Model Review: Business Value Added Tax or Margins Tax Model

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Model Purpose	Estimate the potential revenue impacts of Washington implementing: • A subtraction method business value added tax (VAT), as recommended in the Gates (2002) study;[1] or • A margins tax, as suggested in the final report of the 2018 tax structure work group.[2] For these alternatives, the Business Value Added Tax or Margins Tax (VAT-MT) Model will identify: • Tax rates needed to replace the revenues from the business and occupation (B&O) tax; • Revenues generated from the subtraction method VAT in the 2017-19 biennium if it had been implemented as described in Gates (2002) study;[3] and • Tax paid as a share of total business revenue for various business activities.

Data Sources	The key data sources include:
	• 2017 Internal Revenue Service (IRS) microdata for federal business tax returns;[4]
	    o Form 1120 (C-Corps);
	    o Form 1120S (S-Corps);
	    o Form 1065 (Partnerships)
	• Washington State Department of Revenue (the Department) Excise Tax[5] Data; and

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[1] Gates, W.H. (2002). *Tax alternatives for Washington State.* Washington State Tax Structure Study Committee. (https://dor.wa.gov/about/statistics-reports/tax-structure-final-report). We refer to this report herein as "the Gates study (2002)," or simply "the final report."

[2] Washington State Legislature (2018). *House Tax Structure Work Group Final Report.* (December 3, 2018). (https://app.leg.wa.gov/committeeschedules/Home/Document/186393). We refer to this report herein as "the House report (2018)."

[3] This objective only applies to the subtraction method business value added tax. The House report (2018) did not propose specific tax rates for the margins tax.

[4] Federal business tax return data is limited to companies with Washington nexus.

[5] Primarily business and occupation (B&O) tax data.

Data Sources, *continued*	• IRS Statistics of Income (SOI) data. Additional details on these data sources are provided in the ***About the Data*** section.
Requirements Model Used to Fulfill	Per ESHB 1109 (2019) Sec. 137:[6] *(With respect to the subtraction method business VAT alternative in the Gates study (2002)):* (2)(c)(v)(B): By December 1, 2020,[7] the [Department of Revenue] and technical advisory group must prepare a summary report of their preliminary findings and alternatives described in (c)(vii) of this subsection;….[8] (2)(c)(vii)(A): With respect to the final report[9] of findings and alternatives submitted by the Washington state tax structure study committee to the legislature under section 138, chapter 7, Laws of 2001 2nd sp. sess.: (I) Update the data and research that informed the recommendations and other analysis contained in the final report; (II) Estimate how much revenue all the revenue replacement alternatives recommended in the final report[10,11] would have generated for the 2017-2019 fiscal biennium if the state had implemented the alternatives on January 1, 2003; (III) Estimate the tax rates necessary to implement all recommended revenue replacement alternatives in order to achieve the revenues generated during the 2017-2019 fiscal biennium as reported by the economic and revenue forecast council (ERFC).

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[6] Washington State Legislature (2019). *HB 1109: Making 2019-2021 biennium operating appropriations.* (https://app.leg.wa.gov/billsummary?BillNumber=1109&Year=2019&Initiative=false).

[7] The deadline for this report was later changed to December 31, 2020.

[8] We will refer to this report as "The Tax Structure Preliminary Report."

[9] Gates, W.H. (2002). *Tax alternatives for Washington State.* Washington State Tax Structure Study Committee. (https://dor.wa.gov/about/statistics-reports/tax-structure-final-report).

[10] The final report analyzed three replacement alternatives involving a value added tax: (i) a subtraction method business value added tax; (ii) a goods and services tax; and (iii) a progressive value added tax. A majority of the committee members recommended a subtraction method business value added tax to replace Washington's business and occupation (B&O) tax.

[11] For details on the models relating to the other replacement alternatives recommended in the Gates study (2002), refer to the other model review documents prepared by the Department of Revenue, including the personal income tax, corporate income/net receipts tax, and household tax burden models.

Requirements Model Used to Fulfill, *continued*	(2)(c)(vii)(B): *With respect to the [margins tax] recommendations in the final report of the 2018 tax structure work group:*[12] (I) Conduct economic modeling or comparable analysis of replacing the B&O tax with an alternative, such as… [a] margins tax, and estimate the impact on taxpayers, such as tax paid as a share of total business revenue for various business activities assuming the same revenues generated by business and occupation taxes during the 2017-2019 fiscal biennium as reported by the ERFC.
Questions for Technical Advisory Group	1. Nonprofit corporations may be subject to taxation under the B&O tax. Nonprofits may have positive value add/margins that could be taxable under a VAT/margins tax. **Is it appropriate/practical to include these entities in the tax base for a VAT/margins tax? Are there other types of entities that are taxable under the B&O that we should model as nontaxable under a VAT/margins tax?** 2. We plan to add back COGS and subtract bad debt from IRS total income (Line 11 of Form 1120) to improve total income's comparability with B&O taxable income. **What other adjustments to IRS total income will improve comparability with B&O taxable income? How can we calculate these?** 3. We group unmatched B&O tax accounts and IRS returns based on state (i.e., 1. WA, 2. OR/ID, or 3. Other). We then determine an average Washington apportionment percentage within these groups, which we assign to all unmatched accounts in the group. **Should we group by additional variables, bearing in mind, for example, that the IRS and Department of Revenue data may assign the same taxpayer to different NAICS codes?** 4. To estimate the 2018 and 2019 VAT tax base and margins tax, we start from the estimated 2017 tax bases. For the VAT, we currently plan to project the 2018-19 tax base based on Washington's GDP growth rate for 2018-19. For the margins tax, we plan to rely on historical B&O data as discussed in Step 6. **How can we refine our approach to more accurately project the 2018 and 2019 VAT tax base and margins tax base?** 5. We currently plan to summarize tax paid as a percentage of total business revenue under a subtraction method VAT or margins tax, by NAICS sector and amount of total income. **Are there additional categories of taxpayers**

[12] Washington State Legislature (2018). *House Tax Structure Work Group Final Report.* (December 3, 2018). (https://app.leg.wa.gov/committeeschedules/Home/Document/186393).

Questions for Technical Advisory Group, *continued*

(or different groupings within these categories) for which we should calculate tax paid as a percentage of total revenue?

6. **Factoring in time and resource constraints, are there additional details we should report in our results that would significantly improve:**
   a. **The ability to validate the model;**
   b. **The usefulness of the results to policymakers.**

7. **Are there other features of a VAT or business margins tax that we should consider modelling in our analysis**

8. **For all analyses, we welcome suggestions relating to data sources, background reading, and methods.**

Questions from Technical Advisory Group

We will capture at meeting and record here

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Background and Theory

Background

Value added taxes (VATs) include several forms of tax imposed on the incremental value a business adds to goods and services it sells. For example, under a VAT, a pure retailer owes tax on the difference between the value of the products they sell at retail vs. the value of the products they purchase at wholesale. Similarly, a manufacturer owes tax on the difference between the value of the manufactured products they sell and the value of the inputs they purchased for use in the manufacturing process. Therefore, in contrast to a sales tax or gross receipts tax, a well-designed and well-implemented VAT avoids tax pyramiding, so that the tax applies equally at each stage of production.

The majority of the U.S.'s international trading partners impose a VAT, including Canada, Mexico, China, Japan, the European Union, and the United Kingdom. However, among U.S. states only New Hampshire currently imposes a form of VAT with its Business Enterprise Tax.[13] As a result, the mechanics of a VAT are unfamiliar to most Americans. In this section, we describe various forms of VATs and the margins tax in generalized terms. In this brief overview, we describe only a few possible forms of VAT, we do not describe all features of these forms of VAT, and we ignore certain distinctions that exist within these categories.

By far the most common form of VAT internationally is a credit-invoice method VAT. A credit-invoice method VAT taxes businesses on sales at each stage of production, but allows credits for the VAT already paid on their purchased inputs. Businesses must track invoices to avoid double taxation, which adds a compliance burden on taxpayers. However, the credit-invoice system also discourages tax evasion, because of incentives to self-enforce and the natural paper trail that follows from such a system. No U.S. states impose (or ever have imposed) a credit-invoice method VAT, at least in part because of the difficulty of one state administering such a tax in isolation (e.g., dealing with sales to and purchases from unregistered out-of-state taxpayers).

