

Gross Receipts Taxes versus Sales Taxes: Tradeoffs for New Mexico

Andre Barbe, PhD

Presentation to Revenue Stabilization and Tax Policy Committee

Santa Fe, New Mexico

October 19, 2023

Disclaimer

This presentation is based on my 2014 PhD thesis on gross receipts taxes.

My expertise is in economic modeling in general, not the specifics of New Mexico's situation.

The views expressed here are solely those of the presenter, Andre Barbe. They do not necessarily reflect those of TechCongress, any U.S. Senate Committee, or any other group or individual.

The question: are sales taxes more efficient than gross receipts taxes (GRTs)?

- **Background:**
 - New Mexico has a “Gross Receipts tax” that has been the subject of much discussion
 - “Textbook” GRTs are widely viewed as less efficient than sales taxes, because GRTs tax business purchases in addition to consumer purchases
- **The Conundrum:**
 - But real-world sales taxes often tax business purchases too, and also exempt certain goods and services
 - A more narrow tax base requires a higher tax rate, and inefficiency increases as rate increases
 - So a textbook GRT might be more efficient than a real-world sales tax
- **Answering the question:**
 - I build an economic model to compare a service-exempting sales tax to a textbook GRT
- **My findings:**
 - A textbook GRT with no exemptions is more efficient than a sales tax that exempts services

Agenda for this presentation

What are GRTs and sales taxes?

Why are GRTs seen as inefficient?

What problems do real-world sales taxes have?

How do I compare a textbook GRT and a service-exempting sales tax?

What are the implications for New Mexico?

Introduction: what are gross receipts taxes?

Definitions: sales taxes and gross receipts taxes

A “textbook” gross receipts tax (GRT) is a tax on

- sales of goods and services
- to both consumers and firms

A “textbook” sales tax is a tax on

- sales of goods and services
- to consumer only

New Mexico’s “gross receipts tax”

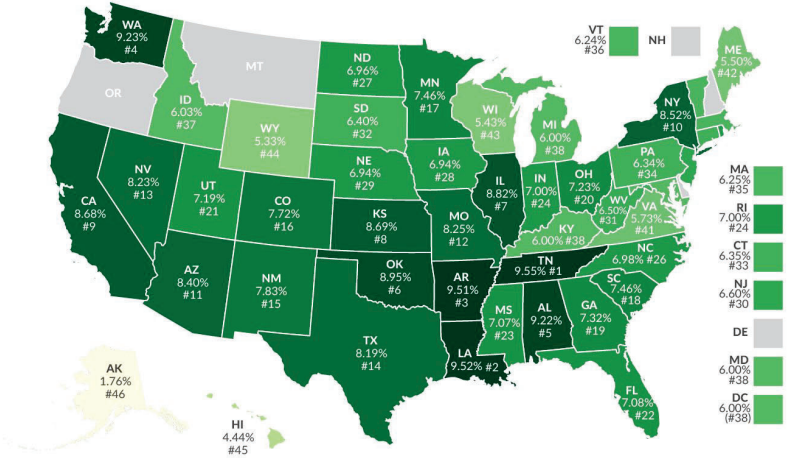
- Is a GRT in name only: it is not a “textbook” GRT.
- Is really a broad based sales tax that includes many services in its base ([Economic Development Department 2023](#))

When I say “GRT” in this presentation, I will be referring to a “textbook” GRT

Sales taxes are common, textbook GRTs are rare

How High are Sales Taxes in Your State?

Combined State & Average Local Sales Tax Rates, January 2021



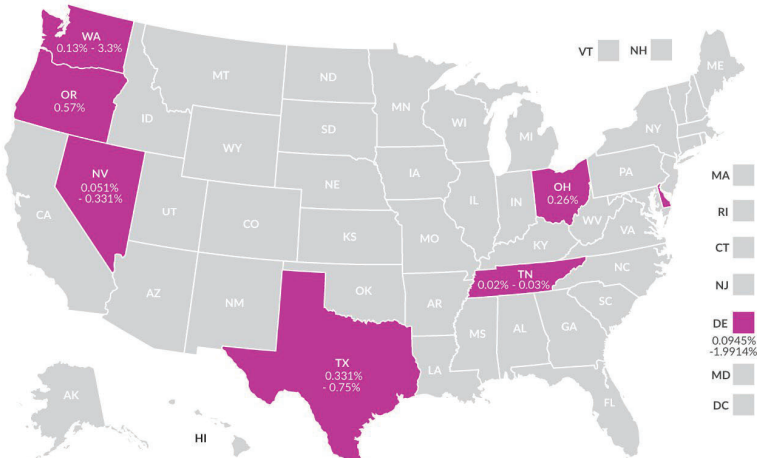
City, county and municipal rates vary. These rates are weighted by population to compute an average local tax rate. The sales taxes in Hawaii, New Mexico, and South Dakota have broad bases that include many business-to-business services. D.C.'s rank does not affect states' ranks, but the figure in parentheses indicates where it would rank if included. Sources: Sales Tax Clearinghouse; Tax Foundation calculations; State Revenue Department websites



