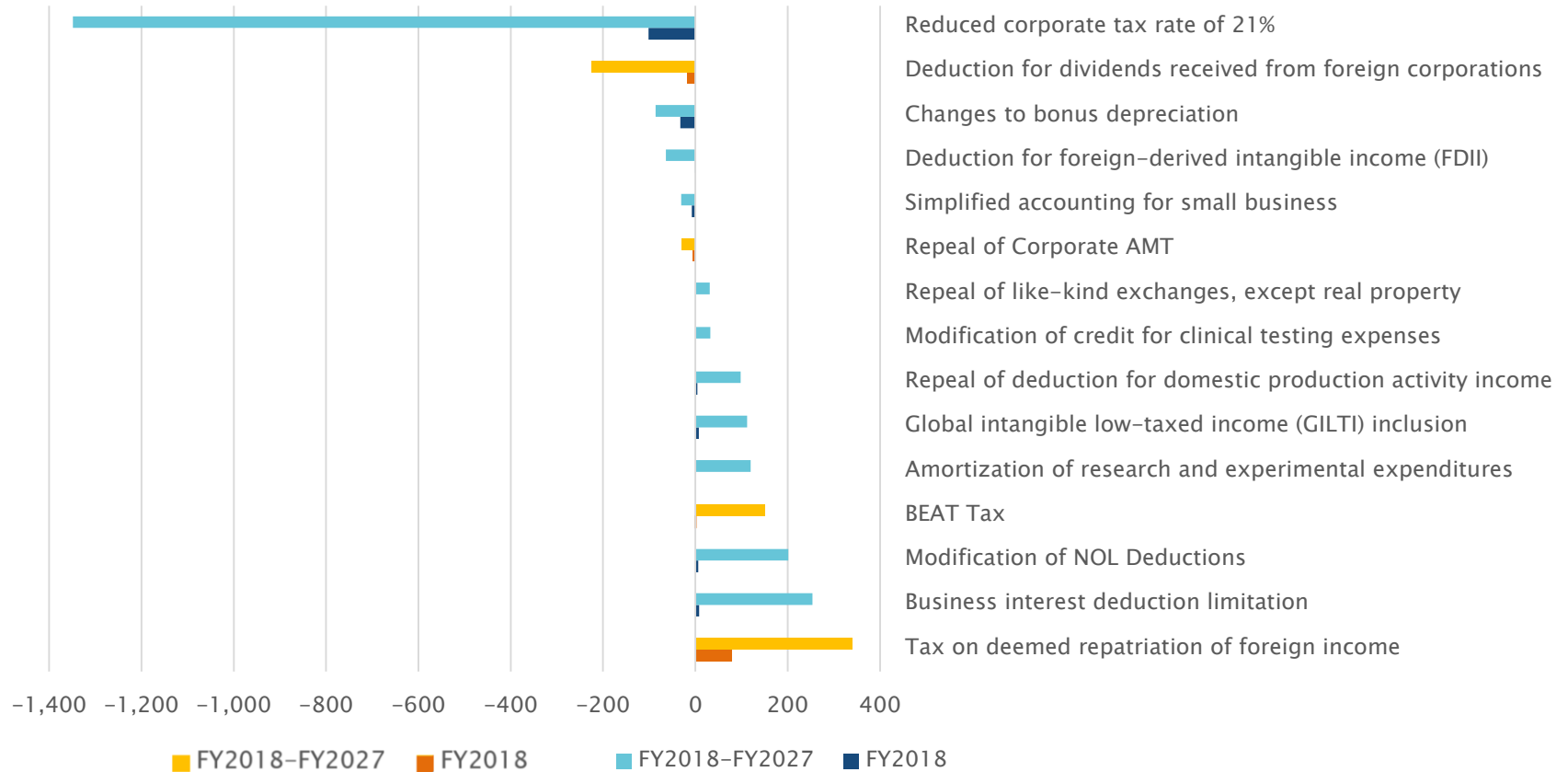
Step 3: Add Back Federal Tax Credits

Technical Advisory Group Question 3

We welcome suggestions on recent (2018 or later) resources/research on the federal revenue impacts of TCJA corporate tax provisions (either individual provisions or collectively).

