2020 Nebraska Tax Burden Study

November 1, 2023

Executive Summary

The Nebraska Department of Revenue (DOR) has completed the 2020 Nebraska Tax Burden Study (The study). While the study was finalized in 2023, it utilizes economic data from 2019 rather than economic data from 2020. Due to the impact of the COVID-19 pandemic, the decision was made to use data from 2019 for the baseline model due to the impact of the COVID-19 pandemic on economic sectors and data for 2020. In early 2020, the Coronavirus pandemic had spread around the world and impacted every sector of local, state, national and world economies. This economic shock has resulted in unstable and unbalanced economies as governments and markets readjust in response to the pandemic. Since the study examines the general implications of tax changes based on stable economic conditions, the study requires stable economic data for constructing the baseline model. Consequently, data from 2019, the most recent pre-pandemic year, provides more stable estimates and is used to define the year for the study.

The study is composed of three parts. The first examines a $100 million sales and use tax reduction, the second examines a $100 million individual income tax reduction, and the third section presents a historical analysis of income share, effective tax rate, and income tax burden paid by income group deciles from 2000 through 2020. In the first two sections, the study examines the economic impact of the sales and income tax changes, and the shift of "tax incidence" between income groups. Tax incidence is defined as which group of taxpayers ultimately bears the burden of, i.e., has to pay, the tax.

Sales and Use Tax Reduction. The study estimates that a hypothetical $100 million reduction in sales and use tax would result in an $84.45 million decline in state revenue, due to an expected increase in economic activity. The simulation also estimates that personal disposable income would increase $179.01 million, private investment would increase $107.19 million, and there would be 1,258 new jobs. Because most retail transactions are subject to sales tax, the retail industry would see most of the impact from the decrease in sales and use tax ($38.29 million in output). The burden index (the share of the tax reduction divided by the share of income) for sales and use tax is slightly regressive, meaning that it decreases as income increases.

Individual Income Tax Reduction. Similarly, the study estimates that a hypothetical $100 million reduction in individual income tax would result in a $93.72 million decline in state revenue, due to an expected increase in economic activity. The simulation also estimates that personal disposable income would increase $114.67 million, private investment would increase $24.34 million, and there would be 787 new jobs. In comparison to the sales and use tax decrease, which results in the retail industry absorbing much of the positive impact, the income tax reduction results in a more even distribution of the impact across all industries. The burden index for an individual income tax reduction is progressive in nature - the burden index values ranging from 0.15 for the lowest income group to 1.84 for the second highest income group.

I. Introduction

Pursuant to Neb. Rev. Stat. §§ 77-3,115 and 77-3,116, DOR has completed the *2020 Nebraska Tax Burden Study*. The Legislature directed DOR to gather, prepare, and study material that could be used as a basis for developing tax policy. The intentions of the Legislature are to study the impact of taxes on different economic sectors and to determine the impact of those sectors on the Nebraska economy.

This study provides an insight into the economic welfare effects of tax policies in Nebraska. Economic theory indicates that the impact of taxes on economic welfare often extends beyond the firms or individuals who are legally required to remit the tax. The tax burden may be shifted from businesses to households in the form of lower wages to workers or higher prices to consumers. Conversely, taxes on individuals may be shifted to businesses in the form of a reduced level of demand for goods and services and reduced profits. This study uses a computable general equilibrium (CGE) model to determine the true economic incidence of taxes in Nebraska. The model is referred to as the Tax and Revenue Analysis in Nebraska (TRAIN) model and is currently used by DOR Economists for the analysis in this study. The key determinants in assessing tax burden are the sensitivities of individuals and businesses to changes in prices, wages, and income (i.e., elasticity).

In a state-wide economy, there are many economic interactions between business sectors and individuals, which must be accounted for to determine where the tax burden falls. To deal with this complexity the TRAIN model uses state-wide data and economic theory to simultaneously simulate the effects of changes in tax policy. Thus, this study gives policy makers an understanding of how changes in tax policy affect the Nebraska economy so that they can accurately consider the economic consequences that tax policy changes will have on businesses and individuals.

This study is presented in three sections:

- Section I presents the economic concepts of tax incidence and general equilibrium analysis on which the TRAIN model is built, then discusses the model in more detail.
- Section II discusses the 2020 tax burden case studies and explores the changes in tax incidence from separate, hypothetical reductions in sales and use tax and individual income tax.
- Section III presents a historical analysis of income share, effective tax rate, and income tax burden paid by income group deciles from 2000 through 2020.

A. Tax Incidence and General Equilibrium Analysis

State statutes specify who must pay taxes, file tax returns, and remit payment to DOR. However, the individuals or businesses that bear the statutory incidence may not bear the whole tax burden. For example, when the government introduces a new tax that firms are required to remit, the firms may pass that tax along to their customers in the form of higher prices, to their employees in the form of lower wages or reduced hours, to their suppliers in the form of reduced purchases, and to their shareholders in the form of reduced dividends. This shift in the burden describes the economic incidence of a tax. Policy makers understand this, but tax laws, in some cases, specify who should pay the tax with an eye toward making the tax collection process less costly for government agencies. Who should pay is a determination of the statutory incidence of a tax law.[1]

Consequently, a distinction exists between statutory incidence and economic incidence of a tax. Since a true measure of tax incidence would determine who really bears the tax burden, this study is interested in the economic incidence of taxation. Economic incidence of tax is concerned with how the tax burden is distributed among economic sectors as determined by market forces, not by law. A true analysis of tax incidence must measure the final share of costs imposed on the economy beyond the legal liability.

Many tax incidence analyses examine comparative statics before and after a tax change is directly imposed on a single market.[2] However, this simple analysis, which is called a partial equilibrium analysis, may ignore the spillover effect in other markets. Consequently, partial equilibrium analyses often lead to an incomplete analysis of tax incidence and may not reveal all economic consequences.

For reviewing a current tax system and providing a guideline for better tax policy, measuring the true economic incidence is important. By simultaneously analyzing the interrelationships between various markets, general equilibrium theory seeks to measure true economic incidence.[3]

B. Computable General Equilibrium (CGE) Model

Computable General Equilibrium (CGE) model analysis, based on general equilibrium theory, seeks to comprehensively describe the economic interactions in and between different markets. Using actual economic data, CGE models estimate how an economy will react to an external shock, such as a change in the tax code. The advantage of CGE models is that, in principle, they can be applied to any combination of demand and supply-side shocks.[4] Therefore, CGE models are a standard tool of empirical analysis and are widely used to analyze the welfare and distributional impacts of policies, whose effects may be transferred through multiple markets or contain menus of different tax, subsidy, quota, or transfer instruments.[5]

A CGE model can account for structural changes in the economy because it is sensitive to a wide range and scale of policies and projects. Using a numerical solution algorithm, the CGE model solves

[1] Anderson, John E. 2011. Public Finance 2nd edition: Cengage Learning.
[2] Rosen, Harvey S. and Gayer, Ted. 2013. Public Finance 10th edition: Mcgraw-Hill..
[3] Rosen, Harvey S. and Gayer, Ted. 2013. Public Finance 10th edition: Mcgraw-Hill.
[4] McGregor, Peter G.,Mark D. Partridge, and Dan S. Rickman. 2010 Innovations in Regional Computable General Equilibrium (CGE) Modelling. *Regional Studies 44*: 1307-10.
[5] Wing, Ian Sue. 2004. Computable General Equilibrium Models and Their Use in Economy-Wide Policy Analysis. *MIT Joint Program on the Science and Policy of Global Change, Technical Note Number 6*.

for new levels of supply, demand, and price, which results in a new and unique equilibrium solution across all the economic sectors in the model. Equilibrium is an economic principle which states that, under certain conditions, market-clearing combinations of prices and quantities exist, which results in all available goods and services being sold. At these prices and quantities, individuals, and firms maximize their utility and profits, respectively.

