

The Fiscal & Economic

Effects of the Proposed

EPIC Consumption Tax in

Nebraska

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#### **EXECUTIVE SUMMARY**

The EPIC (Eliminate Property Income Corporate) Consumption Tax Act is a proposal to replace existing taxes with a consumption tax and is under consideration in the state of Nebraska. The objectives of a consumption tax include job creation, increased investment, tax simplification, and economic growth.

Specifically, the EPIC Consumption Tax Act would eliminate all state income taxes, state sales and use taxes, and all local property taxes while establishing a new state tax system consisting of a consumption tax and existing excise taxes. Moreover, by repealing the state individual income tax, the Act will eliminate the inheritance tax.

In order to estimate the economic effects of an extensive tax change such as is under consideration here, it is necessary to apply the tax change to a model that captures the economy-wide effects of its implementation. What is needed is a "dynamic" model that captures the adjustments of taxpayers to the new tax.<sup>1</sup> A static analysis, such as we previously offered, ignores these adjustments.

The Beacon Hill Institute Nebraska State Tax Analysis Modeling Program (NE-STAMP) is a dynamic model that captures the effects on economic activity from tax rate changes. NE-STAMP allows the Beacon Hill Institute (BHI) to provide estimates of the fiscal and economic effects of the proposed tax change.

In this study, BHI evaluates the replacement of all state taxes on income, the state sales use tax, and all local property taxes with a revenue-neutral, broad-based consumption tax in Nebraska. The revenue-neutral consumption tax rates required to replace existing revenue while exempting groceries starts at 7.23 percent in Calendar Year (CY) 2026 and falls to 6.52 percent in CY 2030. NE-STAMP generated the following results that represent change with the EPIC plan and over the baseline:

<sup>&</sup>lt;sup>1</sup> For a description of the model see <u>www.beaconhill.org/how-stamp-works</u>.

Table E-1: The Economic Effects of the EPIC Consumption Tax

<b>Economic Effects</b>	CY 2026	CY 2030
Population Change (%)	1.9	2.3
Personal consumption (%)	3.8	7.2
Net employment (jobs)	47,154	58,065
Investment (\$, billions)	8.576	10.195
Real disposable income(\$, billions)	9.632	12.684
State Real Gross Domestic Product (\$, billions)	23.259	32.229

- The state population would increase by 1.9 percent in CY 2026 and by 2.3 percent in CY 2030;
- Personal consumption would increase by 3.8 percent in CY 2026 and by 7.2 percent in CY 2030;
- Net employment (the increase in private sector jobs less the decrease in public sector jobs) would increase by 47,154 jobs in CY 2026 and by 58,065 jobs in CY 2030;
- Investment would increase by \$8.6 billion in CY 2026 and \$10.2 billion in CY 2030;
- Real (inflation-adjusted) disposable income would increase by \$9.6 billion in CY 2026 and by \$12.7 billion in CY 2030; and
- State real (inflation-adjusted) Gross Domestic Product would increase by \$23.3 billion in CY 2026 and by \$32.2 billion in CY 2030.

Our analysis finds that as a result of the replacement of current state and local taxes by a state consumption tax, the increase in the after-tax reward for saving would rise, motivating investment and economic growth. These effects would be largely driven by the consumption tax eliminating the existing "double taxation" feature of the current law as it affects saving. Double taxation occurs when the same source of income or assets is taxed twice, both at the corporate and personal levels. All leading economic indicators (real GDP, investment, real disposable income, and employment) would increase significantly under the tax change. The EPIC Consumption Tax Act offers a revenue-neutral policy reform that will benefit all Nebraskans by eliminating taxes on income and property.

### INTRODUCTION

Overall, Nebraska is well-positioned to compete and grow based on its endowments and constructive policies on infrastructure, human capital, and the environment. According to the Beacon Hill Institute's 18th State Competitiveness Index, Nebraska ranks 6th in the nation overall in its ability to expand personal income for its citizens. However, it ranks 24th in the nation according to the index's government and fiscal policy indicators.<sup>2</sup>

The state of Nebraska ranks low compared to other states in regard to tax "friendliness." According to the Tax Foundation, Nebraska ranks 30<sup>th</sup> in the nation in corporate income tax rates, 32<sup>nd</sup> in individual income tax rates, 39<sup>th</sup> in property tax rates, and 9<sup>th</sup> in state sales tax rates.<sup>3</sup> These rankings demonstrate the need for Nebraska to improve its existing tax environment.

The sustainability of its strong overall position going forward is not certain, and its ability to compete nationally and globally for talent and investment is not assured. Today, a consensus is emerging that Nebraska's current tax code is an obstacle to improving its business climate. Nebraska could benefit from improving its tax competitiveness.

A viable state tax system must be able to raise the revenue that government needs in order to provide public services while imposing the smallest possible burden on work, saving, and investment. The balancing act between taxation and spending becomes more difficult if other states provide more competitive tax systems. Offsetting its natural advantages, Nebraska levies high marginal personal income tax rates. As part of the state personal income tax, Nebraska implements a state inheritance tax, which counts among the highest rates nationwide, and only a handful of other states impose an inheritance tax. The inheritance tax particularly places a heavy tax burden on farmers and ranchers within the state. In addition, the corporate tax in Nebraska is among the steepest

<sup>&</sup>lt;sup>2</sup> The Beacon Hill Institute, State Competitiveness Report, 18<sup>th</sup> edition, (June 26, 2018), <a href="http://www.beaconhill.org/CompetitivenessHomePage.html">http://www.beaconhill.org/CompetitivenessHomePage.html</a>.