Step 3: Add Back Federal Tax Credits

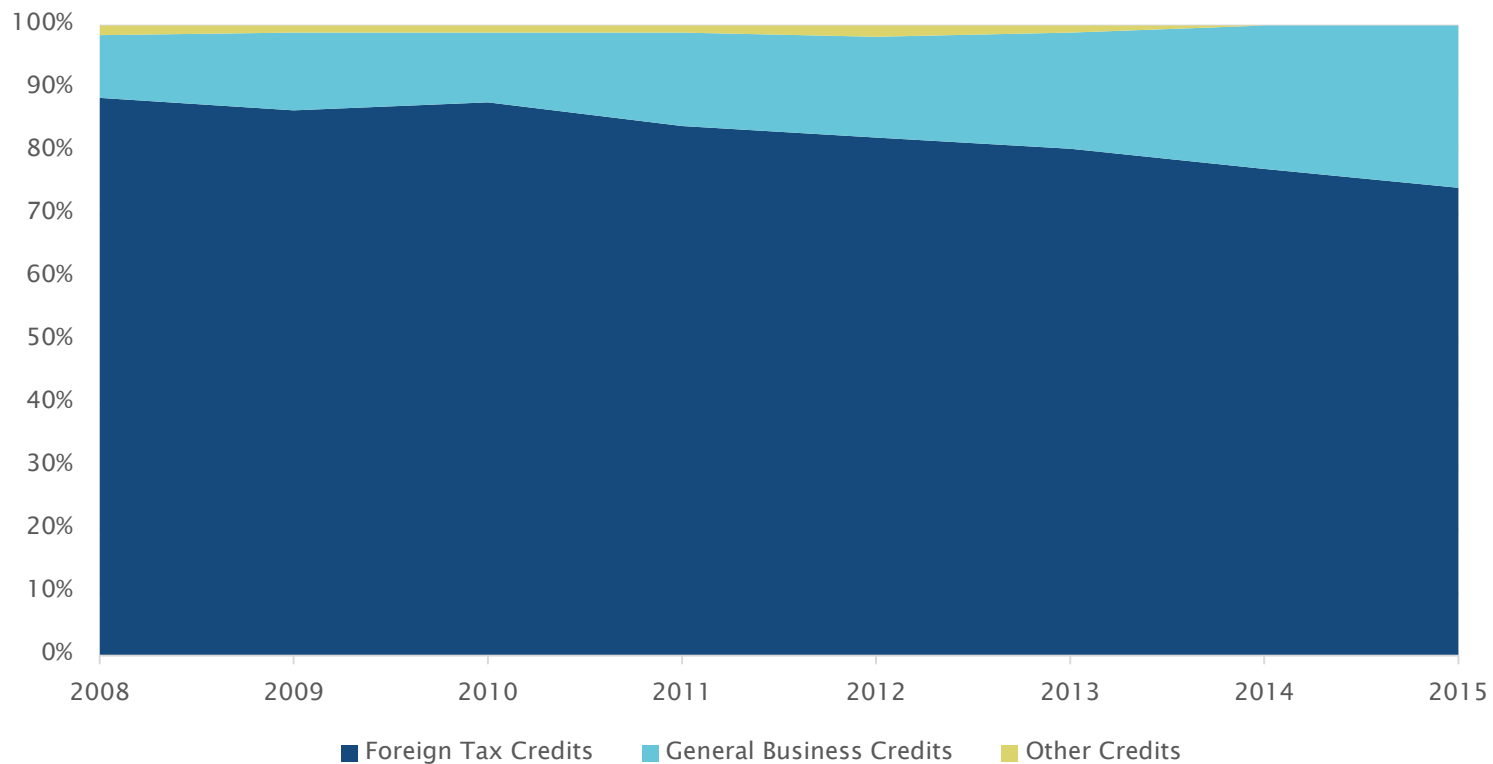
Forecasted Budget Impacts of TCJA Provisions (\$ Billions)*



* **Source:** JCT, *Estimated Budget Effects of the Conference Agreement for H.R. 1, the 'Tax Cuts and Jobs Act,* December 2017.