A CGE model considers, implicitly or explicitly, all sectors of the economy simultaneously. From the initial equilibrium, the economy is "shocked" by external changes. The model then moves to a new equilibrium. The shock occurs outside the model and may be in the form of a new or reduced tax, a change in monetary policy, a change in technology, or an increase or decrease in quantities of some good due to outside influences such as a natural disaster. Measuring the changes in prices and quantities of goods and services between the initial equilibrium and the new equilibrium provides information on how the shock affected economic welfare in each sector of the economy.

Figure 1 illustrates a typical CGE model for economic impact analysis. It describes the flow of money and resources between the two major types of economic agents: firms and households. Firms are represented in the model as sectors, and each sector is treated as a representative firm. The model assumes perfect competition in the economy, that is, firms take the prices for its inputs and output as given. Also, the model assumes each firm chooses input and output levels that maximize profits. The firm's inputs are labor, capital, and intermediate goods. Similarly, the model assumes that the other economic agent, the household, will maximize its utility by deciding how many goods and services to buy and how much labor and capital services to provide to firms. Like firms, households face fixed prices and wages.

Figure 1: Circular Flow Diagram

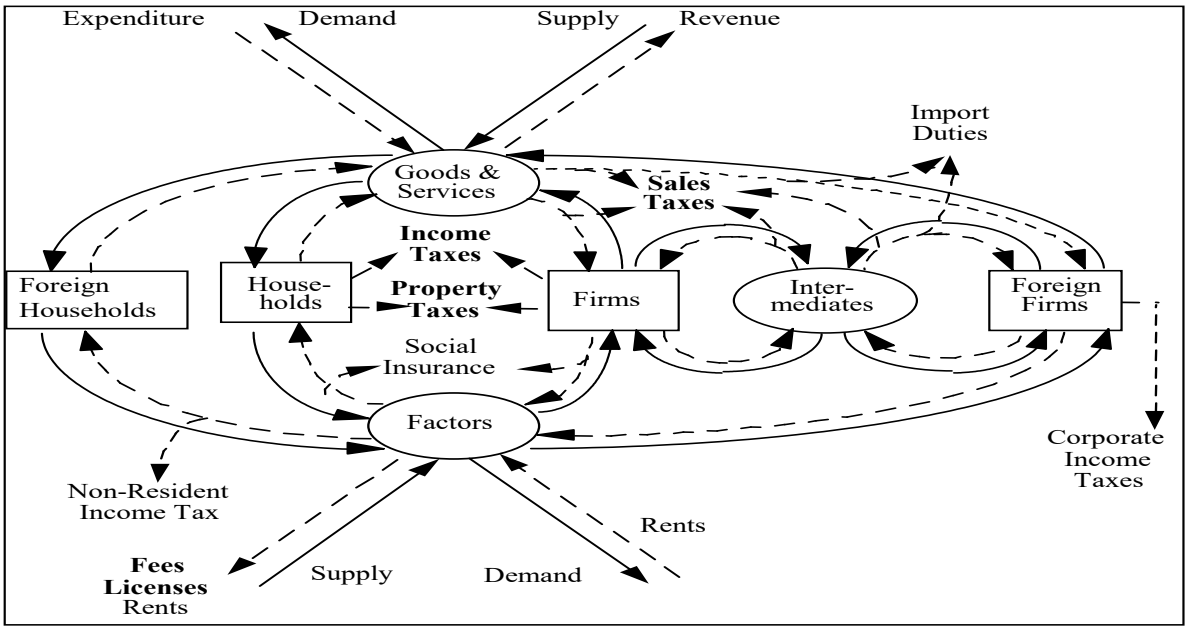


Figure 1 also depicts how households and firms interact through two types of markets: factor markets and goods-and-services markets. Firms sell goods and services to households in the goods-and-services markets, while households sell labor and capital services to firms in the factor markets. These markets—along with the intermediates market, which sell intermediate goods to other firms—

are depicted as ovals, while the rectangles identify the economic agents. The solid arrows depict the flows of goods and services and factors through the economy, while the dashed lines depict the flows of money through the economy. Equilibrium in the factor markets for labor and capital and equilibrium in the good-and-services markets for goods and services define a typical general equilibrium system.

The economy also interacts with two additional types of agents: foreign households and foreign firms. In today's world, most economies are open, meaning that economic agents within an economy trade goods, services, labor, and capital readily with agents in neighboring states and countries. Figure 1 demonstrates that foreign firms sell goods to both domestic households and firms and foreign households buy domestic goods and services in the goods-and-services markets. Furthermore, both foreign households and foreign firms can supply capital and labor to the domestic economy.

Finally, the government sector is considered. Combining the taxing and spending effects of the three levels of government (federal, state, and local) completes the circular-flow diagram in Figure 1. Beginning at the top, the figure demonstrates how the government buys goods and services with expenditure payments. The government then supplies goods and services to the economy, although it may or may not receive revenue. Additionally, the government supplies factors of production, such as roads and education, while not necessarily receiving revenues. The government also makes monetary transfers to households; however, the diagram does not show these transactions because consumers, who receive income transfers from the government, use the funds to purchase final goods and services as household consumption, and these purchases are distinct from government consumption of goods and services. The middle section of the diagram demonstrates the myriad of ways in which the government raises revenue through taxation.

C. TRAIN Model

The TRAIN model, a CGE model for the Nebraska economy, can be used to estimate the economic impact of changes in tax policies in Nebraska.[6] The TRAIN model is comprehensive because it describes all major economic activities performed by consumers, firms, governments, and trades occurring in Nebraska.

The TRAIN model, like all economic models, relies on assumptions about the economy. While the assumptions about functional forms and equations are described below, the most important assumption of the TRAIN model, and all CGE models, is that the economy is in equilibrium. For the assumption of equilibrium to hold, all markets in the economy must clear (i.e., supply equals demand) and this must occur while consumers and firms maximize utility and profits, respectively. This assumption may not hold in real economic markets, where excess supply and excess demand both occur. However, if excess supply in inventory occurs regularly, one would expect firms to eventually close due to poor management. On the other hand, if excess demand occurs regularly, one expects firms to enter the market to alleviate shortages. Consequently, it does not seem unreasonable to impose this assumption on an economy in the long-run.

[6] A full detailed description of the TRAIN model is available here.

With the TRAIN model starting at a point of economic equilibrium, the economy is then "shocked" with a change in policy, technology, or quantity of goods due to an exogenous source. The TRAIN model then finds a new equilibrium. While the TRAIN model measures the true economic incidence for all sectors over time, it solves for these equations simultaneously. Constructed with over 1,300 mathematical equations and identities, the TRAIN model is implemented using the General Algebraic Modeling System (GAMS) programming language.

As mentioned, the TRAIN model uses mathematical equations for specifying the economic behavior of agents. Consumers maximize utility subject to a budget constraint. The model is nonlinear and uses Cobb-Douglas technology to describe consumer behavior. Household savings are treated as residuals of after-tax income less consumption. Consequently, investment in the TRAIN model, unlike a national model,[7] is independent from savings formation. Moreover, investment is determined by the differences between rates of return in Nebraska and the rest of the world.

Similar to the economic behavior of consumers, the TRAIN model assumes that firms maximize profits by producing outputs from cost minimizing combination of labor and capital inputs. The functional form adopted by the TRAIN model for production is constant elasticity of substitution (CES) for primary factors of production and fixed-shares for intermediate inputs. Foreign trade is modeled using Armington's CES formulation. Implicit in this assumption is the notion that products from different geographic locations that compete in the same market are imperfect substitutes.

Finally, the population of each household group is a function of existing population in Nebraska. Therefore, changes in population are limited to the natural rate of population growth and net migration. The working population in the TRAIN model is a function of after-tax returns to labor — the higher the after-tax income, the greater the workforce.