New Hampshire's Business Enterprise Tax uses an addition method to arrive at a value added tax base. Businesses face tax on the sum of: (i) all compensation paid or accrued; (ii) interest paid or accrued; and (iii) dividends paid by the business enterprise.[14] We will show in the *Value Added Tax Theory and Design* subsection that this tax base is nearly equivalent to that of a credit-invoice method VAT.

A subtraction method VAT also, in theory, arrives at a similar tax base to the credit-invoice method VAT and the addition method VAT. The tax base of a subtraction method VAT is gross receipts with a deduction for the cost of intermediate goods and services. Unlike a credit-invoice method VAT, a subtraction method VAT generally uses *annual accounts* rather than individual transactions to compute the tax. This method does not necessarily require businesses to issue invoices and track individual credits. However, Japan has the most prominent subtraction method VAT in existence today and currently has a "simplified" qualified invoicing

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[13] Michigan's modified gross receipts tax, a component of the Michigan Business Tax (MBT), also resembles a VAT, however it is not broadly imposed today. The MBT was replaced with a corporate income tax in 2011, except for a limited number of taxpayers with accumulated credits that elected to continue paying tax under the MBT tax system.
[14] New Hampshire Revised Statutes Annotated, Title V, Chapter 77-E.

requirement for some taxpayers qualifying for reduced VAT rates. Japan is currently transitioning to a more expansive invoice retention system.[15]

A margins tax shares much in common with a subtraction method VAT. The tax base of a margins tax, as the name suggests, consists of businesses' gross margins, i.e., gross receipts less returns and allowances and less cost of goods sold (COGS).[16] The COGS subtracted from a margins tax base differs from the cost of intermediate goods and services deducted in the subtraction method VAT cost base. For example, manufacturing salaries and wages are associated with production and included as cost of labor – a component of COGS – and therefore excluded from the cost base of a margins tax. In general, though, COGS is narrower than the cost of intermediate goods and services, and so a "pure" margins tax has a broader base than a VAT.

The most prominent example of a tax resembling a margins tax today is the Texas Franchise Tax. Under the Texas Franchise Tax, taxpayers can deduct either: (i) COGS; (ii) compensation; (iii) a fixed percentage of total revenue; or (iv) a lump sum amount of $1,000,000.[17] Therefore, the Texas Franchise Tax deviates from a pure margins tax. (Note the "margins tax" described in the House report (2018) follows the Texas Franchise Tax in allowing businesses to claim the most beneficial deduction of COGS, compensation, a fixed percentage of total revenue, or a lump sum amount.)

There are advantages and disadvantages to any form of VAT. Notably for Washington, a subtraction method VAT or margins tax are administratively closer to the existing B&O tax than a credit-invoice method VAT or addition method VAT. The Gates study (2002) recommended a subtraction method VAT as an alternative to replace Washington's B&O tax. The House report (2018) proposed a margins tax to replace the B&O tax. We will develop the VAT-MT Model primarily to analyze the potential impact of these two tax alternatives.

Value Added Tax Theory and Design

This subsection provides a brief theoretical framework to understand the similarities and differences in the tax bases under various forms of VATs. This framework will be useful in modeling the proposed alternative VAT or margins tax systems and connecting them to IRS business tax return data. Unless noted otherwise in this subsection, assume a closed economy and ignore purchases and sales outside of the taxing jurisdiction (exports/imports).

By utilizing its factors of production (capital and labor)[18] rather than remaining idle during a period, a firm generates value that it in turn pays out to the factors of production. Labor receives direct compensation and benefits from the firm, while the suppliers of capital receive interest or share in the profits of the firm through dividends and capital gains. A portion of a firm's production must also offset depreciation, or else the firm's

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[15] PwC (November 2019), *Japanese Consumption Tax: Complexities in Light of Multiple Tax Rates and New Invoicing, Bookkeeping and Registration Requirements*. Japan Tax Update, Issue 151. https://www.pwc.com/jp/en/taxnews/pdf/jtu-20191114-en-151.pdf.

[16] The terms "cost of goods sold" and "cost of sales" are used interchangeably. Either term, as used herein, includes both goods and services.

[17] Texas Tax Code, Title 2, Subtitle F, Chapter 171.101(1).

[18] Some models also treat land and/or technology as distinct factors of production.

capital stock will decrease. Thus, a firm's value added, V, may be summarized by Equation 1 below, which is the basis for an addition method VAT:[19]

Equation 1: An addition method VAT

$$V = W + P + D$$

Where:

$$W = \text{Return on labor:}[20] \text{ Salary, wages, benefits, compensation of officers}$$

$$P = \text{Return to capital: }[21] \text{ Profits}[22] \text{ plus interest payments}$$

$$D = \text{Depreciation and depletion}$$

The tax base of New Hampshire's addition method VAT (the Business Enterprise Tax) includes $W + P$, so its tax base deviates from Equation 1 mainly by not including depreciation and depletion.

Next, we show the approximate equivalence of other forms of VAT to the addition method VAT. A firm's profit, P, may be summarized as in Equation 2.

Equation 2: Profit identity

$$P = I - G - W - D$$

Where:

$$I = \text{Total Pre-Tax Income (excluding interest income, dividends, and certain capital gains)}$$

$$G = \text{Intermediate Goods and Services Purchased}$$

Substituting for P and solving, Equation 1 becomes:

Equation 3: Credit-invoice method VAT / Subtraction method VAT

$$V = I - G$$

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[19] Strauss, Robert P. (1987). *A Study of Alternative Tax Structures for the State of Washington.* Center for Public Financial Management and School of Urban and Public Affairs, Carnegie-Mellon University.
[20] Pre-tax.
[21] Pre-tax.
[22] Interest income and dividend income (and certain capital gains) are excluded from P. Although these forms of business income may be taxable, they represent value created by another firm, so inclusion of these income components would lead to double taxation of value added.

A credit-invoice method VAT imposes tax on $I - G$, computed at the transaction level. A subtraction method VAT imposes tax on $I - G$, based on annual accounts. The credit-invoice method VAT and subtraction method VAT tax bases are, theoretically, the same in a closed economy.[23]

Differences arise between a credit-invoice method VAT and subtraction method VAT when considering an open economy. A credit-invoice method VAT system must harmonize with other taxing jurisdictions. Credit-invoice method VATs are typically destination-based, imposing tax on the value of imports but allowing credits on exports. The subtraction method VAT proposed in the Gates study (2002) is origin-based, in that the tax is imposed only on taxpayers with Washington nexus.[24] Intermediate goods and services are deductible, regardless of whether purchased from businesses inside or outside of Washington.

A Comparison of Tax Bases Using Form 1120

Table 1 below compares the tax bases of a VAT, a margins tax, the B&O tax and a corporate income tax (CIT), based on their inclusion or exclusion of IRS Form 1120 income and deduction items. In addition to the tax base of a "pure" VAT, the table also shows the tax base for an alternative quasi-VAT structure that retains the Washington B&O's inclusion of dividends, interest, and certain capital gains.[25] The table also shows both a "pure" margins tax and a margins tax modeled after the Texas Franchise tax. [26]

The top six rows in the table are income items. Dark blue shaded cells indicate that an income item is included in a given tax base. Light blue shaded cells indicate that a portion of the line item is included in the tax base. The bottom rows are deductions/cost line items. Dark grey shaded cells indicate that the line item is deducted from the tax base and light grey shaded cells indicate that a portion of the line item is deducted from the tax base.

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[23] In practice, a credit-invoice method VAT tax base is likely broader because of higher taxpayer compliance.

[24] However, given Washington's move to single-factor (sales) apportionment, a subtraction method VAT today would be more of a hybrid between origin-based and destination-based.

[25] Under RCW 82.04, the B&O tax base for non-financial services businesses includes the value of products [extracted or manufactured], gross proceeds of sales, or gross income of the business, depending on the business activity. RCW 82.04.070 defines the gross proceeds of sales as, "value proceeding… from the sale of tangible personal property, digital goods, digital codes, digital automated services, and/or for other services rendered…" RCW 82.04.080 states that the gross income of the business includes "gross proceeds of sales, compensation for the rendition of services, gains realized from trading in stocks, bonds, or other evidences of indebtedness, interest, discount, rents, royalties, fees, commissions, dividends, and other emoluments however designated, all without deduction…" There are narrow exemptions for specific business activities, but except for the exemption on amounts derived from the sale of real estate, the B&O tax does not exempt or allow deductions on broad categories of income.