Step 3: Add Back Federal Tax Credits

Composition of Federal Corporate Income Tax Credits, U.S. Fiscal 2008-2015*



* **Source:** IRS Statistics of Income, Corporation Income Tax (Line Item Estimates), 2008-15

Step 3: Add Back Federal Tax Credits

	<u>2017 Ordinary Income</u>	<u>2018 Ordinary Income</u>	<u>2018 Subpart F Income</u>	<u>2018 GILTI Income</u>
	US Parent	US Parent	US Parent	US Parent
US Dividend Income:	\$100	\$100	\$100	\$100
Deductions:	--	\$100	--	\$50
x Tax Rate:	\$35	--	\$21	\$10.50
Credits:	\$15	--	\$15	\$4
US Tax	\$20	--	\$6	\$6.50
	\$100 dividend	\$100 dividend	\$100 dividend	\$100 dividend
	Canada Sub	Canada Sub	Canada Sub	Barbados Sub
	\$100 profit, \$15 tax	\$100 profit, \$15 tax	\$100 profit, \$15 tax	\$100 profit, \$5 tax

Step 3: Add Back Federal Tax Credits

Technical Advisory Group Question 4

We are seeking advice on a more direct measure or way of estimating either:

- The reduction in foreign tax credits under TCJA; and/or
- The amount/percentage of foreign tax credits retained as a result of GILTI inclusions.

Step 3: Add Back Federal Tax Credits

Technical Advisory Group Question 5

In what ways did TCJA led to changes (impacting corporate income tax revenues) that were not anticipated when it was enacted?

Step 4: Divide by Federal Tax Rate

Step 4

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Step 4: Divide by Federal Tax Rate

In step 4, we divide by the applicable federal corporate income tax rate:

$$Taxable_{US} = \frac{Tax\ Due_{US} + Total\ Credits_{US} - Minimum\ Tax\ Payments_{US}}{Tax\ Rate_{US}}$$

2018- : Flat 21%.

2017:

Taxable Income Range	Marginal Tax Rate	Average Tax Rate
\$0 - \$50,000	15%	15.0%
\$50,000 - \$75,000	25%	18.3%
\$75,000 - \$100,000	34%	22.3%
\$100,000 - \$335,000	39%	34.0%
\$335,000 - \$10 million	34%	34.0%
\$10 million - \$15 million	35%	34.3%
\$15 million - \$18.33 million	38%	35.0%
\$18.33 million +	35%	35.0%

Step 5: Unadjusted Apportionment (Sales)

Step 5

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Step 5: Unadjusted Apportionment (Sales)

Gates (2002) assumes three-factor apportionment formula. Equal weights to

- Sales,
- Property, and
- Payroll).

However, in the years since Gates (2002):