Like all other simulation models, the TRAIN model uses aggregates rather than individual agents. A correct aggregation or sectoring is a critical element in the development of any CGE model because the aggregation determines the flows that the model will be able to trace explicitly. In the TRAIN model, the Nebraska economy has been divided into 74 distinct sectors: 28 industrial sectors; two factor sectors (labor and capital); nine household sectors; one investment sector; 33 government sectors; and one sector that represents the rest of the world. Table 1 briefly describes each sector.

[7] In many national-level CGE models, the volume of total savings in the national economy determines total investment. Investment in these models is said to be "savings-driven."

Table 1: Economic Sectors in TRAIN

SECTOR	DESCRIPTION
Industrial	
AGCRO	Crops
AGLIV	Livestock
OTHPR	Primary Resources
UTILI	Utility
CONST	Construction
FOODS	Food Manufacturing
MEATS	Meat processing
MFRCO	Construction-Oriented Manufacturing
CHEMS	Chemicals and Related
METAL	Metals and Machinery
FARMM	Farm Machinery
ELECT	Electronic Technology
TRANM	Transportation equipment
OTHMA	Other Manufacturing
WHOLE	Wholesale Trade
RETAI	Retail Trade
TRAST	Transportation
INFOR	Information
BANKS	Banking
INSUR	Insurance Carriers
REALE	Real Estate
PSERV	Professional Services
BSERV	Business Services
ESERV	Educational Services
OSERV	Other Services
HEALT	Health Services
ENTER	Entertainment
AFSER	Accommodation

SECTOR	DESCRIPTION
Federal Government	
FTSOC	Social-Security Tax
FTPIT	Personal Income Tax
FTPRO	Corporate Income Tax
FTDUT	Import Duty Tax
FTMSC	Miscellaneous Taxes
FSDNO	Federal Non-Defense Spending
FSDDE	Federal Defense Spending
State Government	
NTINS	Insurance Tax
NTMVS	Motor Vehicle Taxes
NTGAS	Gasoline Taxes
NTSAU	Sales and Use Tax
NTPRO	Corporation Tax
NTLAB	Unemployment Insurance Tax
NTPIT	Personal Income Tax
NTUNI	University Fees
NTINH	Inheritance Tax
NTSIN	Alcohol, Tobacco, and Horse Racing Tax
NTMSC	Miscellaneous Taxes
NGENF	General Revenue Fund
NSTRA	Transportation Expenditures
NSCOR	Correction Expenditure
NSK12	Educational Expenditure
NSUNI	Higher Educational Expenditure
NSHAW	Health and Welfare Expenditure
NSOTH	Other Expenditures

SECTOR	DESCRIPTION
Local Government	
LTPRP	Property Tax
LTSAU	Local Sales and Use Tax
LTMSC	Miscellaneous Taxes
LSTRA	Local Transportation Expenditure
LSCOR	Local Corrections Expenditure
LSK12	K-12 Education Expenditure
LSHAW	Local Health and Welfare Expenditure
LSOTH	Other Expenditure
Household	
1	$0–$15,000
2	$15,000–$30,000
3	$30,000–$40,000
4	$40,000–$50,000
5	$50,000–$70,000
6	$70,000–$100,000
7	$100,000–$150,000
8	$150,000–$200,000
9	Above $200,000
Factor	
LABOR	Labor
CAPIT	Capital
Other Sectors	
ROW	Other States and Foreign Countries

Another crucial element for modeling is the construction and collection of the data because the data provides the TRAIN model with the initial equilibrium conditions of the economy. The data sets for this study consist of a social accounting matrix (SAM), a capital coefficient matrix (CCM), and a miscellaneous data set. As the primary data set, the SAM is constructed to satisfy the general equilibrium of the model in the base year. The CCM and other miscellaneous data provide important parameters to solve the model.

Constructing a SAM for Nebraska requires data from various sources. The data for the industrial and household sectors are from IMPLAN,[8] which is a commercial economic impact model and database program. IMPLAN provides the transaction matrix of goods and services among industries, gross output, and final demand. IMPLAN also provides the transaction matrix for final payments by sectors, imports, and factor incomes. These transaction matrices are required for constructing the SAM. Factor incomes are updated by data obtained from the Bureau of Economic Analysis (BEA). The Internal Revenue Service provided federal government revenue data, and federal government expenditure data was obtained from the BEA. Finally, DOR internal data and analysis generated tax revenues and expenditure data for state and local governments. These data sources are combined in the construction of a SAM for Nebraska.

A CCM for Nebraska is aggregated and updated from a national CCM provided by the BEA. Furthermore, capital stocks and depreciation rates for Nebraska are estimated from data on fixed reproducible tangible wealth of the U.S. also provided by the BEA.

Table 2 below presents the snapshot of the 2019 Nebraska economy. The estimated 2019 total population in Nebraska was 1,934,408 with 1,328,812 employed and an unemployment rate of 3.1%. The GDP for Nebraska in 2019 was $131.867 billion with a per capita personal income of $54,182.

Table 2: 2019 Nebraska Economy

Population	1,934,408	Pers
Households Unites	787,897	HH
Total Employment	1,328,812	Pers
Unemployment Rate	3.10	%
GDP	$ 131.867	Bn
Personal Income	$ 105.922	Bn
Personal Tax	$ 10.547	Bn
Per Capital Personal Income	$ 54,182	
Net State Tax Revenue	$ 5.152	Bn
Income Tax	$ 2.635	Bn
Sales and Use Tax	$ 1.757	Bn
Corporation Income Tax	$ 497.910	MM

[8] https://www.implan.com/platform/.

Table 3 below presents the number of households and total household income for each income group. The following table presents the nine income groups and the estimated number of households in each group. The lowest income group is households with an income less than $15,000 and the highest income group is households with an income more than $200,000. Table 4 below presents industrial output, employment in 2019, NAICS (North American Industrial Classification System) codes, and a full description for each sector in the model.

Table 3: Characteristics of Households in TRAIN

Household Sector	Income Group	Number of Households (Pers)	Share of Households (%)	Household Income ($ MM)	Share of Income (%)
1	$0–$15,000	75,243	9.55	3,264.56	2.89
2	$15,000–$30,000	110,081	13.97	6,577.84	5.82
3	$30,000–$40,000	77,429	9.83	6,080.97	5.38
4	$40,000–$50,000	70,331	8.93	6,314.55	5.58
5	$50,000–$70,000	125,955	15.99	12,978.50	11.48
6	$70,000–$100,000	134,474	17.07	19,020.85	16.82
7	$100,000–$150,000	118,732	15.07	24,113.73	21.32
8	$150,000–$200,000	40,405	5.13	12,152.56	10.75
9	Above $200,000	35,246	4.47	22,576.65	19.97
Source: IMPLAN 2019 Database.					