[26] This tax structure also retains the Washington B&O's inclusion of dividends, interest, and certain capital gains.

Included in tax base	Partially included	Deducted from base	Partially deducted

Table 1: Comparison of VATs, margins taxes, B&O tax, and CIT tax bases, based on IRS Form 1120 line items

	2017 IRS Form 1120 Line Item(s)	Pure VAT	VAT w/ B&O Inclusions	Pure Margins Tax	Texas Margins Tax	B&O	CIT
Income	1. Gross receipts less returns	Included	Included	Included	Included	Included	Included
	4-5. Dividends, inclusions, interest income		Partially		Partially	Partially	Included
	6-7. Gross rents, gross royalties	Included	Partially	Included	Partially	Partially	Included
	8. Capital gain net income	Partially	Partially		Partially	Partially	Included
	9. Net gain from Form 4797	Partially	Partially		Partially	Partially	Included
	10. Other income	Partially	Included		Included	Included	Included
Deductions/Costs	2. COGS (Purchased goods/services)	Deducted	Deducted	Deducted	Option 1 (Deducted)		Deducted
	2. COGS (Cost of Labor)			Deducted	Option 1 (Deducted)		Deducted
	12-13. Compensation of officers, salaries, wages				Option 2 (Deducted)		Deducted
	14. Repairs & maintenance						Deducted
	15. Bad debts	Deducted	Deducted	Deducted	Deducted		Deducted
	16. Rents	Deducted	Deducted				Deducted
	17. Taxes & licenses						Deducted
	18. Interest deductions		Deducted				Deducted
	19. Charitable contributions						Deducted
	20-21. Depreciation/depletion						Deducted
	22. Advertising	Deducted	Deducted				Deducted
	23-24. Pension, profit sharing, employee benefit						Deducted
	25. Domestic production activities						Deducted
	26. Other deductions	Deducted	Deducted				Deducted
	29. NOL deductions/Special deductions						Deducted
	Alternative: Lump sum or fixed % of revenue				Option 3 (Deducted)		

We will use the rubric in Table 1 to model the VAT and margins tax bases, based on 2017 IRS microdata, as we describe further in the **Methodology** section. We will model the subtraction method VAT based on the tax base of the "VAT with B&O Inclusions" column and we will model the margins tax based on the "Texas Margins Tax" column.[27]

Objectives

We will estimate revenues that would have been generated for the 2017-2019 fiscal biennium if the subtraction method VAT had been implemented as described in the Gates study (2002). We will also estimate the tax rates necessary to implement the subtraction method VAT proposals in the Gates study (2002) and the margins tax proposal in the House report (2018) to achieve the revenues generated during the 2017-2019 fiscal biennium.

Table 2: Value added tax and margins tax proposals

Gates Study (2002) Proposal	House Report (2018) Proposal
• Eliminate the state B&O tax	• Eliminate the state B&O tax
• Replace revenues with a 2.2% subtraction method business VAT[28]	• Replace revenues with a margins tax

For the given proposals, we will also estimate tax paid as a share of total (Washington) business revenue for various business activities and will compare this with the current tax structure. We will perform this analysis by:

• Industry (NAICS sector); and
• Amount of total income (per federal income tax data)

Refer to **Step 8** of the **Methodology** section for details of our analysis by business activity.

Subtraction Method VAT Proposal

The Gates study (2002) recommended a subtraction method VAT to replace the state B&O tax. Specifically the study proposed a VAT with the following features:

• <u>Tax incidence</u>: All businesses with nexus in Washington.[29]
• <u>Rate and yield</u>: A 2.2% VAT to replace the $2.28 billion of B&O revenue that was forecasted for calendar year 2005.

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[27] See Table 1.
[28] The Gates study (2002) determined a VAT rate of 2.2% would achieve revenue neutrality in calendar 2005. Revenue neutrality in the 2017-2019 fiscal biennium may require a different VAT rate.
[29] The definition of "nexus in Washington" has changed significantly since 2002. We assume that the current definition will apply to the subtraction method VAT proposal.

- Tax Base: Gross receipts[30] less cost of intermediate goods and services.
- Imports: Imports of intermediate goods are fully deductible. This is consistent with an origin-based VAT structure.
- Exports: Enterprises multiply gross receipts by an apportionment ratio in order to maintain the competitiveness of the current business tax system.[31]
- Exemptions: Limited exemptions on taxable activities/entities are possible, but the 2.2% VAT rate to achieve revenue neutrality in the 2005 calendar year assumes no exemptions.
- Treatment of Capital Expenditures/Depreciation: Capital expenditures and depreciation are not excluded from the tax base, but may be considered as a mechanism to increase competitiveness of Washington business.

We describe our assumptions related to modelling the subtraction method VAT below.

Subtraction Method VAT Assumptions

In general: In general, we follow the Gates study (2002) in modelling the features of the subtraction method VAT where possible. Where the Gates study (2002) is silent, we base additional assumptions on Washington's existing B&O tax structure or on the concept of value added as summarized in the framework described in the ***Background and Theory*** section above.

Taxpayers Subject to Subtraction Method VAT

Assumption: All businesses with Washington nexus will owe tax on any value added created during the tax year, except those that are currently exempt from the B&O tax.

> ***Technical Advisory Group Question 1***
> *Nonprofit corporations may be subject to taxation under the B&O. Nonprofits will have positive value add/margins that could be taxable under a VAT/margins tax. **Is it appropriate/practical to include these entities in the tax base for a VAT/margins tax? Are there other types of entities that are taxable under the B&O that we should model as nontaxable under a VAT/margins tax?***

Subtraction Method VAT "Gross Receipts"

Assumption: All categories of income and business activities that are taxable under Washington's current B&O tax will be taxable under the subtraction method VAT, subject to allowable deductions under the subtraction method VAT. This includes sales, dividends, interest, rental of tangible property, royalties, and capital gains for the sale of stocks and bonds. Likewise all income that is nontaxable under Washington's current B&O tax will

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[30] Refer to the ***Subtraction Method VAT "Gross Receipts"*** subsection.

[31] The Gates study (2002) assumed the use of a three-factor apportionment formula (33.3% sales, 33.3% property, and 33.3% payroll). As discussed further in the Corporate Income/Net Receipts Tax Model Review, few states use three-factor apportionment today. The single-factor (sales) apportionment formula is most common today, and Washington now uses it for the B&O tax. Therefore, our analysis of a subtraction method VAT will assume single-factor apportionment.

be nontaxable under the subtraction method VAT, including proceeds from the sale and rental of real estate and other exempt business activities.

Subtraction Method VAT Deductions

Assumption: Taxpayers will deduct all purchases of intermediate goods and services available to them under the subtraction method VAT. The deductions relative to the existing B&O tax base (as modelled based on Form 1120, 1120S, and 1065) include:

- COGS (excluding cost of labor);
- Rent expenses;
- Interest expenses;
- Advertising; and
- Other deductions[32]

As shown in Equation 1 (which is equal to the subtraction method VAT in Equation 3), value added consists of (i) wages, salaries, and benefits (*W*); (ii) profits (*P*); and (iii) depreciation and depletion (*D*). Thus, for modelling purposes, most federal deductions outside these categories are considered deductible.

However, federal deductions related to voluntary and involuntary transfers indicate that the firm merely transferred a portion of its value added to another entity. Therefore, even though these expenses do not relate to *W, P,* or *D*, we do not plan to include a deduction for taxes & licenses or charitable contributions. In addition, the federal domestic production activities deduction and NOL deductions do not relate to costs incurred in the current period, so a corresponding deduction from the value added tax base is not appropriate.

Subtraction Method VAT Apportionment

Assumption: The subtraction method VAT will retain the single-factor (sales) apportionment formula currently used for the B&O tax. Taxpayers will multiply the apportionment factor by aggregate value added to determine the portion of value added that is subject to Washington tax.[33]

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[32] Other deductions include expenses such as office supplies, fuel, utilities, insurance, consultant and legal fees, bank charges, meals and entertainment, and travel expenses.

[33] The Gates study (2002) assumed the use of a three-factor apportionment formula (33.3% sales, 33.3% property, and 33.3% payroll). As discussed further in the Corporate Income/Net Receipts Tax Model Review, few states use three-factor apportionment today. The single-factor (sales) apportionment formula is most common today, and Washington now uses it for the B&O tax. Therefore, our analysis of a subtraction method VAT will assume single-factor apportionment.