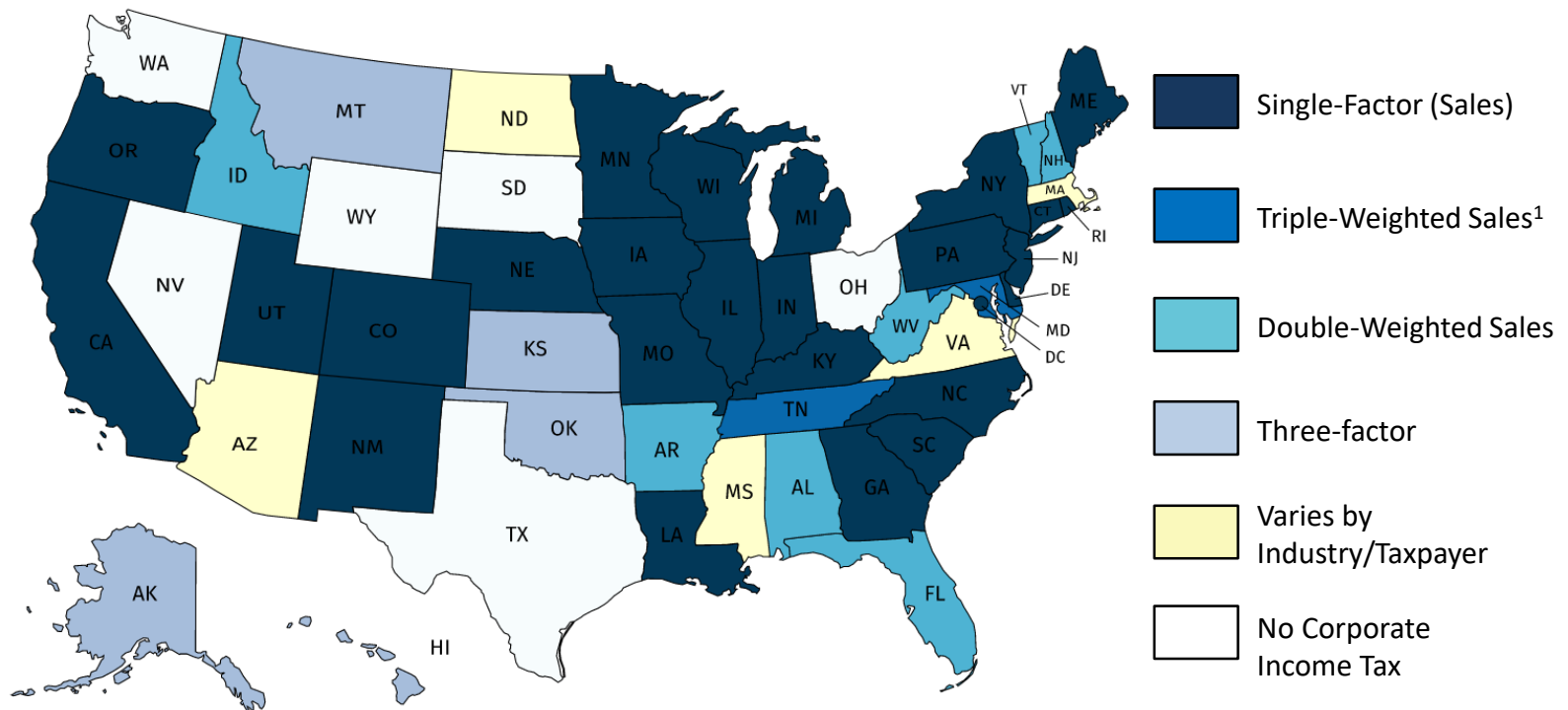
- States are increasingly adopting a single-factor sales formula; and
- Washington moved to single-factor apportionment for the B&O tax and retail sales tax.

We plan to use single sales factor apportionment in our main analysis.

However, we will also model three-factor apportionment as an alternative for which information may be requested.

Step 5: Unadjusted Apportionment (Sales)

State Apportionment Formulas – Corporate Income



2020 Tax Year, based on information collected from state revenue codes.

Maryland uses quadruple-weighted sales

Step 5: Unadjusted Apportionment (Sales)

Simplifying Assumption: Each dollar of U.S. businesses' receipts leads to an equal amount of federal taxable income.

Ignoring the effect of imports and exports, the percentage of federal taxable income apportionable to Washington is then:

$$\text{Unadj. Apportion}\%_{Wa} = \frac{C_{Wa} + B_{Wa} + G_{Wa}}{C_{US} + B_{US} + G_{US}}$$

Where:

C_j = Consumption of Households in jurisdiction j

B_j = Business-to-business purchases made by firms in jurisdiction j

G_j = Business purchases made by governments in jurisdiction j

Step 5: Unadjusted Apportionment (Sales)

Components of Business Receipts in Unadjusted Apportionment Calculation

Component:	Estimated with:	Source:
Household Consumption	Personal Consumption Expenditures	BEA
Business-to-Business Purchases	Capital purchases, inventory purchases, intermediate commodity demand	IMPLAN Input-Output Data
State & Local Government Purchases	State/local government expenditures less: <ul style="list-style-type: none"> • Salaries, wages, benefits • Intergovernmental expenditures • Insurance benefits & repayments • Assistance & subsidies • Interest on debt 	U.S. Census of Governments
Federal Govt. Purchases	Federal contracts with business recipients (by state)	U.S. Treasury Department

Step 6: Apportionment Adjustments

Step 6

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Step 6: Apportionment Adjustments

In Step 6 we relax the assumption that each dollar of business receipts leads to an equal amount of federal taxable income, allowing for differences in X among:

- Large Washington companies (> \$1 billion revenues) and
- Key industries

Companies with more than \$1 billion of net revenue accounted for 84% of all corporate income taxes in 2015 (SOI).

