

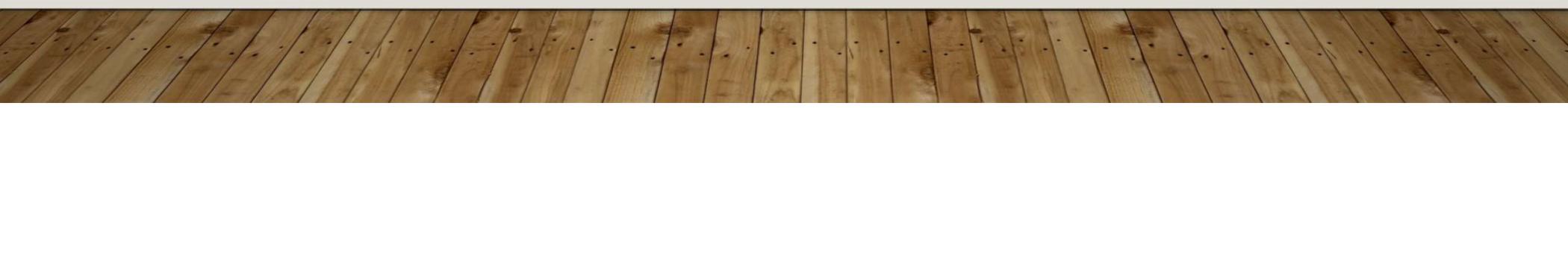
AN ESSAY ON POTENTIAL ECONOMIC INCIDENCE (TAX SHIFTING) : WASHINGTON STATE TAX REFORM

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NOVEMBER 9, 2021

SCOPE OF THIS ESSAY

Review Economic Theory and Empirical Evidence on Economic (Not Statutory) Incidence of Four of the Types of State Taxes Being Considered in Washington State Tax Reform:

- Sales Tax
 - Personal Income Tax
 - Business and Occupation Tax
 - Value Added Tax
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BASIC DISTINCTION BETWEEN ECONOMIC INCIDENCE & STATUTORY INCIDENCE OF TAXES

Statutory Incidence assumes no behavioral response to the application of the tax:

- On this view, the taxpayers identified by statute (enacted law) “pay” the tax, according to the statutory tax rate and the tax base to which that rate is applied

Economic Incidence, by contrast, does assume behavioral responses to the tax by affected parties on the demand and supply sides of the market

RELEVANCE OF THIS DISTINCTION FOR PURPOSES OF ALTERNATIVE TAXES & TAX STRUCTURES

Why does this statutory/economic incidence distinction matter?

- Taxpayers actually do respond to taxes and seek (assumed legally) to minimize their “burden,” i.e., the taxes that are ultimately paid & collected. Thus, ultimately, taxes collected for public purposes will be different (and generally less) than the statutory tax rate multiplied by the expected legal taxable base

RELEVANCE & IMPORTANCE OF STATUTORY versus ECONOMIC INCIDENCE (continued)

Thus, Behavioral Responses to Statutory Taxes affect several parties:

- The “Nominal” Taxpayer (identified in statute)
- Consumers of the Good or Service
- Producers of the Good or Service
- Factors of Production for the Good or Service
 - ❑ Labor, Capital, & (where relevant) Land

POTENTIAL TYPES OF STATE-LEVEL TAXES NOT EXPLICITLY REVIEWED IN THIS ESSAY, BUT BEING CONSIDERED BY DOR & TAG

- Corporate Income/Net Receipts Tax
- Margins Tax (Modeled after the Texas Franchise Tax)
- Employer Compensation Tax
- Wealth Tax

Note: Richard Dadzie of DOR has already presented to the TAG on the economic incidence of corporate income and property taxes

OUTLINE OF THIS PRESENTATION

1. Theory on Economic Incidence of Four Tax Types Examined in Detail
2. Empirical Methods for Estimating Economic Incidence
3. Empirical Evidence of These Tax Types' Economic Incidence
4. Concluding Summary and Questions for the TAG