Table 4: Industrial Sectors and Base Industrial Output and Employment

TRAIN Sector	Description	NAICS	Industrial Output* ($ MM)	Employment (Pers)
AGCRO	Crop Production	111	9,869.92	21,187
AGLIV	Animal Production	112	11,985.63	34,979
OTHPR	Forestry and Logging; Fishing, Hunting, and Trapping; Supporting Activities for Agriculture and Forestry; Mining	113, 114, 115, 21	1,359.50	14,366
UTILI	Utility	22	3,681.00	1,257
CONST	Construction	23	9,591.94	82,029
FOODS	Food Manufacturing	3111-3115, 3117-3121	8,982.95	11,844
MEATS	Meat Processing	3116	16,719.69	29,050
MFRCO	Wood and Paper Manufacturing; Nonmetallic Mineral Production; Furniture and Related Production	321-322, 327, 337	2,565.16	8,509
CHEMS	Petroleum and Coal Production; Chemical Manufacturing; Plastics and Rubber Production	324, 325, 326	8,374.83	10,715
METAL	Primary Metal Manufacturing; Fabricated Metal Production; Machinery Manufacturing	331, 332, 33312-33399	4,582.32	13,774
FARMM	Agriculture Implement Manufacturing	333111	2,912.94	5,430
ELECT	Computer and Electronic Production; Electrical Equipment, Appliance and Component Manufacturing	334,335	2,050.49	5,279
TRANM	Transportation Equipment Manufacturing	336	4,030.19	8,476
OTHMA	Tobacco, Textile Mills and Production; Apparel, Leather, and Allied Production; Printing and Related Support Activities; Miscellaneous Manufacturing	3122-3169, 323,339	3,347.86	11,340
WHOLE	Wholesale Trade	42	13,608.65	41,626
RETAI	Retail Trade	44-45	10,235.04	117,907
TRAST	Transportation and Warehousing Except Postal Services	48-49	16,630.44	70,856
INFOR	Information	51	8,362.24	19,432
BANKS	Finance and Related Activities	521, 522, 523, 525	10,606.41	50,917
INSUR	Insurance Carriers and Related Activities	524	17,801.52	32,971
REALE	Real Estate	531	18,275.63	47,336
PSERV	Professional, Scientific, and Technical Services	54	12,178.24	78,238
BSERV	Management of Companies and Enterprises; Administrative and Support; Waste Management and Remediation Services	55	11,023.14	89,380
ESERV	Educational Services	61	1,116.68	16,337
OSERV	Other Services	532, 533, 81	8,448.44	87,078
HEALT	Health Care and Social Assistance	62	16,571.96	145,850
ENTER	Arts, Entertainment, and Recreation	71	1,589.84	24,540
ACCOM	Accommodation and Food Services	72	6,695.77	97,863

*Source: IMPLAN 2019 database

II. Burden Impact Analysis of a Tax Reduction

This section analyzes the impact of a hypothetical reduction in the sales and use tax and the individual income tax. These taxes represent the major sources of state revenue in Nebraska. The case studies simulate a revenue reduction of $100 million in sales and use tax and individual income taxes, independently of the other. Net sales and use tax receipts in calendar year 2019 totaled $1.76 billion, and net individual income tax paid by Nebraskan resident taxpayers totaled $2.63 billion. Therefore, the hypothetical reduction is approximately 3.80% of net individual income tax receipts and 5.69% of net sales and use tax receipts.

It is assumed that the hypothetical tax reduction was achieved by means of across-the-board reductions in tax rates. This assumption does not allow the policy change to directly affect the relationships between taxed goods in the case of the sales tax, or between households in the case of the income tax. However, the simulation results demonstrate that an interaction exists between sectors by indirect and induced effects. It is also assumed that state government keeps a balanced budget, which means that the state reduces $100 million in its spending to offset the tax cut. Again, the TRAIN model is run separately for each case study.

A change in a tax rate alters the prices and relationships among goods and services throughout the economy. A tax reduction provides consumers and businesses with more disposable income, resulting in increased economic activity. An increase in economic activity partially offsets the tax reduction by creating additional income and taxable sales. In the case of a reduction in the sales and use tax rate, there are two economic effects: income and substitution effects. The substitution effect is the result of a tax cut reducing the price of taxable goods and services relative to non-taxable goods and services. Consequently, taxable goods became cheaper and non-taxable goods remained unchanged. This effect will result in a change in the bundle of goods a consumer buys, that is, consumers substitute away from the relatively more expensive goods. The income effect is the change seen in real income from the reduction in sales and use tax, allowing households and businesses to purchase more goods and services. Furthermore, additional purchases of taxable goods and services result in additional tax collections. While consumers only realize the savings from a sales and use tax reduction if they are consuming taxable goods, in the case of the individual income tax, a tax cut allows individuals to buy more goods, or to save. The ability to save increases investment from businesses. Then businesses may boost economic activities, which results in additional tax collections. Those additional tax collections reduce an initial budget gap resulting from the tax cut.

A. The Analysis of a $100 Million Sales and Use Tax Reduction

A change in the sales and use tax rate immediately impacts the relative prices of all goods and services in the economy. This impact affects consumers' purchasing patterns, which in turn affects the entire economy.

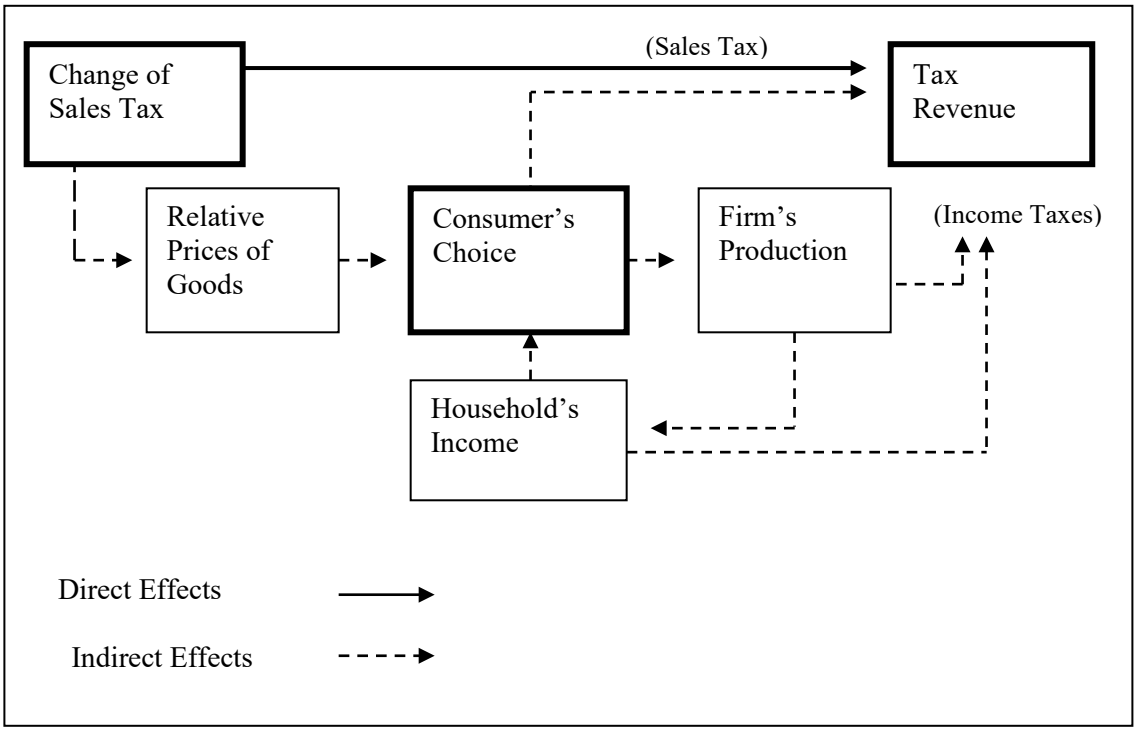
When a tax rate is reduced on a specified set of goods and services, the prices of the untaxed goods rise relative to the prices of taxed goods and services. For example, a sales tax rate decrease may induce consumers to purchase more taxed manufactured goods and less untaxed services. In other words, the demand for untaxed services decreases and demand for taxed manufactured goods increases, which leads to a decrease in the production of services and an increase in the production of manufactured goods. As the production of manufactured goods rises, a portion of the capital

and labor formerly employed in the services industry are forced to find employment in the manufacturing sector. For the manufacturing industry to be willing to absorb the newly unemployed capital and labor from services production the relative prices of capital and labor must change, assuming that capital-labor ratios differ between the two sectors. Further assuming that the manufacturing sector is the capital-intensive sector, relatively larger amounts of capital must be absorbed in the manufacturing production sector. The only way for the capital to move into the manufacturing sector, and for the markets to reach a new equilibrium, is for the relative price of capital to increase. At the new equilibrium position, all capital is relatively better off, not just capital in the manufacturing sector.