TAX FOUNDATION @TaxFoundation

Does Your State Have a Gross Receipts Tax?

State Gross Receipts Taxes, January 2020



Note: Gross receipts taxes are complex business taxes imposed at a low rate but on a wide base of transactions, resulting in high effective tax rates that can vary by industry. These taxes also often have minimum taxes that can result in much higher effective rates for some small businesses. Source: Bloomberg Tax; state revenue departments; Weldon Cooper Center for Public Service.



TAX FOUNDATION @TaxFoundation

Source: Tax Foundation 2020 and ND.

Recent Legislative Activity on New Mexico's GRT

Several recent bills have targeted the GRT:

1. [SB 147 2023](#): add various deductions and exemptions to the GRT (signed)
2. [SB 38 2023](#): replace New Mexico's nominal GRT with a "textbook" GRT
3. [HB 367 2023](#): remove tax on certain business services
4. [HB 323 2023](#): rename GRT to "sales tax"
5. [HB 547 2023](#): reduce GRT tax rates (signed)

Why are gross receipts taxes inefficient?

What is economic efficiency and excess burden?

Definition of Excess Burden

- The "excess burden" or "deadweight loss" of a tax measures the inefficiencies created by taxation that result in a loss of economic welfare over and above the revenue collected.
- The most economically "efficient" tax minimizes this excess burden.

For example, consider a hypothetical tax on hamburgers

- Some people will continue buying hamburgers.
 - They pay the tax and this raises revenue for the government.
 - This is the direct burden of the tax.
- Some people will switch from hamburgers to hot dogs, even though they like hot dogs less.
 - They do not pay the tax and no longer eat their preferred food.
 - This is the excess burden of the tax.

Why are GRTs inefficient?

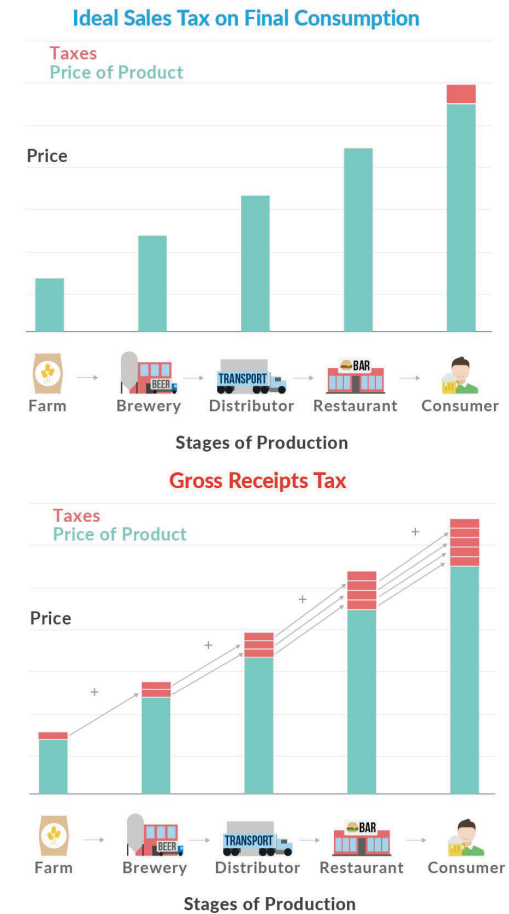
A GRT taxes purchases by both businesses and consumers

If you tax business purchases, you will see multiple applications of the statutory tax rate at each stage of the supply chain. Also known as “tax pyramiding”.