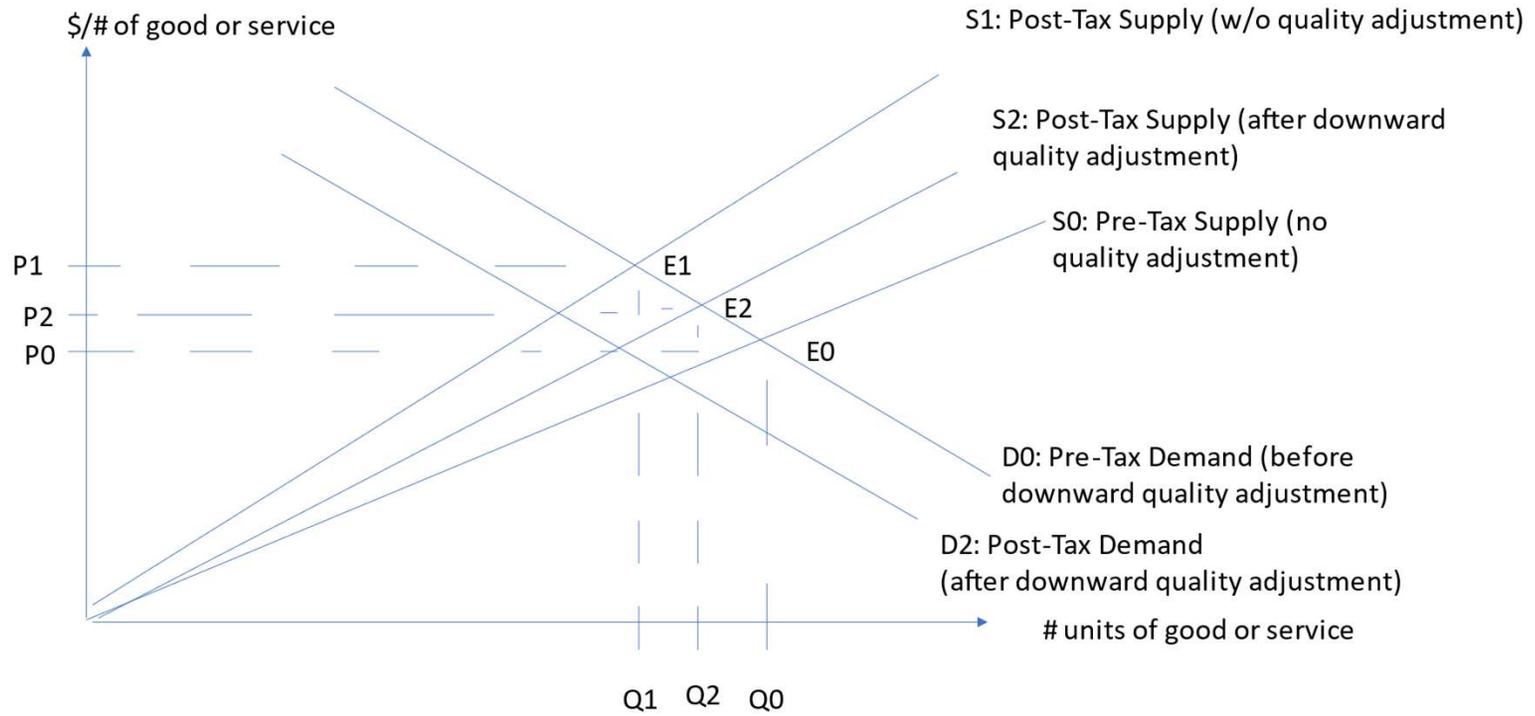
THEORY: SALES TAX INCIDENCE (highlights)

Assuming Quality is Not Controlled by the “Taxer” and Tax is Collected by the “Seller,” Sales Tax Behavioral Response Depends on Whether the Tax is \$ per unit of quantity sold or a % of total purchase price (*ad valorem*):

Equilibrium Behavioral Response (after quality adjustment)

Type of Sales Tax	Effect on Price	Effect on Quantity	Effect on Quality/Unit
Unit (\$/unit)	↑	↓	↑
Ad Valorem(% tax)	↑ (but less than w/ unit tax)	↓	↓