Generally, a tax cut on the output of a particular sector results in an increase in the relative price of the inputs used intensively in that sector. A tax cut on manufactured goods tends to benefit households who receive a proportionately larger share of their income from capital. In addition, households that consume a proportionately larger amount of manufactured goods tend to bear a relatively smaller share of the tax burden. The total incidence of the tax on manufactured goods depends on the characteristics of both the household and the firm sides of Figure 1. For example, a household that supplies capital and consumes a relatively large amount of manufactured goods is better off due to both its household preferences and the relative price increase of capital. Following the same rationale, a household supplying labor to firms and consuming relatively smaller amounts of manufactured goods is worse off.

Figure 2 depicts the economic consequences of a sales and use tax rate reduction. The solid line at the top represents the tax reduction. The change in the sales tax rate results in a change in the relative price of taxed and untaxed goods and services. This change in the relative prices affects consumers' choices. The tax rate cut has two effects on consumers. First, taxed goods become relatively less expensive. Second, consumers have more disposable income because the tax is reduced. Furthermore, consumers' purchasing decisions affect the production decisions of firms. Changes in firms' production decisions affect both household income and the income taxes paid by firms. Due to the changes in production decisions, household income decisions then change, resulting in more income tax collected from households. Additionally, increased household income affects consumers' choices, which, in this case, results in higher changes in relative price and increased disposable income. These effects lead to tax revenue increases in future years, which further impact firms' production decisions.

Figure 2: Economic Consequences of a Sales and Use Tax Rate Reduction



Tables 5 through 8 present the simulation results of a hypothetical $100 million reduction in sales and use tax. Table 5 presents the revenue impact and economic consequences of the $100 million tax cut in sales and use tax. With a hypothetical tax cut of $100 million, the simulation estimates in an $84.45 million decline in state revenues. As mentioned above, this hypothetical tax cut generates increased economic activity, which offsets $15.55 million of the tax cut. Additionally, the simulation estimates that personal disposable income, private investment, and the number of new jobs would increase by $179.01 million, $107.19 million, and 1,258 respectively.

Table 5: The Impact of a $100 Million in Sales and Use Tax Reduction

Economic Impact		
	Personal Income	$179.01 MM
	Investment	$107.19 MM
	Persons Employed	1,258 Pers
State Revenue Impact		
	Initial Reduction	-$100.00 MM
	Revenue Offset by Economic Impact	$15.55 MM
	Net Revenue Impact	-$84.45 MM

Table 6: Effect of a Sales and Use Tax Reduction by Household Group

	Household Characteristics		Economic Impact		Tax Reduction and Burden		
Household Sector	Income Level	Percentage of Income Share (%)	Real Income Change (MM)	Nominal Income Change (MM)	Sales and Use Tax Reduction (MM)	Share of Reduction (%)	Burden Index
1	$0–$15,000	2.89	1.13	-0.13	-4.36	4.18	1.45
2	$15,000–$30,000	5.82	5.43	0.07	-8.50	8.15	1.40
3	$30,000–$40,000	5.38	7.05	1.52	-7.54	7.23	1.35
4	$40,000–$50,000	5.58	8.73	2.34	-7.50	7.19	1.29
5	$50,000–$70,000	11.48	22.26	7.16	-15.16	14.54	1.27
6	$70,000–$100,000	16.82	31.04	8.94	-19.23	18.44	1.10
7	$100,000–$150,000	21.32	40.78	10.94	-21.73	20.84	0.98
8	$150,000–$200,000	10.75	22.37	7.54	-8.97	8.60	0.80
9	Above $200,000	19.97	40.23	13.47	-11.30	10.83	0.54

Table 6 presents the impact of the hypothetical tax reduction on each household sector. The third column in Table 6, "Percentage of Income Share," is a duplication of the last column of Table 3, the share of total income earned by each income group. The sixth column presents the sales and use tax reduction that accrues to each sector. The seventh column, "Share of Reduction," presents the share of the total sales and use tax reduction to households received by each sector. Finally, the last column of Table 6, "Burden Index," is the share of the sales and use tax reduction for each income group divided by the percentage of total household income for the same group.

The average value of the burden index for low- and middle-income groups, groups with income less than or equal to $100,000, is 1.31. Meanwhile, the average value of the burden index for high income groups, groups with income more than $100,000, is 0.77. Therefore, the burden index for sales and use tax is slightly regressive. Since consumption represents a larger portion of spending for low- and middle-income groups, these groups receive greater benefits from a reduction in the sales and use tax than higher income groups. This result may imply that a reduction in the sales and use tax in Nebraska benefits low- and middle-income groups more than high income groups.

In the sixth column, the total reduction in sales and use taxes paid by households is $104.29 million. Note that the final revenue impact to the state in Table 5 is only $84.45 million. Table 5 presents the final amount of reduction in state revenue after all the economic impacts of the sales and use tax reduction have been included in the model. This implies that the ultimate tax savings by households is more than the amount of revenue foregone by the state. This difference is the result of the extra economic activities generated by the tax reduction.

The fourth column in Table 6, "Real Income Change," presents the real economic benefits for each income group by tax reduction; and the fifth column, "Nominal Income Change," demonstrates the amount of cash each income group would receive from a tax reduction. Note that the first income groups experience a decline in cash income even though their real economic benefits are positive. While the first income groups would receive a reduced cash transfer from the government that spends less money with keeping a balanced budget, they would receive more economic benefits from

the reduced price of taxed commodities.

Table 7 presents the share of a $100 million sales and use tax reduction by industrial sector, and Table 8 presents the economic consequences of a sales and use tax reduction. Because most retail transactions are subject to tax, it is not surprising that the major portion (36.57%) of the impact of a sales and use tax reduction affects the retail sector. Note that the total employment in Table 8 differs from “Persons Employed” in Table 5 because the figure in Table 8 only presents changes in private sectors while “Persons Employed” in Table 5 presents changes in total employment including new employment in the government sectors.

Table 7: Sales and Use Tax Reduction by Industrial Sector

Sector	Description	Sales Tax ($ MM)	Share (%)
AGCRO	Crop Production	-0.35	0.33
AGLIV	Animal Production	-0.03	0.02
OTHPR	Forestry and Logging; Fishing, Hunting, and Trapping; Supporting Activities for Agriculture and Forestry; Mining	-0.01	0.01
UTILI	Utility	-4.15	3.96
CONST	Construction	0.00	0.00
FOODS	Food Manufacturing	-1.43	1.36
MEATS	Meat Processing	-1.75	1.67
MFRCO	Wood and Paper Manufacturing; Nonmetallic Mineral Production; Furniture and Related Production	-0.67	0.64
CHEMS	Petroleum and Coal Production; Chemical Manufacturing; Plastics and Rubber Production	-3.15	3.01
METAL	Primary Metal Manufacturing; Fabricated Metal Production; Machinery Manufacturing	-0.18	0.17
FARMM	Agriculture Implement Manufacturing	-0.03	0.03
ELECT	Computer and Electronic Production; Electrical Equipment, Appliance and Component Manufacturing	-0.66	0.63
TRANM	Transportation Equipment Manufacturing	-1.18	1.12
OTHMA	Tobacco, Textile Mills and Production; Apparel, Leather, and Allied Production; Printing and Related Support Activities; Miscellaneous Manufacturing	-2.04	1.95
WHOLE	Wholesale Trade	-5.21	4.98
RETAI	Retail Trade	-38.29	36.57
TRAST	Transportation and Warehousing Except Postal Services	-1.72	1.64
INFOR	Information	-4.44	4.24
BANKS	Finance and Related Activities	-2.50	2.38
INSUR	Insurance Carriers and Related Activities	-2.67	2.55
REALE	Real Estate	-5.90	5.63
PSERV	Professional, Scientific, and Technical Services	-0.66	0.63
BSERV	Management of Companies and Enterprises; Administrative and Support; Waste Management and Remediation Services	-0.39	0.37
ESERV	Educational Services	-0.56	0.53
OSERV	Other Services	-5.23	4.99
HEALT	Health Care and Social Assistance	-8.02	7.66
ENTER	Arts, Entertainment, and Recreation	-1.57	1.49
ACCOM	Accommodation and Food Services	-11.95	11.42
Total		-104.70	100.00