Step 6: Apportionment Adjustments

Illustration of Large Company Adjustment

Amount		All US Companies - Unadjusted
U.S. revenue	A	40,000
Taxable Income / \$ Revenue	B	5%
Federal Taxable Income	$C = B \times A$	2,000
Washington revenue %	D	2.5%
Unadjusted Taxable Income Amount Apportionable to WA	$E = D \times C$	50

Step 6: Apportionment Adjustments

Illustration of Large Company Adjustment

Amount		Large WA Company	Large WA Company if "Average"	Difference
U.S. revenue	a	200	200	-
Taxable Income / \$ Revenue	b	10%	5%	5%
Federal Taxable Income	c = b x a	20	10	10
Washington Revenue %	d	50%	2.5%	47.5%
"Extra" Washington- Apportionable Taxable Income	e = d x c			4.75

Adding the "extra" Washington-apportionable taxable income reveals an adjusted apportionment % of: $\frac{50 + 4.75}{50} \times 2.5\% = 2.74\%$.

Step 6: Apportionment Adjustments

Large Company Adjustment Formula

We will apply this concept with a series of adjustments for all large Washington-based companies :

$$\text{Adjusted Apportionment}_{Wa} = \text{Unadj. Apportionment}_{Wa} + \sum_i \frac{\alpha_i (\beta_i - 1) (X_{US\ Avg}) R_{Wa}}{TI_{US\ Total}}$$

Where:

α_i = The “excess” percentage of WA spending to company i ,

$\beta_i = X_i / X_{US\ Average}$

X_i = Taxable income per dollar of net revenue

R_{Wa} = All Corporations’ total revenue sourced from Washington

TI_{US} = All Corporations’ total taxable income

$$\text{Adjusted Apportionment}_{Wa} = 2.5\% + \sum_i \frac{\frac{4.75}{50} \left(\frac{.10}{.05} - 1 \right) (.05) (.025 * 40,000)}{2,000} + \dots$$

Step 6: Apportionment Adjustments

Estimation of Large Company Adjustments

Large Company Data: SEC 10-K, 2016-2019:

- Net Revenue (U.S.-specific if available)
- Cash Paid for Income Taxes
- Tax Provision (Federal, State & Local, Foreign)

We estimate companies' federal taxable income as:

$$\frac{(\text{Cash Paid Income Taxes}) \times \frac{\text{Federal Provision}}{\text{Tax Provision}}}{\text{Federal Income Tax Rate}}$$

We will estimate large companies' Washington-sourced revenues using Department of Revenue Excise Tax data.

Step 6: Apportionment Adjustments

Industry Adjustments

We plan to apply a similar series of adjustments for industries where X is significantly above/below average.

Based on preliminary estimates, X varies significantly across industries.

We will use IMPLAN Input-Output data to estimate the “excess” percentage of WA spending on corresponding goods and services.

High X Industries	Low X Industries
Information services and software	Oil and gas extraction, mining, and quarrying
Pharmaceuticals and medical devices	Vehicle manufacturing
	Wholesale trade
	Retail trade – Food, groceries, drugstores

Step 7: Apply Washington Tax Rates

Step 7

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Step 7: Apply Washington Tax Rates

In the baseline model, step 7 involves simply multiplying (or backing out):

$$Tax\ Due_{Wa} = Tax\ Rate_{Wa} \times Apportionment\%_{Wa} \times Taxable_{US}$$

Our baseline Corporate Macro Model will assume a flat tax rate.

The Corporate Microsimulation Model will more flexibly model features such as progressive tax rates.

Depending on time constraints we will attempt to build the Corporate Macro Model to simulate other features, including progressive tax rates.