FIGURE 2: INCIDENCE OF AD VALOREM SALES TAX ON QUANTITY, PRICE, AND QUALITY (Variable Quality/Unit)



THEORY: PERSONAL INCOME TAX INCIDENCE

- Start with the Labor-Leisure (“Household Production”) Tradeoff:
 - In equilibrium, marginal return on paid work needs to equal marginal return on leisure (or put differently, leisure and non-paid household production)
- Consider also other, potentially less demanding, means of conserving net income
 - Tax minimization strategies:, e.g., claiming income tax deductions, using tax shelters, increasing compensation share of non-taxed benefits

THEORY: INCIDENCE OF BUSINESS AND OCCUPATION (B&O) TAX

Background: Washington State's B&O Tax is Essentially a "Gross Receipts" Tax on Business Revenues

- Very Few Deductions, Allowed Often within Narrowly Defined Business Sectors
- No Deduction for Costs of Goods Sold
- Applies to All Revenues for In-State Manufacturing
 - In Contrast, for Service, Wholesaling, & Retail Sectors, B&O Tax Applies Only to In-State Customers (i.e., "Destination-Based")

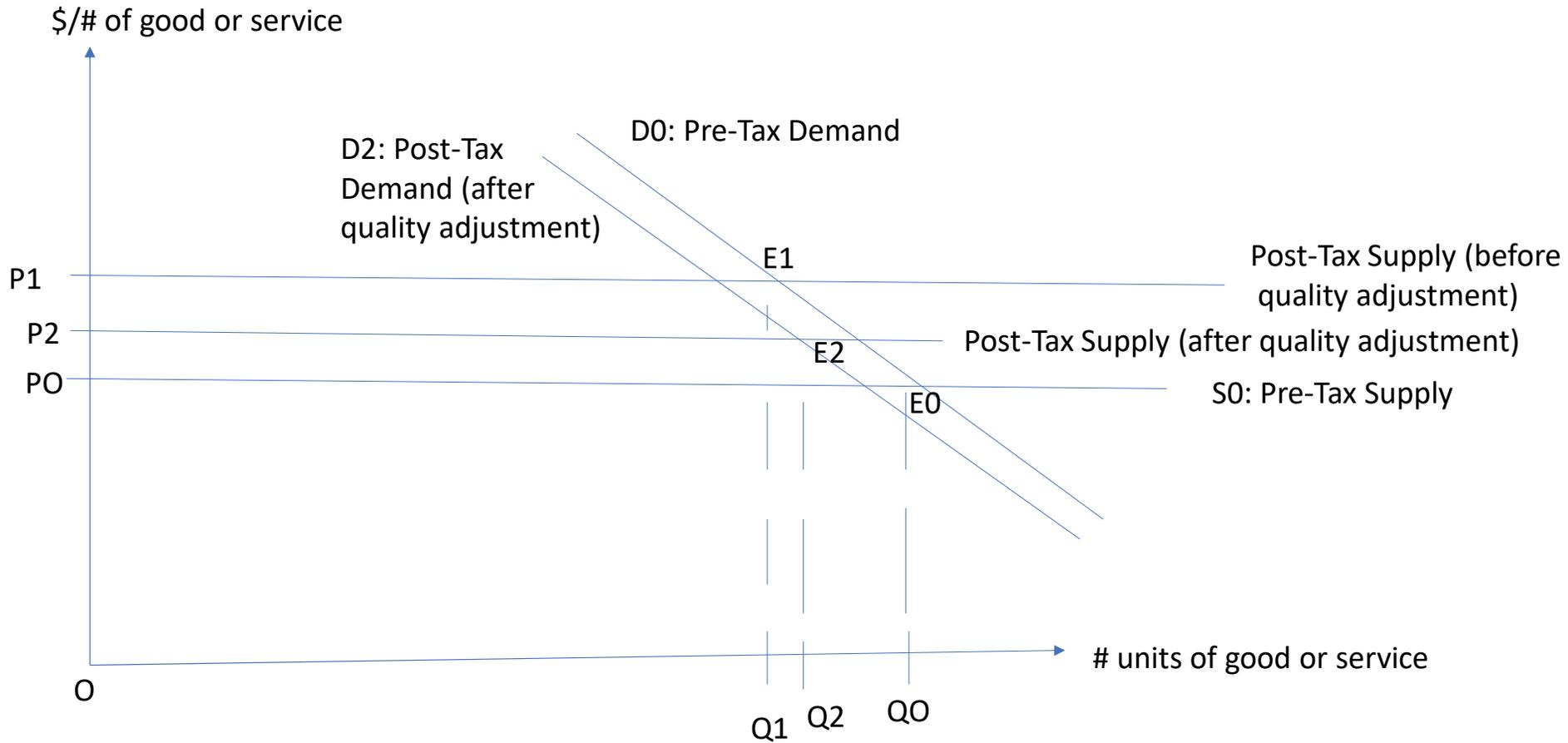
THEORY: BUSINESS & OCCUPATION TAX (CONTINUED)