Margins Tax Proposal

The House report (2018) proposed the elimination of the B&O tax with an alternative tax, such as a margins tax. The margins tax described in the House report (2018) allows businesses to claim the most beneficial deduction of:[34]

- COGS;
- Compensation;
- Fixed amount or
- Fixed percentage of revenue

Although not directly stated in the House report (2018), this is the same general structure as Texas's Franchise Tax. Therefore, in the absence of other direction we will initially set the deduction parameters above to follow Texas's Franchise Tax. (See the ***Margins Tax Deductions*** subsection.)

We describe specific assumptions related to the margins tax below.

Margins Tax Assumptions

In general: We follow the Texas Franchise Tax in modelling additional features of the margins tax where appropriate. To the extent it is reasonable, we attempt to retain features of Washington's existing B&O tax structure.

Taxpayers Subject to Margins Tax

Assumption: All businesses with Washington nexus will potentially owe tax on their margins (if positive after deduction) during the tax year, except those that are currently exempt from the B&O tax. The tax will apply on a consolidated basis, in line with Internal Revenue Code consolidation rules, to ensure that taxpayers' structure does not dictate the amount of deductions claimed.

Margins Tax "Gross Receipts"

Assumption: All categories of income and business activities that are taxable under Washington's current B&O tax will be taxable under the margins tax, subject to allowable deductions under the margins tax. This includes sales, dividends, interest, rental of property, royalties, and certain capital gains. Likewise all income that is nontaxable under Washington's current B&O tax will be nontaxable under the margins tax. This includes proceeds from the sale of real estate and exempt business activities.

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[34] Although not directly stated in the House report (2018), this is the same general structure as Texas's Franchise Tax. Therefore, we will initially set the deduction parameters above to follow Texas's Franchise Tax. Specifically, we assume that the fixed deduction amount (if elected) is $1 million or 30% of total revenue.

Margins Tax Deductions

*Assumption***:** In a given tax year, taxpayers will claim the largest deduction available to them out of:

- COGS;
- Total Compensation;
- $1 million; or
- 30% of total revenue

These deduction amounts are determined *before* multiplication by the apportionment factor (see

***Margins Tax* Apportionment**).

Application & Measurement of Margins Tax Deductions

*Assumption***:** The total deductions claimed under a margins tax (before apportionment)[35] will apply as follows:

- COGS: Line 2 (Cost of Goods Sold);
- Total Compensation,
    - Form 1120/1120S: Line 12 (Compensation of Officers) + Line 13 (Salaries & Wages) + Form 1125-A Line 3 (Cost of Labor)
    - Form 1065: Line 9 (Salaries & Wages) + Line 10 (Guaranteed Payments to Partners) + Form 1125-A Line 3 (Cost of Labor);
- $1 million; or
- 30% of total revenue: 30% × [Line 1 + Lines 4 through 10]

Margins Tax Apportionment

Assumption: The margins tax will retain the single-factor (sales) apportionment formula currently used for the B&O tax. Taxpayers will multiply the apportionment factor by gross receipts less deductions to determine the portion of value added that is subject to Washington tax.[36]

About the Data

The primary microdata sets used for the VAT-MT Model are:

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[35] Single-factor (sales) apportionment will apply to deductions in the same way it applies to gross receipts.

[36] The Gates study (2002) assumed the use of a three-factor apportionment formula (33.3% sales, 33.3% property, and 33.3% payroll). As discussed further in the Corporate Income/Net Receipts Tax Model Review, few states use three-factor apportionment today. The single-factor (sales) apportionment formula is most common today, and Washington now uses it for the B&O tax. Therefore, our analysis of a subtraction method VAT will assume single-factor apportionment.

- IRS microdata for federal business tax returns of companies identified as having Washington nexus from
  - Form 1120 (C-Corps)
  - Form 1120S (S-Corps)
  - Form 1065 (Partnerships) and
- Department of Revenue excise tax data

IRS Business Income Tax Return Microdata

The IRS provides the Department with the BMF-BRTF table, which contains most line items from page 1 of business tax returns (Form 1120, Form 1120S, and Form 1065), and limited information from additional forms and schedules, such as subsidiary affiliation, accounting method, parent federal employer identification number (FEIN), tax period (i.e., fiscal year end) and business activity (NAICS code).

In September each year, the IRS extracts tax records posted during the previous twelve months. Each January they send the Department records for taxpayers based on a list of FEINs that the Department provides in a tickler file (e.g., including FEINs from the Department's excise tax data).

Figure 1: IRS disclosure requirements

This data includes records from current and prior tax years depending on when the returns were filed. Tax deadlines vary based on businesses' fiscal year. Furthermore, many business taxpayers, especially large businesses, use the automatic extensions granted by completing Form 7004. As a result, most 2018 business activity is not included in the September 2019 extract and the latest tax year for which we have relatively complete records is 2017.

Because we use two separate extract years to form our datasets, summary statistics from our data may differ noticeably from statistics produced with a different data extraction method. Importantly, the IRS Statistics of Income division uses other methods to form single-tax year datasets.

IRS Disclosure Rules: To maintain the confidentiality of taxpayer information, the IRS imposes strict requirements regarding the release of information obtained from these datasets. IRS guidance states that "tabulations that would pertain to specifically identified taxpayers or that would tend to identify a particular taxpayer, either directly or indirectly, may not be released."[37] To comply with this requirement, we do the following:

- Release only tables with cell counts that exceed IRS minimums (Figure 1).
- Avoid disclosure of summary statistics that pertain to a single taxpayer (e.g. median, minimum, and maximum).
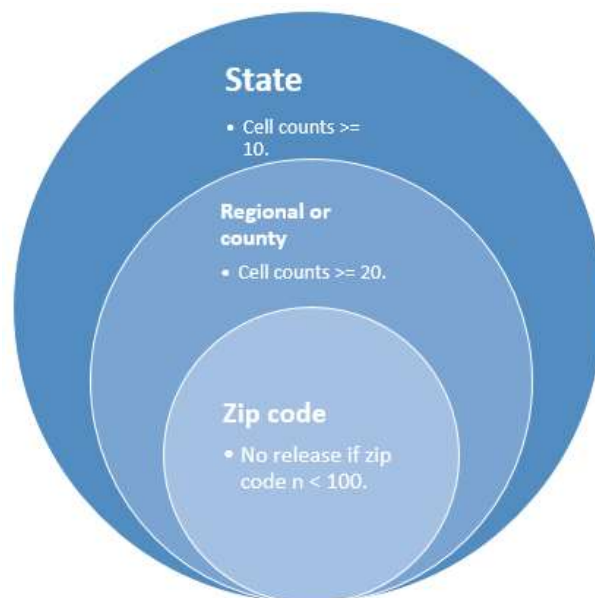
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[37] Internal Revenue Service (2016). *Publication 1075: Tax information security guidelines for federal, state and local agencies*. (https://www.irs.gov/pub/irs-pdf/p1075.pdf)

- Avoid releasing table cells displaying a sum or other statistic in which a single taxpayer's share of the total is 80 percent or more.

The VAT-MT model will use the most recent complete year of data, tax year 2017, as a starting point. (We also have the same data on file for years 2011 through 2016.)

Department of Revenue Data

Department of Revenue excise tax data includes information on the tax bases and tax payments of businesses and others paying Washington taxes. Major excise taxes include the B&O tax, sales and use tax, and the public utility tax (PUT).

Excise tax tables report the amounts of gross receipts, taxable income, and tax due. Other tables list deductions and credits. Finally, detailed taxpayer information, such as FEIN, NAICS, and account opening dates, is presented in other tables. The Research and Fiscal Analysis Division produces these datasets and regularly tests their validity.

IRS microdata provides taxpayers' total federal income, while the Department's gross income and taxable income data relate only to the taxpayers' Washington-apportioned income. Therefore, we will rely on the ratio of taxable income (for all B&O and PUT line items) to IRS total income to determine taxpayers' Washington apportionment percentage under a VAT or margins tax. Although the Department's excise tax data we use includes PUT line items, for simplicity, we will refer to this as simply the "B&O data" or the "Department B&O data."