Table 8: Economic Effect of a $100 Million in Sales and Use Tax Reduction by Industrial Sector

Sector	Description	Output ($ MM)	Employment (Pers)
AGCRO	Crop Production	0.03	0
AGLIV	Animal Production	-0.29	0
OTHPR	Forestry and Logging; Fishing, Hunting, and Trapping; Supporting Activities for Agriculture and Forestry; Mining	0.06	0
UTILI	Utility	3.58	1
CONST	Construction	3.41	21
FOODS	Food Manufacturing	-0.20	0
MEATS	Meat Processing	0.36	1
MFRCO	Wood and Paper Manufacturing; Nonmetallic Mineral Production; Furniture and Related Production	0.56	2
CHEMS	Petroleum and Coal Production; Chemical Manufacturing; Plastics and Rubber Production	-0.22	0
METAL	Primary Metal Manufacturing; Fabricated Metal Production; Machinery Manufacturing	-0.38	-1
FARMM	Agriculture Implement Manufacturing	-0.18	0
ELECT	Computer and Electronic Production; Electrical Equipment, Appliance and Component Manufacturing	-0.20	-1
TRANM	Transportation Equipment Manufacturing	-0.20	0
OTHMA	Tobacco, Textile Mills and Production; Apparel, Leather, and Allied Production; Printing and Related Support Activities; Miscellaneous Manufacturing	-0.06	0
WHOLE	Wholesale Trade	9.67	31
RETAI	Retail Trade	39.61	410
TRAST	Transportation and Warehousing Except Postal Services	6.82	23
INFOR	Information	12.47	26
BANKS	Finance and Related Activities	12.09	40
INSUR	Insurance Carriers and Related Activities	10.96	17
REALE	Real Estate	26.96	14
PSERV	Professional, Scientific, and Technical Services	9.92	49
BSERV	Management of Companies and Enterprises; Administrative and Support; Waste Management and Remediation Services	6.69	47
ESERV	Educational Services	1.16	14
OSERV	Other Services	11.23	85
HEALT	Health Care and Social Assistance	27.64	220
ENTER	Arts, Entertainment, and Recreation	1.40	14
ACCOM	Accommodation and Food Services	13.88	206
Total		196.76	1,216

B. The Analysis of a $100 Million Individual Income Tax Reduction

The analysis of an individual income tax reduction is more straightforward than that of a sales and use tax reduction. In the simulation, an income tax is a tax on labor and capital in all sectors. As a result, an income tax reduction creates no incentive to change labor or capital usage between industrial sectors. Reducing income tax increases disposable income, hence individuals spend their additional income on activities that stimulate Nebraska's economy.

Nevertheless, an extra portion of savings may not directly relate to investment in Nebraska since individuals seek investment opportunities not only within the state, but also in other states and other countries. Since the TRAIN model assumes perfect mobility of capital, the rate of return is the only factor influencing investment.

Table 9 presents the revenue impact and economic consequences of a $100 million reduction in individual income tax. The simulation results in a $93.72 million decline in the state revenue balance. Once again, a hypothetical tax cut would stimulate economic activity and result in the state collecting $6.28 million in additional taxes. The simulation also estimates that personal disposable income, private investment, and the number of new jobs would increase by $114.67 million, $24.34 million, and 787 respectively.

Table 10 demonstrates the impact of an income tax reduction on each household group. The third column in Table 10, "Percentage of Income Share," is a duplication of the last column of Table 3, the share of total income earned by each income group. The sixth column presents an income tax reduction that accrues to each income group. The seventh column, "Share of Reduction," presents the share of the total income tax reduction to households received by each income group. Finally, the last column of Table 10, "Burden Index," is the share of the income tax reduction for each group divided by the percentage of total household income for the same group.

Table 9. Impact of a $100 Million in Individual Income Tax Reduction

Economic Impact		
Personal Income	$114.67	MM
Investment	$24.34	MM
Persons Employed	787	Pers
State Revenue Impact		
Initial Reduction	-$100.00	MM
Revenue Offset by Economic Impact	$6.28	MM
Net Revenue Impact	-$93.72	MM

Table 10: Effect of an Individual Income Tax Reduction by Household Group

	Household Characteristics		Economic Impact		Tax Reduction and Burden		
Household Sector	Income Level	Percentage of Income Share (%)	Real Income Change (MM)	Nominal Income Change (MM)	Income Tax Reduction (MM)	Share of Reduction (%)	Burden Index
1	$0–$15,000	2.89	0.24	0.16	-0.44	0.45	0.15
2	$15,000–$30,000	5.82	0.88	0.51	-2.41	2.45	0.42
3	$30,000–$40,000	5.38	2.61	2.20	-3.20	3.26	0.61
4	$40,000–$50,000	5.58	2.57	2.08	-4.02	4.10	0.73
5	$50,000–$70,000	11.48	8.93	7.84	-8.71	8.86	0.77
6	$70,000–$100,000	16.82	13.13	11.39	-13.29	13.52	0.80
7	$100,000–$150,000	21.32	25.47	23.18	-18.03	18.35	0.86
8	$150,000–$200,000	10.75	14.28	13.20	-12.14	12.35	1.15
9	Above $200,000	19.97	46.56	44.10	-36.02	36.66	1.84

Note that the burden index, the share of income tax reduction divided by percentage of income share for each income group, gradually increases from 0.15 for the lowest income group, to 1.84 for the highest income group. It exhibits the progressive nature of income tax, and implies that a tax policy, which reduces the income tax rate, would have more economic benefit for higher income groups. When considering the progressive nature of the Nebraska income tax system, this finding seems to align with the anticipated results of the simulation. In the sixth column of Table 10, the total reduction in income tax paid by households is $98.25 million. Note that the final revenue impact as shown in Table 9 is $93.72 million because Table 9 presents the net reduction in state revenue after all the economic impacts of an individual income tax reduction have been accounted for by the model. Additionally, the result indicates that the ultimate tax savings by households is more than the amount of revenue foregone by the state. This difference is the result of the extra economic activity generated by the income tax reduction.

The fourth column in Table 10, "Real Income Change," presents the real economic benefits for each income group, and the fifth column, "Nominal Income Change," demonstrates the amount of cash each income group would receive.

Table 11 presents the economic consequences of an income tax reduction. The economic impact of an income tax reduction is smaller than the impact of a sales tax reduction; however, total economic benefits are spread more evenly among all industries under the income tax reduction simulation. Note that the total employment in Table 11 differs from "Persons Employed" in Table 9 because the figure in Table 11 only presents changes in private sectors while "Persons Employed" in Table 9 presents changes in total employment including new employment in government sectors.

Table 11: The Effect of a $100 Million in Individual Income Tax Reduction

Sector	Description	Output ($ MM)	Employment (Pers)
AGCRO	Crop Production	2.41	6
AGLIV	Animal Production	2.91	3
OTHPR	Forestry and Logging; Fishing, Hunting, and Trapping; Supporting Activities for Agriculture and Forestry; Mining	0.65	4
UTILI	Utility	0.97	1
CONST	Construction	3.81	27
FOODS	Food Manufacturing	3.39	7
MEATS	Meat Processing	4.28	10
MFRCO	Wood and Paper Manufacturing; Nonmetallic Mineral Production; Furniture and Related Production	1.84	7
CHEMS	Petroleum and Coal Production; Chemical Manufacturing; Plastics and Rubber Production	3.23	7
METAL	Primary Metal Manufacturing; Fabricated Metal Production; Machinery Manufacturing	3.01	11
FARMM	Agriculture Implement Manufacturing	0.98	3
ELECT	Computer and Electronic Production; Electrical Equipment, Appliance and Component Manufacturing	1.41	5
TRANM	Transportation Equipment Manufacturing	2.35	5
OTHMA	Tobacco, Textile Mills and Production; Apparel, Leather, and Allied Production; Printing and Related Support Activities; Miscellaneous Manufacturing	2.00	8
WHOLE	Wholesale Trade	5.69	25
RETAI	Retail Trade	7.39	85
TRAST	Transportation and Warehousing Except Postal Services	4.52	25
INFOR	Information	5.19	14
BANKS	Finance and Related Activities	8.81	32
INSUR	Insurance Carriers and Related Activities	6.54	17
REALE	Real Estate	12.28	9
PSERV	Professional, Scientific, and Technical Services	8.73	49
BSERV	Management of Companies and Enterprises; Administrative and Support; Waste Management and Remediation Services	8.36	63
ESERV	Educational Services	0.89	12
OSERV	Other Services	6.12	54
HEALT	Health Care and Social Assistance	15.12	128
ENTER	Arts, Entertainment, and Recreation	0.80	10
ACCOM	Accommodation and Food Services	4.22	71
Total		127.89	697