Predictions for Equilibrium Price, Quality, and Quantity

(extending Barzel's theory to the B&O tax on revenues):

- Post-Tax **Price of Good or Service Will Rise**
- To Mitigate Post-Tax Loss of Demand Due to Price Increase and Reduce Marginal Cost/Unit of Output, **Seller Will Reduce Quality per Unit of Output**
- In Equilibrium, These Responses Will Result in **Reduced Quantity**

FIGURE 3: INCIDENCE OF B&O TAX ON QUANTITY, QUALITY, AND PRICE



THEORY: INCIDENCE OF A **NATIONAL** VALUE-ADDED TAX

View of a Broad-Based National VAT Is That Its Main Incidence Is on
Consumption:

- End-Product Sellers Will Raise Equilibrium Final (“Retail”) Price to Reflect the Total “Value Added” over Successive Production Stages
- Consumers Will Demand Less of the Product than before VAT
- Final Level of Price Will Reflect Quality Added over All Production Stages

THEORY ... INCIDENCE FOR A **STATE-BASED** VAT: NUANCES TO CONSIDER

- First, unlike Nations, (a) States Cannot Use Exchange Rates to Accommodate VAT Effects on Nominal Prices or (b) “Immigration” Policy to Constrain Mobility across States
- Second, If a State VAT is “Origin-Based” (i.e., Taxing In-State Production, but Not “Out-of-State” Production), End-Stage Sellers Will Adjust Wages and Prices to Offset “Importers” Non-Taxed Competitive Pricing Advantage – thus shifting the VAT’s incidence/burden (partially) away from consumers

EMPIRICAL METHODS FOR ESTIMATING EFFECTS OF TAXES ON ECONOMIC INCIDENCE

Generally Speaking, Two Basic Econometric Methods Are Used:

- **Partial Equilibrium Models** Use (Reduced Form) Statistical Regression Methods to Adjust for Factors Outside the Scope of the Particular Sector or Behavior Being Modeled (“Exogenous”)
- In Contrast, **General Equilibrium Models** Include Those Exogenous Factors in Examining How Tax Effects “Ripple” through the Larger Economic System (e.g., Returns to Owners, Real Investment)

EMPIRICAL EVIDENCE ON ECONOMIC INCIDENCE OF STATE SALES TAXES

- Russo (2005) Drew Several Tax Policy Conclusions (see p.13 of paper)
- Poterba (1996) Found ~ Full Shifting of Retail Price Effect to Consumers in 1945-1977 Period; but ~ 2/3 Shifting in 1925-1939
 - ❑ Current Market Environment (e.g., Substantial E-Commerce) and Antitrust Policy Suggest That Imperfectly Competitive Market Structures Can Alter Conclusions from Previous Studies on Incidence (p. 13 of paper)
- Ring (1999) Examined **Direct** Incidence: Avg Consumer Share ~ 59%