Under GRTs, different consumer goods are effectively taxed at different rates, depending on the number of stages in the supply chain for that good

Source: Tax Foundation ([ND](#))

The Effect of Tax Pyramiding Under a Gross Receipts Tax



But sales taxes have problems too

“Real-world” sales taxes are different from “textbook” sales taxes

The two major problems of “real-world” sales taxes:

- Sales taxes also tax business purchases
 - Textbook sales taxes exempt business purchases
 - “Real-world” sales taxes get up to 40% of their revenues from taxing purchases by businesses ([Ring 1999](#))
- Sales taxes also have many exemptions
 - Sales taxes often do not tax all goods and services bought by consumers.
 - Exemptions are often seen for services (especially health care and education) and food.
 - Exemptions mean that a higher tax rate is needed to get the same revenue, and the inefficiency of a tax increases as its rate increases

Previous literature on sales tax reform had similar caveats

Russo (2005) examined several options for sales tax reforms including broadening the tax base. Found moving to a consumer-only base improves efficiency

Hawkins (2002) looked at impact of tax exemptions on consumer purchasing decisions. Found that business to business taxes can sometimes increase efficiency because they tend fall more heavily on goods and services that are price-inelastic or sales tax exempt

Answering the Question: Are GRTs less efficient than sales taxes?

I build an economic model to compare a real-world sales tax to a textbook GRT

This model has the key features of the problem:

1. Tax pyramiding (from business to business taxation)
2. Substitution by firms and consumers as prices change
3. Sales tax has exemptions for education, healthcare, and IT and management services

Notable assumptions that are unlike New Mexico:

- I model an “average” U.S. state, not New Mexico specifically
- I do not exempt food from my sales tax

What exactly do my GRT and sales tax look like?

Sales Tax: The sales tax does not tax consumer or business purchases of education, healthcare, IT, and management services. For other types of purchases, consumers taxed at 1 % tax rate, while business purchase taxed at a 0.64 % tax rate (40% of total sales tax revenues).

GRT: The GRT applies to all sales of all goods and services to all firms and consumers. Rate is 0.41 percent. Raises the same revenue as the sales tax.

Table 1: Tax Rate Assumption for Different Goods and Services in GRT vs Sales Tax (Percent)

Type of Purchase	Sales Tax	GRT
Business purchases of education, health care, etc.	0.00	0.41
Business purchases of other goods and services	0.64	0.41
Consumer purchases of education, health care, etc.	0.00	0.41
Consumer purchases of other goods and services	1.00	0.41

Source: Barbe and Zodrow (2014) page 13.

Results of the model

Sales tax taxes business to business purchases more than the GRT does

Surprisingly, the services-exempting sales actually taxes business to business sales (aka intermediate goods) more than the GRT does

The GRT only receives 33.7 percent of its revenue from the taxation of business inputs, as opposed to 40 percent for the sales tax.

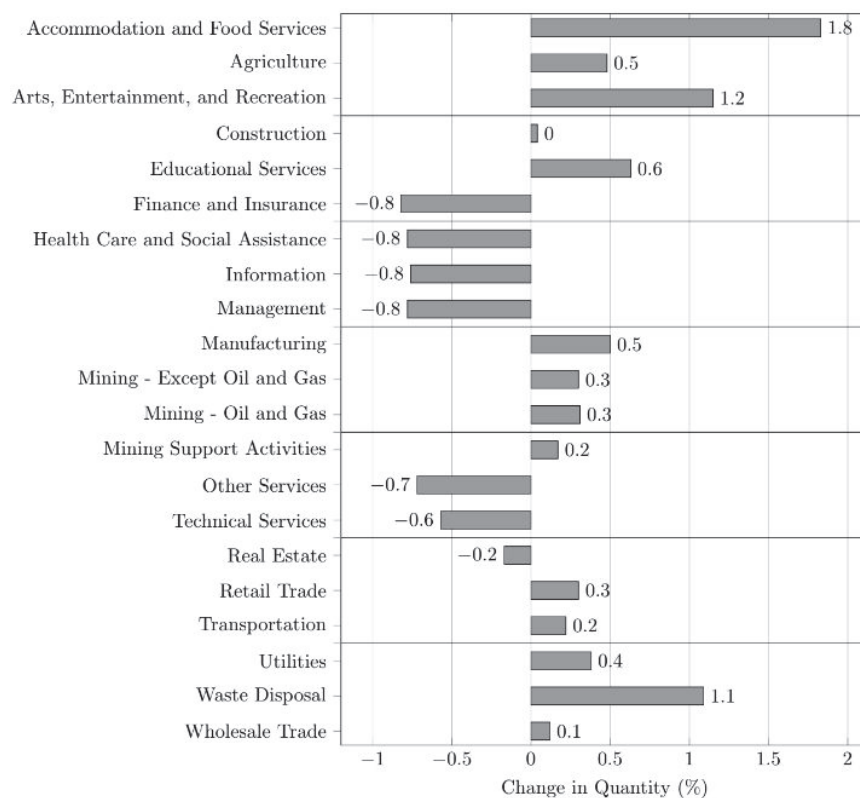
This is because the base broadening that occurs under the GRT, relative to the sales tax, falls less heavily on intermediate goods than the original sales tax base did