Methodology

VAT-MT Model Steps
The steps involved in the VAT-MT Model include the following:

1. Clean IRS 1120/1120S/1065 microdata and the Department B&O data;
2. Match taxpayers in IRS and the Department B&O data to determine Washington apportionment;
3. Calculate corporations and partnerships' 2017 value added tax base;
4. Set margins tax parameters and calculate corporations' and partnerships' 2017 margins tax base;
5. Impute data for sole proprietors;
6. Project growth in tax bases after 2017;
7. Calculate tax rates for the subtraction method VAT or margins tax to replace B&O revenues for the 2017-2019 fiscal biennium;
8. Calculate 2017 tax as a percentage of total business revenue by NAICS, and total revenue; and
9. Report results.

1. Clean IRS 1120/1120S/1065 Microdata and the Department B&O Data

IRS Microdata

We will collect the variables shown in Table 3 for taxpayers with Washington nexus filing a Form 1120, Form 1120S, or Form 1065 in tax year 2017. There are subtle differences between the variables available in Forms 1120, 1120S, 1065. Since we will match this data to B&O data, which does not carry the same distinctions

between C-Corp, S-Corp, and partnerships filers, we plan to stack the data from each of the IRS forms and create a variable to identify the Form from which the record was pulled.

Table 3: Variables from Forms 1120, 1120S, and 1065

Identifiers/General	Income	Deductions / Costs
- FEIN - Name Variable(s) - Tax Year - Fiscal Month - City - Address - Zip Code - State - Consolidation - Parent Name/FEIN - NAICS	- Gross Receipts/Sales - Dividends - Interest Income - Gross Rents - Gross Royalties - Capital Gain Net Income - Net Gain – Form 4797 - Other Income - Total Income	- Cost of Goods Sold - Compensation of Officers - Salaries & Wages - Repairs & Maintenance - Bad Debt - Rent Expense - Taxes & Licenses - Interest Deductions - Charitable Contributions - Net Depreciation - Depletion - Advertising Expenses - Pension/Profit Sharing/ Employee Benefits - Other Deductions - NOL Deductions - Special Deductions - Total Deductions

Forms 1120, 1120S, and 1065 subtract COGS from gross receipts in line 2 to arrive at gross profits. The forms then add the other income items to gross profits to arrive at total income. We will therefore add COGS back to total income to arrive at a definition of total income that is more comparable to taxable income in the B&O data. We will also subtract the bad debt deduction from taxpayers' total income to make it more comparable to taxable income in the B&O data (and will reduce total deductions by the same amount).

Hereafter, when we refer to "adjusted federal income," we refer to total income with COGS added back and bad debt subtracted.[38] The IRS definition of income has other subtle differences compared to B&O gross receipts. For example, B&O taxable income excludes proceeds from sale and rental of real estate, while IRS total income includes such items. We will consider further adjustments to improve the comparability of IRS total income to B&O taxable income.

> **Technical Advisory Group Question 2**
> *We plan to add back COGS and subtract bad debt from IRS total income (Line 11 of Form 1120) to improve comparability with B&O taxable income.* **What other adjustments to IRS total income will improve comparability with B&O taxable income? How can we calculate these?**

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[38] We will examine how differences between Washington and IRS definitions of bad debts may affect the model.

Department of Revenue B&O Data

We will use the Department B&O data to match taxpayers' Washington-apportioned B&O taxable income to the IRS microdata. Therefore, in Step 1 we will primarily pull variables from the Department B&O data that will help identify and match taxpayers across datasets (e.g., when the FEIN is missing or the IRS taxpayer is a consolidated group). Refer to Table 4.

Table 4: Department of Revenue variables for matching Washington-apportioned gross receipts to IRS microdata (quarterly data, 2016-2017)

Taxpayer Identifier / General	Account Line-Specific
- Washington Account ID - FEIN - Name Variable(s) - Address - City - County - Zip Code - State - NAICS - Customer Type (e.g., corporation, individual, municipality, non-profit)	- Gross Receipts - Taxable Income - Tax Due [We will sum across all B&O and PUT line codes for a given taxpayer in a given quarter.]

In addition, individual taxpayers/sole proprietors do not file Form 1065 or Form 1120, but they do appear in the B&O data (and we assume they would be subject to a VAT or margins tax). Therefore, we will separate the B&O data for these taxpayers and will ultimately impute values for such persons *after* we match the data for partnership and corporations in Step 2. To ensure matching with the 2017 IRS microdata (which may have a fiscal year end as early as January 2017), we will initially pull B&O data for each quarter in calendar year 2016 and 2017.

Apart from the identifying variables, for each Department of Revenue taxpayer, our data will also include gross receipts, taxable income, and tax due. For a given taxpayer in a given quarter, we will sum these variables across all B&O and PUT line codes (e.g., adding gross receipts for the retailing, wholesaling, and manufacturing line codes).[39]

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[39] Since we assume the subtraction method VAT or margins tax will retain the limited deductions allowed under the B&O tax (e.g., bad debt, cash and trade discounts, and certain adjustments for interstate activities), we will rely on B&O taxable income – not gross receipts – to match with total income in the IRS microdata.

2. Match taxpayers in IRS and Department of Revenue B&O data

Matching Process

In Step 2, we will match taxpayer records between the IRS microdata and the B&O tax data in order to determine the portions of federal tax returns apportioned to Washington under a subtraction method VAT or a margins tax. The simplest case will be a one-to-one match of FEINs of unconsolidated taxpayers. Figure 2 shows this case with taxpayers 1, 4, and 6.

Based on our assumptions that:

1. The subtraction method VAT and margins tax will use the current B&O apportionment formula; and
2. All categories of income that are taxable (nontaxable) under the B&O will be taxable (nontaxable) under the VAT/margins tax,[40]

it follows that the taxpayer's B&O taxable income amount is also their income amount under a subtraction method VAT or margins tax.[41] Therefore, the percentage of matched taxpayer's federal tax return that is apportioned to Washington is simply the ratio of their B&O taxable income to their adjusted federal income.[42] The middle panel of Figure 2 represents this ratio for taxpayers 1, 4, and 6 with the dark shaded portion of the bars.
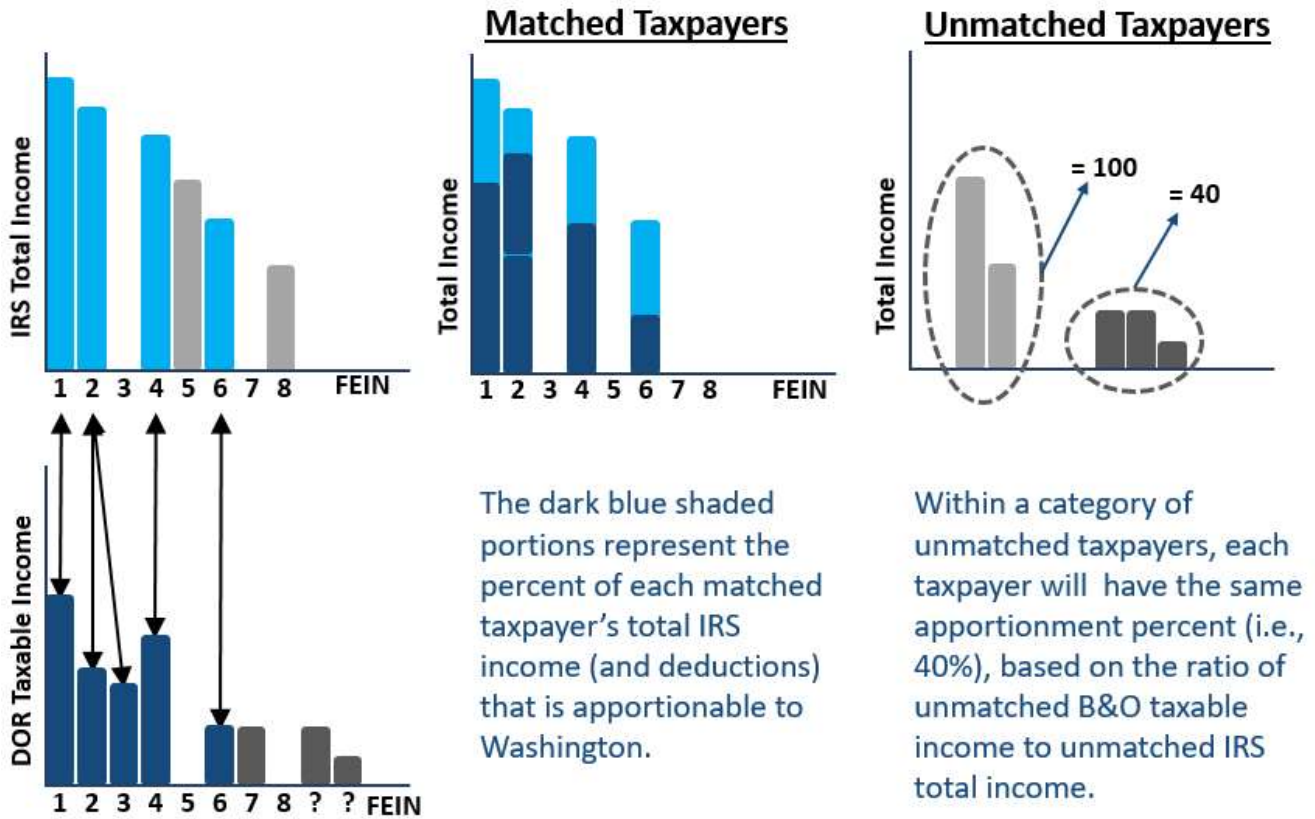
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[40] Before factoring in deductions for purchases of intermediate goods
[41] This also assumes that the tax periods align for a given taxpayer between the IRS microdata and the B&O data.
[42] After adding back COGS and subtracting bad debt form IRS total income, and making other necessary adjustments to align the definition with B&O taxable income.