III. Historical Analysis of Nebraska Income Tax by Decile, 2002-2020

Table 12, "Analysis by Deciles of Nebraska Income Tax Burden Ranked by Federal AGI, (Resident Returns Only)," presents Nebraska income tax records by decile from 2002 through 2020. This table was created by sorting all Nebraska Individual Income Tax Returns (Form 1040N), by federal adjusted gross income (AGI), dividing the sorted returns into ten groups, and summing each group. For convenience, the first seven deciles, or 70% of the returns, are treated as a single group.

Table 12 includes the number of resident returns by tax year and presents the total amounts of Federal AGI and Nebraska individual income tax liability in four blocks. The blocks on the bottom half of Table 12 present the percentage share of total AGI for each decile and each decile's share of tax liability. Thus, the tenth decile in 2020 represents the 90,139 returns reporting the top 10% of federal AGI. This group reported $28.42 billion in total AGI and $1,338.4 million in Nebraska individual income tax liability, net of nonrefundable credits. In 2020, taxpayers in this decile reported 43.13% of the income (federal AGI) and 56.76% of the tax liability. Reading down the columns provides a history of AGI and liability for returns in that decile. For example, AGI reported from the bottom 70% of returns increased from $9.495 billion in 2002 to $19.283 billion in 2020; and at the same time, Nebraska tax liability increased from $176.3 million to $359.2 million.

The last column in each decile group is labeled "Top 500 Returns." This represents a portion of the tenth decile and contains the 500 returns with the highest AGI. The top 500 returns are presented separately because the characteristics of the returns at the extremes are very different from other returns in the same decile and from returns in the other deciles. Relatively large proportions of returns in the first and tenth deciles report business income for sole proprietors and "pass-through" business entities such as S corporations, partnerships, or limited liability companies. The tax code operates differently for these taxpayers than it does for those returns where the primary source of income is wages. For example, many of the returns in the first decile report negative AGI due to business losses, which is nearly impossible for taxpayers who have only wage and salary income. At the tenth decile, a relatively large share of the returns report business income tax liability offset by tax incentive credits. This influences effective tax rates and on the measure of tax progressivity.

Note that income and tax liability totals for the top decile include the values for the top 500 returns. For example, in 2020 the top decile begins at an AGI of $139,728 compared to the top 500, which begins at an AGI of $2,365,000. This column in Table 12 indicates that in 2020, the top 500 returns reported $4.931 billion of the $28.423 billion of the total AGI, reported by the top decile. The top 500 returns, in terms of federal AGI, paid $142.9 million of the $1,338.4 million paid by the top decile. Another way to look at this is to say that the top 500 returns represent approximately 0.6% of the returns in the top decile, reported 17.3% of the federal AGI of the top decile, and pay 10.6% of the taxes paid by the top decile.

Table 12: Analysis by Deciles of Nebraska Income Tax Burden Ranked by Federal AGI (Resident Returns Only)

Tax Year	Number of Returns	Federal AGI ($ MM)					Nebraska Liability Net of Non-Refundable Credits ($ MM)				
		First 7 Deciles	8th Decile	9th Decile	10th Decile	Top 500 Returns	First 7 Deciles	8th Decile	9th Decile	10th Decile	Top 500 Returns
2020	901,388	19,283.01	7,708.88	10,491.51	28,423.08	4,930.90	359.19	250.91	409.34	1,338.35	142.97
2019	887,387	18,978.91	7,477.10	10,127.27	25,942.11	3,765.07	365.70	248.34	403.08	1,282.44	145.61
2018	869,824	18,374.53	7,231.60	9,772.73	24,540.06	3,187.43	350.68	240.49	389.10	1,215.66	121.69
2017	861,504	17,467.56	6,888.04	9,288.56	23,192.27	3,011.66	320.37	222.35	357.56	1,117.77	108.19
2016	857,062	16,763.35	6,646.74	8,958.83	22,186.76	2,818.56	295.42	210.87	341.21	1,068.16	99.63
2015	854,118	16,481.25	6,590.32	8,876.89	22,239.75	2,805.64	284.98	208.53	338.47	1,091.77	114.33
2014	841,991	15,957.30	6,401.10	8,614.90	22,472.30	3,506.30	278.80	201.70	328.00	1,093.20	138.40
2013	830,884	15,204.00	6,107.60	8,212.10	20,338.60	2,610.40	261.50	192.80	313.60	999.50	101.60
2012	823,713	14,745.60	5,927.80	7,968.10	21,805.30	3,629.10	256.00	187.40	303.20	1,099.90	167.50
2011	815,071	14,019.60	5,631.40	7,541.50	18,266.90	2,411.20	234.10	172.60	279.10	883.50	100.20
2010	803,335	13,633.10	5,408.30	7,212.00	18,110.20	3,097.40	221.50	161.30	260.10	829.40	100.90
2009	797,975	13,072.00	5,207.30	6,955.40	16,335.20	2,288.50	202.70	150.50	243.80	756.50	85.90
2008	808,051	13,233.70	5,275.50	7,021.30	17,615.00	2,879.30	220.90	153.90	246.90	814.80	104.10
2007	809,583	12,920.20	5,188.00	6,912.00	19,034.70	3,887.70	215.80	150.60	242.90	863.90	125.00
2006	775,856	12,024.00	4,764.00	6,331.00	17,488.20	3,869.90	210.60	145.30	230.40	799.30	135.80
2005	762,519	11,042.90	4,482.50	5,948.10	15,114.60	2,582.10	214.20	137.50	219.40	722.80	91.70
2004	754,702	10,485.60	4,274.70	5,675.80	13,926.70	2,276.30	201.10	129.10	206.60	667.40	84.20
2003	751,000	9,968.10	4,063.90	5,387.40	12,459.80	1,784.30	190.50	119.30	190.60	588.50	62.80
2002	752,974	9,495.10	3,958.00	5,228.70	11,989.60	1,641.20	176.30	110.60	175.60	536.70	54.20
		Federal AGI as Percent of Total (AGI Share Index)					Nebraska Liability Net of Non-Refundable Credits as Percent of Total (Net-Liability Share Index)				
Tax Year		First 7 Deciles	8th Decile	9th Decile	10th Decile	Top 500 Returns	First 7 Deciles	8th Decile	9th Decile	10th Decile	Top 500 Returns
2020	901,388	29.26	11.70	15.92	43.13	7.48	15.23	10.64	17.36	56.76	6.06
2019	887,387	30.35	11.96	16.20	41.49	6.02	15.90	10.80	17.53	55.77	6.33
2018	869,824	30.67	12.07	16.31	40.96	5.32	15.97	10.95	17.72	55.36	5.54
2017	861,504	30.73	12.12	16.34	40.81	5.30	15.88	11.02	17.72	55.39	5.36
2016	857,062	30.73	12.18	16.42	40.67	5.17	15.42	11.01	17.81	55.76	5.20
2015	854,118	30.41	12.16	16.38	41.04	5.18	14.81	10.84	17.59	56.75	5.94
2014	841,991	29.86	11.98	16.12	42.05	6.56	14.66	10.61	17.25	57.48	7.28
2013	830,884	30.49	12.25	16.47	40.79	5.24	14.79	10.91	17.74	56.55	5.75
2012	823,713	29.23	11.75	15.8	43.22	7.19	13.86	10.15	16.42	59.57	9.07
2011	815,071	30.84	12.39	16.59	40.18	5.3	14.92	11	17.79	56.3	6.39
2010	803,335	30.73	12.19	16.26	40.82	6.98	15.04	10.96	17.67	56.33	6.85
2009	797,975	31.45	12.53	16.73	39.3	5.51	14.98	11.12	18.01	55.89	6.35
2008	808,051	30.67	12.23	16.27	40.83	6.67	15.38	10.71	17.19	56.72	7.25
2007	809,583	29.33	11.78	15.69	43.21	8.82	14.65	10.22	16.49	58.64	8.48
2006	775,856	29.61	11.73	15.59	43.07	9.53	15.2	10.49	16.63	57.69	9.8
2005	762,519	30.18	12.25	16.26	41.31	7.06	16.55	10.63	16.96	55.86	7.09
2004	754,702	30.51	12.44	16.52	40.53	6.62	16.7	10.72	17.16	55.42	6.99
2003	751,000	31.27	12.75	16.9	39.08	5.6	17.49	10.96	17.5	54.05	5.77
2002	752,974	30.96	12.90	17.05	39.09	5.35	17.65	11.07	17.58	53.72	5.42