Replacing this sales tax with a GRT reduces the excess burden of taxation by 6.8 percentage points

Figure 1: Producer Output Change Due to Moving to a Gross Receipts Tax from a Retail Sales Tax, by Sector

Largest output increases are seen in sectors whose output were taxed by sales tax, and which used lots of non-service goods as inputs

Source: Barbe (2014) page 69.



Conclusions and Caveats

Differences between my model and New Mexico 1: Food

My sales taxes' exemptions are different from those in New Mexico

My sales tax exempts services, but taxes food.

But New Mexico's exempts food but taxes services. ([Tax and Revenue Department 2021](#))

Implication: New Mexico's sales taxes is likely more efficient than the sales tax I model

Differences between my model and New Mexico 2: Oil and Federal government facilities

My results are for an “average” state.

But New Mexico’s economy is heavily focused on oil and the national labs (NM LCS, 2023).

GDP by Sector, New Mexico vs US, 2021		Billion USD	
	Industry as Share of New Mexico GDP / as Share of US GDP	NM	US
All industry total		110	23,315
Private industries	-13%	83	20,502
Agriculture, forestry, fishing and hunting	32%	1	207
Mining, quarrying, and oil and gas extraction	487%	9	334
Utilities	9%	2	378
Construction	-4%	4	945
Manufacturing	-64%	4	2,497
Durable goods manufacturing	-68%	2	1,395
Nondurable goods manufacturing	-59%	2	1,102
Wholesale trade	-47%	4	1,444
Retail trade	6%	7	1,391
Transportation and warehousing	-11%	3	688
Information	-57%	3	1,313
Finance and insurance	-53%	4	1,959
Real estate and rental and leasing	-8%	13	2,927
Professional, scientific, and technical services	1%	9	1,843
Management of companies and enterprises	-68%	1	448
Administrative and support and waste management and remediation services	-4%	3	746
Educational services	-52%	1	270
Health care and social assistance	3%	8	1,736
Arts, entertainment, and recreation	-24%	1	219
Accommodation and food services	34%	4	686
Other services (except government and government enterprises)	12%	2	470
Government and government enterprises	98%	26	2,813
Federal civilian	245%	8	523
Military	304%	4	232
State and local	47%	13	1,925

Source: [U.S. Bureau of Economic Analysis \(2022\)](#)

Unanswered questions

Would New Mexico have a textbook GRT? Or would you replace your sales tax with a GRT with lots of exemptions?

How do oil and the national labs change things?

New Mexico's nominal GRT is very different from my sales tax. New Mexico's taxes services but exempts food. Is a sales tax like New Mexico's more or less efficient than a textbook GRT?

Summary

A textbook sales tax is more efficient than a textbook gross receipts tax

In reality, neither tax is like the textbook

If you narrow the tax base, you have to increase the tax rate

I find that a sales tax that exempts services is less efficient than a textbook gross receipts tax

The services-exempting sales tax:

- has a 6.8 percentage point higher excess burden
- gets 6.3 percentage points more of its revenue from business purchases

Contact Information

Andre Barbe

andre.j.barbe@gmail.com

Acknowledgements:

Clinton Turner and Pam Stokes provided invaluable feedback and context.

All errors are my own.

Appendix

Sales Tax Exemptions in my Model

NAICS Code	Output Exempt?	Industry
72	No	Accommodation and Food Services
11	No	Agriculture
71	No	Arts, Entertainment, and Recreation
23	No	Construction
61	Yes	Educational Services
52	Yes	Finance and Insurance
62	Yes	Health Care and Social Assistance
51	Yes	Information
55	Yes	Management
31	No	Manufacturing
212	No	Mining - Except Oil and Gas
211	No	Mining - Oil and Gas
213	No	Mining Support Activities
81	Yes	Other Services
53	Yes	Real Estate
44	No	Retail Trade
54	Yes	Technical Services
48	No	Transportation
22	No	Utilities
56	No	Waste Disposal
42	No	Wholesale Trade