EMPIRICAL EVIDENCE ON ECONOMIC INCIDENCE OF STATE PERSONAL INCOME TAXES

- Long (1999) Found That Increased Marginal State Income Tax Rates Reduced Taxable Income Mainly Due to Higher Tax Deductions (& Higher Income Individuals More Responsive)
- Long Concludes -- comparing his findings with earlier work by Feldstein (1995) & Auten and Carroll's (1995) estimate of net tax rate elasticity = $\frac{2}{3}$: Chgs in Deductions More Important Than Other Tax Avoidance Strategies, Including Factor Supply Chgs

EMPIRICAL EVIDENCE ON INCIDENCE OF B&O (GROSS RECEIPTS) TAXES

Two OR Studies Seem Directly Relevant to Incidence WA State's B&O:

(1) Watson & Kaeding (2019) Developed a Short-Run & Long-Run **Simulation** Model of Incidence of OR's Commercial Activities Tax & Found (Compared to a VAT: Each Designed to Raise \$1 Billion):

- ❑ Would **Reduce Household Income** by 0.3% (> VAT's 0.2% Reduction)
- ❑ Would **Reduce Employment** by 0.31% (> VAT's 0.28% Reduction)
- ❑ Would **Reduce Investment** by 0.06% (<< VAT's 0.22% Reduction)
- ❑ Would **Increase Price Levels** by 0.40% (> VAT's 0.35% Increase): likely due to "tax pyramiding"

... INCIDENCE OF B&O (GROSS RECEIPTS) TAX (CONTINUED)

(2) WA State Tax Structure Committee (2002) Examined “Non-Neutralities” of WA State B&O Tax:

- “Tax Pyramiding’s” Avg Impact on Effective B&O Rate ~ 2.5X
 - Varies across Sectors: < 1% for Trade & Some Services; >3% for Some Types of Manufacturing
- Study Also Suggested that Pyramiding Creates Tax Incentives to Vertically Integrate

EMPIRICAL EVIDENCE ON INCIDENCE OF A STATE-BASED VAT

Study by Cline & Wilson (1995) Estimated Potential Distributional Effects of Replacing Minnesota's General Sales Tax with a VAT:

- Used CES Surveys of Consumption (which JCT, Sabelhaus, and Toder et al. regard as overstating regressivity of the consumer tax)
 - Estimated That 100% Destination-Based VAT Would Be Borne as Increased Retail Prices to In-State Consumers

(continued on next Slide ...)

(CONT.) ... CLINE & WILSON (1995) ON INCIDENCE OF A STATE-BASED VAT

- Estimated That VAT Apportioned 70% to Sales & 30% to In-State Production Would Be Borne 30% by Labor and Land
- Estimated That 100% Sales-Based Apportionment Would Be Much More Regressive Than MN's Existing Sales Tax
 - Alternatively, Estimated That a 100% Weight on In-State Production (Origin-Based) Would Be ~ Income-Neutral

CONCLUDING SUMMARY OF TAXES' ECONOMIC INCIDENCE

- **State Sales Tax:** Theory and Extant Evidence Suggest ~ Fully Shifted Forward to Retail Prices (2/3 to Total Shift)
- **State Personal Income Tax:** Theory Implies Fully Borne by Individuals But Extant Evidence (National Studies Only) Suggests Tax Avoidance Abounds through Allowed Deductions
- **State B&O (Gross Receipts) Tax:** Theory & Limited Evidence Consistent with Modest Price ↑, Investment ↓, ↓ Employment, ↓ Income
- **State VAT:** Theory Suggests It's Borne by Consumers, But Depends on Apportionment Weights (e.g., Origin-Based VAT Borne by Land and Labor Factors)

CONCLUDING QUESTIONS FOR THE TAG

- (1) To what extent can estimates from cross-country or cross-corporation (interfirm-level) data inform Washington state-level analysis regarding the expected effects and incidence of various state taxes?
- (2) Does existing, high-quality empirical evidence provide sufficient information to build Washington state economic models that would:
 - (a) accurately estimate the incidence and directional effects of different tax structures in our state, or
 - (b) at least would offer credible qualitative guidance on incidence?”