Step 8: Adjust for Washington Payment Lags

Step 8

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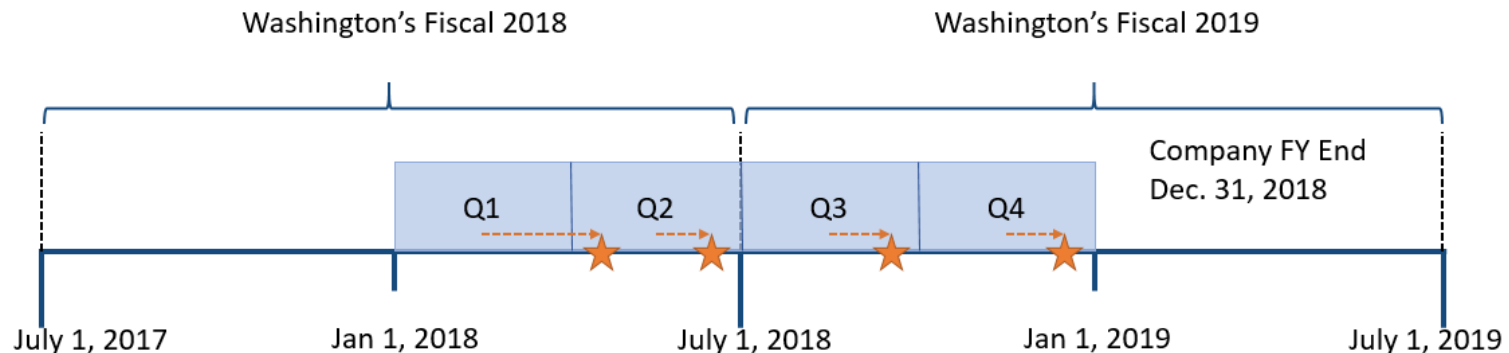
Step 8: Adjust for Lag in Estimated Payments

As noted, we assume quarterly the following estimated tax payment schedule:

For December 31 Fiscal Year End Companies:

- Q1: April 15
- Q2: June 15
- Q3: September 15
- Q4: December 15

For the Dec. 31 fiscal year end company, estimated tax payments align within Washington fiscal year.



★ Orange stars denote due dates for company to pay estimated corporate tax for Q1, Q2, Q3, and Q4 (April 15, June 15, September 15, and December 15, respectively).

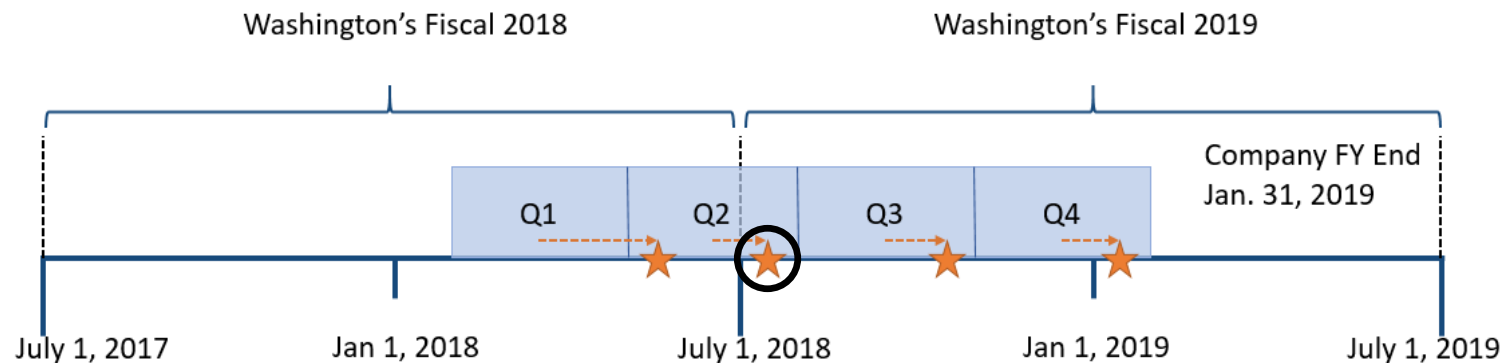
Step 8: Adjust for Lag in Estimated Payments

There is a lag in estimated payments *across fiscal years* for companies with fiscal years ending in January (common for retailers):

For January 31 Fiscal Year End Companies:

- Q1: May 15
- Q2: July 15
- Q3: October 15
- Q4: January 15

It is unclear how common it is for taxpayers to remit estimated tax payments more than 15 days before the deadline



★ Orange stars denote due dates for company to pay estimated corporate tax for Q1, Q2, Q3, and Q4 (May 15, July 15, October 15, and January 15, respectively).