Figure 2: Simplified representation of the matching process to determine taxpayers' Washington apportionment percentage

The dark blue shaded portions represent the percent of each matched taxpayer's total IRS income (and deductions) that is apportionable to Washington.

Within a category of unmatched taxpayers, each taxpayer will have the same apportionment percent (i.e., 40%), based on the ratio of unmatched B&O taxable income to unmatched IRS total income.

In Figure 2, taxpayers 2 and 3 file a consolidated federal return (but file B&O taxes separately), and are matched accordingly. Therefore, to determine the portion of taxpayer 2's federal return that is apportioned to Washington, we will use the ratio of the sum of taxpayer 2 and taxpayer 3's B&O taxable income to taxpayer 2's consolidated adjusted federal income. Refer to taxpayer 2 in the middle panel of the figure.

Unmatched Taxpayers

All matched accounts will use the four quarters of B&O data most closely corresponding to the company's tax year in the IRS microdata. For example, consider a company with a July 31, 2017 fiscal year end. When matching the company in the IRS data, we will match to the B&O data for Q3[43] and Q4 of 2016 and Q1 and Q2 of 2017. If, for a given taxpayer, we match the IRS microdata to four B&O quarters besides the calendar year, we will adjust all income and IRS deduction amounts based on the average growth in taxable income of all B&O taxpayers' between the periods. This will allow us to treat the Business VAT/MT Model as covering calendar year 2017 (before projecting forward for future periods).

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[43] Q3 201x refers to the third quarter of the 201x calendar year.

Unmatched Taxpayers

Finally, we must handle unmatched accounts. We plan to divide the unmatched accounts for calendar year 2017[44] into three categories, based on the address as reported in their IRS or Department of Revenue accounts: (i) Washington; (ii) Oregon and Idaho; or (iii) other. Within each of these categories, we will determine a single Washington apportionment percentage that we will assign to all unmatched records, based on the ratio of total unmatched B&O adjusted federal income to the total unmatched adjusted federal income on federal returns. Refer to the right panel of Figure 2.

> *Technical Advisory Group Question 3*
> *We group unmatched B&O tax accounts and IRS returns based on state (i.e., 1. WA, 2. OR/ID, or 3. Other). We then determine an average Washington apportionment percentage within these groups, which we assign to all unmatched accounts in the group.* ***Should we group by additional variables, bearing in mind, for example, that the IRS and the Depratment data may assign the same taxpayer to different NAICS codes?***

Once we identify the taxpayer matches between the IRS microdata and the B&O data, we will select the appropriate fiscal quarters in the B&O data to match to the tax year in the IRS microdata. We will use the ratio of B&O taxable income to adjusted federal income to estimate the taxpayer's Washington apportionment percentage.

Figure 3 summarizes the matching process, depending on whether an IRS account is consolidated and whether it has a FEIN match in the Department data. For consolidated taxpayers, it will not always be clear if we have identified all of the relevant affiliates in the B&O data. In addition to using FEINs to match taxpayers, for larger taxpayers, we will also use public information (e.g., SEC Form 10-K list of subsidiaries) in the matching process. In many cases, we will treat small consolidated taxpayers as unmatched, even if we have two or more apparent affiliate matches in the B&O data.

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[44] Note, after matching four quarters of a taxpayer's B&O data to an IRS account, we will discard the taxpayer's B&O data from all other quarters.

Figure 3: Summary of process for matching B&O data and IRS microdata
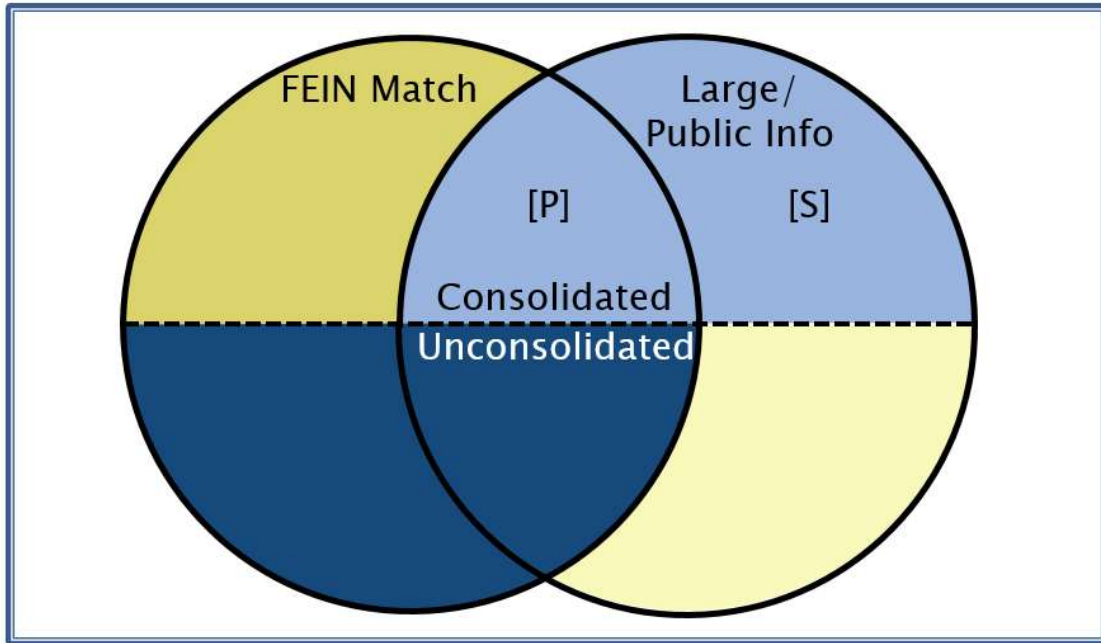
3. Calculate Taxpayers' 2017 Value Added Tax Base

In Step 3, we will calculate each corporation and partnership's 2017 value added tax base, based on their IRS Form 1120/1120S/1065 and the Washington apportionment percentage identified in Step 2. We estimate these taxpayers' total (national/international) value added as:

Equation 4: Total value added

$$Total\_Value\_Add = Total\_Income - Cost\_of\_Intermediate\_Goods\_Svcs$$

Where:

$$Cost\_of\_Intermediate\_Goods\_Svcs \\ = COGS - Cost\_of\_Labor - \Delta Inventory + Rent + Advertising + Other\_Deductions$$

Cost of labor and change in inventory are components of COGS and are not included on page 1 of the corporate/partnership tax returns. Therefore, we do not have corporations' taxpayer-level data on these items. However, the IRS published 2015 Statistics of Income for Form 1125 (Cost of Goods Sold), by NAICS sector. Using SOI, we will determine each sector's average cost of labor and change in inventory as a percentage of COGS, and will apply this percentage to each taxpayer to estimate their cost of labor and change in inventory.

We will then estimate the portion of each corporation and partnership's value added that is included in Washington's VAT tax base by applying their Washington apportionment percentage, as determined in Step 2.