Table 13, "Effective Income Tax Rate and Burden Index by Deciles (Resident Returns Only)," presents the information from Table 12 in two different formats. The first block, "Effective Tax Rate," is calculated as a percentage of the Nebraska income tax paid by the decile class divided by the AGI total for that class. This effective tax rate reflects the rate at which all the AGI in the decile was taxed. The increase in effective tax rate across all deciles in 2003 compared to 2002 was due to the individual income tax rate increase. The decrease in effective tax rate across all deciles in 2006 compared to 2005 was due to the expansion of the bracket (LB 968), which resulted in lower tax liability for most taxpayers. Similarly, the decreases in effective tax rate across all deciles in 2007 compared to 2006 can be attributed to the elimination of the marriage penalty (LB 367). In 2013, the effective tax rate reflects the change in the income tax rate for the lower brackets (LB 970).

Table 13: Effective Income Tax Rate and Burden Index by Deciles (Resident Returns Only)

Tax Year	Effective Tax Rate					Nebraska Tax Burden Index				
	First 7 Deciles	8th Decile	9th Decile	10th Decile	Top 500 Returns	First 7 Deciles	8th Decile	9th Decile	10th Decile	Top 500 Returns
2020	1.86	3.25	3.90	4.71	2.90	0.52	0.91	1.09	1.32	0.81
2019	1.93	3.32	3.98	4.94	3.87	0.52	0.90	1.08	1.34	1.05
2018	1.91	3.33	3.98	4.95	3.82	0.52	0.91	1.09	1.35	1.04
2017	1.83	3.23	3.85	4.82	3.59	0.52	0.91	1.08	1.36	1.01
2016	1.76	3.17	3.81	4.81	3.53	0.50	0.90	1.08	1.37	1.01
2015	1.73	3.16	3.81	4.91	4.08	0.49	0.89	1.07	1.38	1.15
2014	1.75	3.15	3.81	4.86	3.95	0.49	0.89	1.07	1.37	1.11
2013	1.72	3.16	3.82	4.91	3.89	0.49	0.89	1.08	1.39	1.10
2012	1.74	3.16	3.81	5.04	4.62	0.48	0.87	1.06	1.40	1.26
2011	1.67	3.06	3.70	4.84	4.16	0.48	0.88	1.06	1.39	1.21
2010	1.62	2.98	3.61	4.58	3.26	0.49	0.90	1.09	1.38	0.98
2009	1.55	2.89	3.51	4.63	3.75	0.48	0.89	1.08	1.42	1.15
2008	1.67	2.92	3.52	4.63	3.62	0.50	0.88	1.06	1.39	1.09
2007	1.67	2.90	3.51	4.54	3.22	0.50	0.87	1.05	1.36	0.96
2006	1.75	3.05	3.64	4.57	3.51	0.51	0.89	1.07	1.34	1.03
2005	1.94	3.07	3.69	4.78	3.55	0.55	0.87	1.04	1.35	1.00
2004	1.92	3.02	3.64	4.79	3.70	0.55	0.86	1.04	1.37	1.06
2003	1.91	2.94	3.54	4.72	3.52	0.56	0.86	1.04	1.38	1.03
2002	1.86	2.79	3.36	4.48	3.30	0.57	0.86	1.03	1.37	1.01

The second block of Table 13, "Nebraska Tax Burden Index," is calculated by dividing the numbers in the lower right block of Table 12, "Nebraska Net of Liability after Non-Refundable Credits as Percent of Total (Net-Liability Share Index)," by the number in the lower left block of Table 12, "Federal AGI as Percent of Total (AGI Share Index)." The result is a share index that relates the percent share of income in each decile to the percent share of tax paid by the same decile group.

A hypothetical decile group with a tax burden index of 1.00 reporting 20% of the Federal AGI would have paid 20% of the tax. Similarly, if the decile paid less than 20% of the tax, the tax burden index would be less than 1.00. This index provides a measure of the tax burden imposed on Nebraska residents as income rises. Reading across the table for tax year 2020, the index increases from 0.52 for the bottom 70% to 1.32 for the top 10%. This also indicates that the Nebraska individual income tax is progressive, as tax liability increases faster than income.

The columns of the Nebraska tax burden index in Table 13 indicate that the index has generally decreased for the bottom seven deciles from 2002 to 2015, from .57 in 2002 to 0.49 in 2015. Since 2015, the index slightly increased to 0.52 in 2020. A possible explanation for the general decrease in the burden index is that Federal AGI for the higher income group grew more rapidly compared to the lower AGI group. By the same token, the general increase in the burden index is due to the fact that Federal AGI for the lower income group grew less rapidly compared to the higher AGI group. Note that the index for the top 500 returns is lower than the index for the top decile as a whole. The same is true for the effective tax rate on the left side of Table 13. A possible explanation for this apparent exception to the general progressivity of Nebraska's income tax code was mentioned earlier. The top 500 resident returns are much more likely to report pass-through income from business investment. Therefore, taxpayers are also much more likely to report large amounts of capital gains from the sale of businesses or business assets. In addition, these taxpayers are also more likely to have benefited from Nebraska's economic development programs such as the Nebraska Advantage Act (LB 312) – reducing tax liability for individuals.

Finally, Table 14 presents the starting points for the relevant deciles by AGI for selected years. The starting point for the eighth decile, which is also the ending point for the seventh decile, decreased from $56,281 to $55,859 between 2003 and 2007; however, it increased in subsequent years to $73,829 in 2020. The starting point for the ninth and tenth deciles increased in every year of the study. The starting point for the top 500 returns increased from 1996 to 1999, decreased in 2003, increased dramatically in 2007, slightly decreased in 2010, and increased significantly in 2012, and slight decrease in 2014 and 2016, then slight increase again in 2018 and 2020. The decline in 2010 is likely due to the negative impact on business incomes and capital gains during the Great Recession of 2008.

Table 14: Beginning AGI Level (Dollars)

Tax Year	8th Decile	9th Decile	10th Decile	Top 500
2020	73,829	98,516	139,728	2,365,000
2018	72,042	95,437	134,253	2,194,000
2016	67,209	89,009	124,492	2,015,000
2014	65,968	87,185	121,685	2,210,000
2012	62,484	82,534	115,035	2,368,772
2010	58,613	77,022	105,937	1,856,509
2007	55,859	73,140	100,759	2,055,360
2003	56,381	61,698	84,175	1,121,786
1999	43,611	56,781	77,690	1,345,486
1996	37,687	48,098	66,701	907,097