Step 8: Adjust for Lag in Estimated Payments

Technical Advisory Group Question 1

Assuming corporations make quarterly estimated tax payments following a payment schedule similar to Oregon and Idaho, we anticipate a lag in collections for some taxpayers. How can we account for this in our model?

Step 9: Forecast Future Collections

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- 9. Forecast future Washington tax payments.**
10. Validate model and report results.

Step 9: Forecast Future Washington Collections

Forecasts - Taxable Income Components and Evolving Impact of TCJA

In the absence of changing tax provisions, we assume each of the following grow at same rate as corporate profits grow:

- Total Income
- Deductions
- Credits (Less Minimum Tax)

TCJA Starting point: JCT December 2017 estimates of impacts of TCJA provisions.

Other sources as appropriate: CBO, Office of Management and Budget, etc.

Step 9: Forecast Future Washington Collections

Forecasts - Apportionment

We will start from the average of our calculation of 2016-2019 Washington Apportionment %.

We will adjust the Apportionment % to account for Washington's growth in the share of U.S. personal income since the 2016-2019 period, e.g.,

$$Apportionment_{Wa,2021} = Adjusted\ Apportionment_{Wa,2016-19} \times \frac{WA\ \% \ of\ U.S.\ Personal\ Income_{2021}}{WA\ \% \ of\ U.S.\ Personal\ Income_{2016-19}}$$

Other steps in the estimation process (e.g., application of tax rates) are identical to the process for 2017-2019.

Step 10: Validate Model and Report Results

Step 10

1. Gather federal tax collections data through U.S. Fiscal 2019.
2. Adjust for timing differences between U.S. and Washington fiscal years.
3. Estimate and add-back federal tax credits (less minimum tax), including effects of Tax Cuts and Jobs Acts (TCJA) provisions.
4. Divide by federal tax rate to estimate federal taxable income.
5. Estimate federal taxable income apportionable to Washington (unadjusted estimate).
6. Adjust apportionment to account for large companies and industries.
7. Apply tax rates from proposals to determine Washington corporate income/net receipts tax revenues (or back out rates based on revenues).
8. Adjust for lags in Washington tax payments.
9. Forecast future Washington tax payments.
- 10. Validate model and report results.**

Step 10: Validate Model and Report Results

Amount		US 2017	US 2018	US 2019
Total federal corporate income tax collections				
Amount		WA 2017	WA 2018	WA 2019
Total federal corporate income tax collections	a			
Add back: Credits, Less: Minimum tax payments	b			
Average federal corporate income tax rate	c			
Total federal taxable income	$d = (a + b) / c$			
Unadjusted Washington apportionment %	e			
Net adjustment to Washington apportionment %	f			
Taxable income apportionable to Washington	$g = (e + f) \times d$			
Proposed Washington corporate income/net receipts tax rate	h			
Tax due under proposed WA corporate income/net receipts tax	$i = g \times h$			

Step 10: Validate Model and Report Results

Technical Advisory Group Question 6

Factoring in time and resource constraints, are there additional details we should present in our results that would significantly improve:¹

- **The ability to validate the model**
- **The usefulness of the results to policymakers**

1: A future presentation will describe our analysis of the burden of the corporate income/net receipts tax by industry.

Step 10: Validate Model and Report Results

Model Validation

We want to assess how the model's underlying assumptions hold up when tested for other states with corporate income tax.

We plan to identify a small sample of states with tax structures comparable to the Washington proposals. Ideally:

- Based on federal taxable income
- Flat corporate income tax
- S-Corps are exempt
- Few if any “additional” features (credits, deductions, thresholds, etc.)
- June 30 fiscal year end

Step 10: Validate Model and Report Results

Technical Advisory Group Question 7

In order to validate our model, we would like to see how well it predicts state corporate tax receipts when applied to other states' corporate income tax structures. We would like advice on a few possible states to include in this model validation exercise.

Concluding Discussion

Technical Advisory Group Question 8

Are there features of other state corporate income taxes that we have not considered that are ubiquitous enough that we should consider modelling in our analysis (or building a toggle for)?

Concluding Discussion

Technical Advisory Group Question 9

For all analyses, we welcome suggestions relating to data sources, methods, and references.

Questions for us?