Equation 5: Washington Subtraction Method VAT tax base

$$WA\_Value\_Add = WA\_Apportion\% \times (Total\_Income - Cost\_of\_Intermediate\_Goods\_Svcs)$$

4. Set Margins Tax Parameters and Calculate Corporations' and Partnerships' 2017 Margins Tax Base

As discussed in the *Error! Reference source not found.* section, we assume that under a margins tax, taxpayers will claim the largest available deduction available. That is, corporations and partnerships' margins tax base will be:

Equation 6: Margins tax deduction amount

$$Margins\_Tax\_Deduction^{45} = Max(COGS, Compensation, \$1,000,000, 30\% \times Total\ Income)$$

In Step 4, we will enter these parameters into the model to determine the maximum of these values for each taxpayer. Refer to the ***Application & Measurement of Margins Tax Deductions*** assumption for a discussion of the line items we will use to measure these potential deductions. We will write these parameters flexibly to allow modelling of alternative structures and parameters.

Equation 7: Total Washington margins tax base

$$WA\_Margins\_Tax\_Base = WA\_Apportion\% \times (Total\_Income - Margins\_Tax\_Deduction)$$

5. Impute Data for Sole Proprietors

The discussion thus far applies to corporation and partnership data and we set aside the B&O data for individuals in Step 1. Individuals/sole proprietors account for less than one percent of B&O tax collections and would likely account for a smaller percentage of the tax base under a subtraction method VAT or margins tax. However, rather than omitting this portion of the tax base altogether, in Step 5 we will impute data for individuals/sole proprietors in the B&O data.

We will match individuals/sole proprietors to partnerships in the same two-digit NAICS from the same state grouping (WA, OR/ID, or other). We will match them to the partnership in that grouping with the nearest taxable income. We will impute the sole proprietor's Washington apportionment percentage (and from that determine adjusted federal income) based on the matched partnership. We will then determine deduction amounts for individuals/sole proprietors as a percentage of adjusted federal income.

6. Project Growth in Tax Bases after 2017

In Step 6, we will project changes in the value added tax base and margins tax base for years after the 2017 calendar year. We considered projecting both tax bases using either a macro or micro approach.

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[45] The total margins tax deduction amount is adjusted for the taxpayer's Washington apportionment percentage, as determined in Step 2.

2018 and 2019 Growth in VAT Tax Base

For projecting the results of the 2017 VAT analysis to the 2018 and 2019 calendar years, we believe little accuracy, if any, is lost by using a macro approach. However, any proposals or requests that require estimates of subtraction method VAT revenues for 2020 or later may require more flexibility than macro forecasts allow. Although it is not required for purposes of the December 2020 preliminary report, we will consider ways to forecast and impute microdata for a VAT future years.

The VAT tax base, in theory, corresponds closely to Washington's gross domestic product (GDP). Therefore, we will estimate Washington's total VAT tax base in year t=2018, 2019 using a macro approach:

Equation 8: Calculation of VAT tax base in 2018 and 2019

$$VAT\_Tax\_Base_{Wa,t} = VAT\_Tax\_Base_{Wa,2017} \times \frac{GDP_{Wa,t}}{GDP_{Wa,2017}}$$

We will use Bureau of Economic Analysis estimates of Washington's GDP by year.

2018 and 2019 Growth in Margins Tax Base

The margins tax under consideration allows taxpayers to choose between one of four deductions. As a result, the margins tax base is less neutral than the VAT tax base and there is no clear candidate for a macroeconomic variable to project the growth of the margins tax base. Lacking this, we will construct projected 2018 and 2019 federal returns data based on the 2017 federal returns, using historical B&O data to project growth in taxpayers' taxable income and deductions.

Key information for the 2018 and 2019 calendar years that we will identify from the historical B&O data includes:

- Net change in the number of taxpayers in the B&O tax base[46] since 2017; and
- Net change in total B&O taxable income since 2017.

In addition, we will identify the matched taxpayer accounts from the 2017 tax year that correspond to "new" B&O accounts in calendar year 2017. We will average each of the income and deduction amounts for such taxpayers in the 2017 IRS microdata, and will use these averaged values (adjusted for inflation) to impute values to "new" taxpayers in 2018 and 2019. The number of new accounts imputed in the IRS microdata for 2018 and 2019 will correspond to the net change in the number of taxpayers in the B&O tax base each year.

After imputing values for "new" taxpayers, we will assign any leftover increase in total B&O taxable income during the period to existing taxpayers. We will distribute this taxable income in proportion to the existing companies' 2017 Washington-apportioned income. For purposes of the VAT-MT Model, we will assume that for all existing taxpayers, IRS deductions as a percentage of adjusted federal income will remain unchanged from 2017. We will adjust 2018 and 2019 deduction amounts accordingly. Depending on time constraints, we

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[46] The number of taxpayers in a given year is defined as the number of businesses with positive taxable income that year.

will consider refinements to this approach, such as forecasting the growth of specific deductions (such as compensation, wages, and benefits, and cost of goods sold), or applying growth assumptions based on NAICS.

> ***Technical Advisory Group Question 4***
> *To estimate the 2018 and 2019 VAT tax base and margins tax, we start from the estimated 2017 tax bases. For the VAT, we currently plan to project the 2018-19 tax base based on Washington's GDP growth rate for 2018-19. For the margins tax, we plan to rely on historical B&O data as discussed in Step 6.* **How can we refine our approach to more accurately project the 2018 and 2019 VAT tax base and margins tax base?**

7. Calculate Tax Rates for the Subtraction Method VAT or Margins Tax to Replace B&O Revenues for the 2017-2019 Fiscal Biennium

In step 7, we will calculate the tax rates necessary to replace the B&O revenues for the 2017-2019 fiscal biennium. For the subtraction method VAT, we will also calculate the amount of revenues raised by a 2.2% subtraction method VAT. Using the tax bases constructed in the previous steps, this is straightforward.

One small issue relates to timing. Since the Washington fiscal biennium covers July 1, 2017 - June 30 2019, we must estimate and remove the portion of the calendar year 2017 and calendar year 2019 tax bases that fall outside the fiscal biennium. Specifically,

- We will determine the portion of each year's value added tax base assigned to a given quarter based on BEA's quarterly estimates of Washington's GDP.
- We will determine the portion of each year's margins tax base assigned to a given quarter based on the total amount of quarterly B&O taxable income.

8. Calculate 2017 Tax Share as a Percentage of Total Business Revenue by NAICS and Total Revenue

In step 8, we will separately estimate tax paid under a subtraction method VAT or margins tax for certain categories of businesses and will compare this with the current tax structure. We will perform this analysis for the 2017 calendar year, by the following categories:

- Industry (NAICS sector); and
- Amount of total income (per federal income tax data)

Tentatively, we plan to use the categories of industry, and size as shown in Table 5. We may collapse certain categories as necessary to protect confidentiality and/or based on requests from the tax structure work group.

Table 5: Proposed categories of business activity to analyze

Industry	Amount of Total Income
• Agriculture, forestry, hunting & fishing	• Under $250,000
• Mining	• $250,000 - $1,000,000
• Utilities	• $1,000,000 - $2,500,000
• Construction	• $2,500,000 - $10,000,000
• Manufacturing	• $10,000,000 - $50,000,000
• Wholesale trade	• $50,000,000 - $250,000,000
• Retail trade	• Over $250,000,000
• Transportation & warehousing	
• Information	
• Finance & insurance	
• Real estate and rental & leasing	
• Professional, scientific & technical services	
• Management of companies	
• Administrative & support & waste mgmt.	
• Educational services	
• Health care & social assistance	
• Arts, entertainment & recreation	
• Accommodation & food services	
• Other services	
• Public administration	

Technical Advisory Group Question 5
*We currently plan to summarize tax paid as a percentage of total business revenue under a subtraction method VAT or margins tax, by NAICS sector and amount of total income. **Are there additional categories of taxpayers (or different groupings within these categories) for which we should calculate tax paid as a percentage of total revenue?***

For each of the categorizations, the ratio is based on total tax paid and total business revenue with Washington only.

We will generally[47] rely on the IRS microdata for taxpayers' NAICS sector classification. In some cases, Department of Revenue NAICS classifications will be more relevant to the businesses' Washington activities, but the B&O data NAICS is less practical in our analysis, since the unit of analysis in our data is IRS consolidated units. For larger matched taxpayers, we may use the Department-assigned NAICS code if it is clearly more appropriate.

We will classify a taxpayer's total income category based on its 2017 total income (in the IRS microdata), whether the income is apportioned to Washington or not.

We will calculate taxpayers' baseline tax paid under the current structure in two ways. First, we will calculate it based on the tax paid values in the B&O data, as matched to the IRS microdata. This will allow a more direct comparison of the differences in incidence under the alternative tax structures, since it will also use the IRS microdata's classifications of NAICS and total income. However, it is a somewhat indirect way of estimating taxes paid as a percentage of total business revenue under the current structure.

We will also directly calculate the 2017 taxes paid as a percentage of total business revenue for the categories summarized in Table 5, using the 2017 B&O data and the B&O classifications. This will more accurately capture the actual tax incidence of the B&O tax, but is an apples-to-oranges comparison with the alternative tax structures, since those calculations may have different classifications of NAICS and total income for the same taxpayer. (If the estimated tax paid in the B&O tax is similar for various categories of income, this will provide some validation of the modelling.)

9. Report Results

As discussed in further detail above, our task under the budget proviso is to estimate:

- The amount of revenue raised during the 2017-2019 fiscal biennium under a subtraction method VAT with a tax rate of 2.2%;
- The subtraction method VAT tax rate needed to replace the revenues raised during the 2017-2019 fiscal biennium by the B&O tax;
- The margins tax rate needed to replace the revenues raised during the 2017-2019 fiscal biennium by the B&O tax; and

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[47] For larger matched taxpayers, we may use the Department-assigned NAICS code if it is clearly more appropriate.

- Tax paid as a share of total (Washington) business revenue for various business activities, compared with the current tax structure.

In steps 1-8 of the Methodology section, we describe the modelling and estimation process. In step 9, we summarize the presentation of the results. Table 6 - Table 8 represent tentative templates for these summary tables.

Table 6: 2017-2019 fiscal biennium tax revenues under the subtraction method VAT proposed in Gates (2002)

Fiscal Period	Revenue: Current B&O Tax	Subtraction Method VAT (2.2% Rate)
Q3 2017		
Q4 2017		
Q1 2018		
Q2 2018		
Fiscal 2018		
Q3 2018		
Q4 2018		
Q1 2019		
Q2 2019		
Fiscal 2019		
Fiscal 2017-19 Biennium		

Table 7: 2017-2019 fiscal biennium tax revenues under the subtraction method VAT proposed in Gates (2002)

Fiscal Period	B&O Tax Rate(s)	Revenue Neutral Rate: Subtraction Method VAT	Revenue Neutral Rate: Margins Tax
Fiscal 2017-19 Biennium			

Table 8: 2017 tax paid as a percentage of total Washington business revenue, by tax structure and business category (refer to Table 5 for details on the business category classifications)

Business Category	Tax Paid as % of Business Revenue: B&O Tax (Department Data)	Tax Paid as % of Business Revenue: B&O Tax (IRS Data)	Tax Paid as % of Business Revenue: Subtraction Method VAT	Tax Paid as % of Business Revenue: Margins Tax
Agriculture, forestry.				
Mining				
……..				
Public Administration				
All Industries				
Under $250k				
$250k - $1m				
……..				
Over $250m				
All Income Amounts				

Technical Advisory Group Question 6
Factoring in time and resource constraints, are there additional details we should report in our results that would significantly improve:
- *The ability to validate the model;*
- *The usefulness of the results to policymakers.*

Other Questions for the Technical Advisory Group

Technical Advisory Group Question 7
Are there other features of a VAT or business margins tax that we should consider modelling in our analysis?

Technical Advisory Group Question 8
For all analyses, we welcome suggestions relating to data sources, methods, and references.

Ideas from the Technical Advisory Group
- TBD

Appendix A: References

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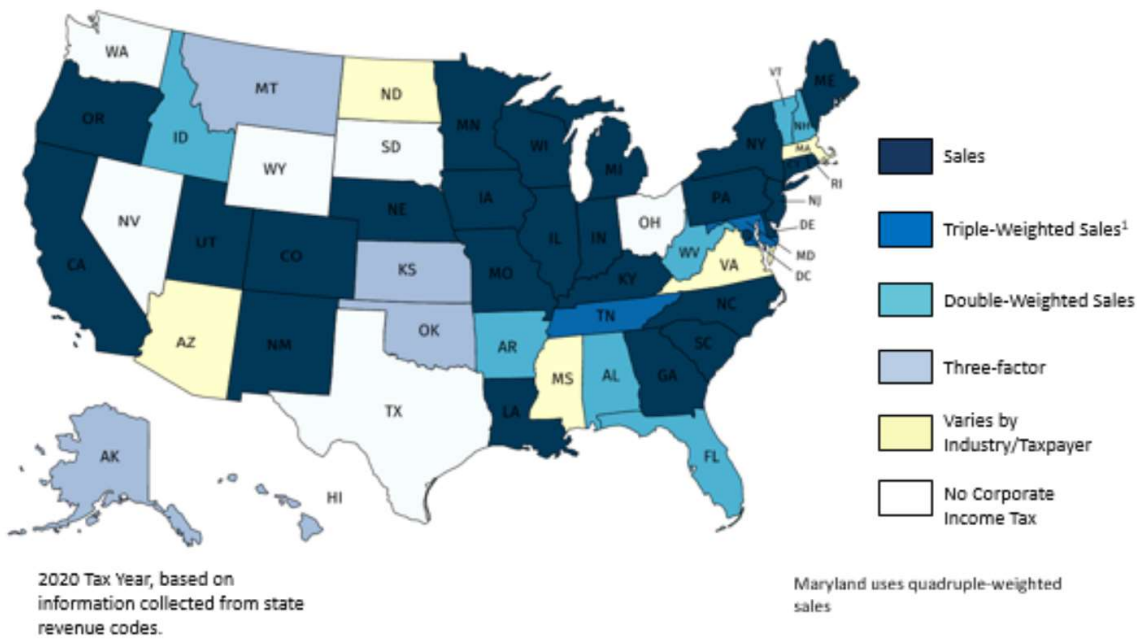## Appendix B: Single-Factor vs. Three-Factor Apportionment

Background

The 2002 Tax Structure Report recommended apportioning the income of multistate corporations using the three-factor formula or a three-factor formula with double weighted sales. We were asked to consider what apportionment method would be most likely to be adopted today if the State of Washington were to enact a corporate net income tax.

If the corporate tax were adopted today in Washington State, a single factor destination sales formula would be the most likely apportionment formula to be adopted. State trends, consistency with the other Washington taxes, and economic development reasons all favor a single sales factor.

States are increasingly adopting a single factor sales formula

In 2002, the dominant formula was the three-factor formula with double weighted sales. Today, a majority of jurisdictions with a corporate income tax use a single sales factor. Twenty-five states and the District of Columbia use single sales factor apportionment exclusively or with narrow exceptions. Five additional states either give taxpayers the option of using single sales factor or apply single sales factor apportionment to certain taxpayers. Another nine states use a three-factor apportionment method where sales is at least double-weighted. Only five states continue to use the "standard" three-factor apportionment.

Figure 4: State corporate income tax apportionment formulas

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

Maryland uses quadruple-weighted sales

The department currently apportions income for B&O tax and retail sale tax consistent with sales

The single weighted sales factor is consistent with how the Department apportions income and sales for other Washington taxes. B&O tax and retail sales taxes are already sourced to the destination of the sale. To the extent we replaced the B&O tax with the net corporate income tax, the corporate income would be sourced consistent with the retail sales tax.

Economic development and political considerations favor a single sales factor

Finally, economic development and political considerations favor a single factor sales formula. Under a three-factor formula, the property and payroll factors increase the share of income assigned to a corporations' home state. The greater the investment in plant, offices, and employees in a state, the greater the share of the income will be apportioned to that state. In contrast, the sales factor assigns sales to where the goods are sold and shipped to customers. Giving exclusive weight to the sales factor is designed to encourage taxpayers to locate in the state because their in-state capital and labor will not increase their corporate tax liability, and their sales will count only insofar as they have a market in the state. In addition, the sales factor captures more income from out-of-state businesses. Accordingly, the sales factor tends to be more politically palatable and encourages economic development in a state.

Conclusion

For these reasons, we are planning to use single sales factor apportionment in our main analysis to determine the potential impact a subtraction method VAT/margins tax would have in Washington. However, we will also model three-factor apportionment as an alternative that may be considered or requested.