<sup>&</sup>lt;sup>3</sup> Tax Foundation, "Business Climate Index 2023," <a href="https://taxfoundation.org/2023-state-business-tax-climate-index/">https://taxfoundation.org/2023-state-business-tax-climate-index/</a>, (Accessed November 1, 2022).

in the nation.<sup>3</sup> Finally, local property taxes in Nebraska rank among the highest in the nation.<sup>4</sup> A consumption tax that replaces all state and local taxes is one way to correct for the competitive tax disadvantages Nebraska faces today.

There is interest now in enacting a consumption tax at the state level. Nebraska is one state that is seriously considering this change. The EPIC Consumption Tax reform eliminates five current Nebraska taxes and replaces them with one single tax that is both easy to understand and administer. Nebraska would become the first state to eliminate five current state taxes and replace them with a single consumption tax on retail products and services.

As described by the Consumption Tax Institute, every month, Nebraska taxpayers will be relieved from paying real & personal property taxes, sales and use taxes, individual (including the inheritance tax), and corporate income taxes. Miscellaneous taxes – including excise taxes such as alcohol, tobacco, and motor fuel taxes – will not be replaced under the consumption tax. Nebraska residents will be required to pay the consumption tax only when making a retail purchase of a new good or service. The purchases of groceries for off-premise use will be exempt under the consumption tax system. Consumers will also be exempt from paying the consumption tax on used goods, which will further benefit lower-income taxpayers. Table 1 displays the following:

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

### NEBRASKA TAXES TO BE REPLACED

The Nebraska Department of Revenue (DOR) reports that net state and local tax collections (excluding miscellaneous taxes) totaled \$10.5 billion in FY 2021.<sup>5</sup> We assume that EPIC Consumption Tax Act would replace state tax revenues raised by the state individual income tax, the state corporate income tax, all local property taxes, and state sales and use taxes. We estimate the tax revenue to be replaced by the consumption tax, using a compounded annual growth rate (CAGR), to be \$11.7 billion in CY 2026 and \$12.9 billion in CY 2030. Table 1 displays the revenue sources to be replaced by the consumption tax.

Table 1: Taxes Replaced by the Consumption Tax

Tax	CY 2026 (millions, \$)	FY 2030 (millions, \$)
Individual Income Tax	3.226	3.591
Corporate Income Tax	0.707	0.850
Local Property Taxes	5.472	6.116
State Sales and Use Tax	2.264	2.357
Grand Total	11.670	12.914

The replacement of the existing state and local tax revenue sources will allow for budgetary spending reductions or the elimination of various state and local government agencies that enforce revenue collection. Specifically, the replacement of tax revenues under the EPIC Consumption Tax Act will eliminate multiple divisions under the DOR, including the Property Assessment Tax Division (PAD), the Sales Tax Division, the Income Tax Division, and the Inheritance Tax Division. The replacement of local property taxes will allow for the elimination of the 93 county property assessor offices. Inevitably, the elimination of these agencies will lead to cost savings. However, some of the jobs lost, as a result, would be replaced by the jobs created for a newly formed division within the Nebraska Department of Revenue that would administer the consumption tax. Accordingly, the elimination of these agencies was not considered in this analysis.

<sup>&</sup>lt;sup>5</sup> Nebraska Department of Revenue, General Fund Receipts, (November 2022), Department of Revenue, <a href="http://www.revenue.nebraska.gov/research/STATISTICS.html">http://www.revenue.nebraska.gov/research/STATISTICS.html</a>.

The EPIC Consumption Tax Act would also eliminate all current tax expenditures as a result of replacing existing state and local tax revenue sources. Tax expenditures are revenues from tax incentives, exclusions, deductions, credits, and preferential tax rates that are foregone. Among the tax expenditures that will be eliminated are those resulting from the ImagiNE Nebraska Act, the Employment and Investment Growth Act, the Nebraska Property Tax Incentive Act, the Nebraska Property Tax Credit Act, and Tax Increment Financing (TIF). The tax revenues to be replaced under the consumption tax are net of these tax expenditures (which is to say that they take into account tax expenditures related to each revenue source.)

### THE NEBRASKA STAMP MODEL

The implementation of a consumption tax in Nebraska poses several questions relating to its dynamic effects:

- What are the economic benefits, and how will they improve the state's standing relative to other states?
- How will the economy respond in terms of jobs, disposable income, investment, and state Gross Domestic Product (GDP)?

The Beacon Hill Institute analyzed the implementation of the consumption tax by using its State Tax Analysis Modeling Program for Nebraska (NE-STAMP). STAMP is a Computable General Equilibrium (CGE) model that determines the effects of changes in a wide variety of state taxes on key economic indicators.<sup>6</sup>

The model applies sound economic theory to the determination of the effects of tax changes on employment, investment, and income. NE-STAMP is able to capture the "dynamic" effects of a tax change on the economy. In that way, it is superior to a "static" analysis, which ignores those effects. NE-STAMP provides answers to the questions above. The consumption tax analyzed in this study is intended to be revenue neutral. All revenue raised by state taxes on income, the state sales tax, and all local property taxes would be replaced with a broad-based consumption tax that exempts sales on groceries. The reduction in current state taxes would provide a boost to the state's private economy leading to an increase in private employment, disposable income, and investment.

Static estimates assume that there is no change in underlying economic activity in response to a change in tax law. For example, a static estimate of a cut in the sales tax, say from 5 percent to 4 percent, would cause revenues to fall by 20 percent (= 5-4)/5). A dynamic estimate would show a smaller decrease in revenue because it would capture the positive effect on other revenue sources from the cut in the sales tax. In this example, businesses would have more money to make profitable investments in Nebraska, thus increasing investment, employment, and incomes

Ibid.		

which, in turn, would boost sales and property tax collections. One of the principal purposes of NE-STAMP is to capture such dynamic effects.

In NE-STAMP, taxes are divided into several categories, with each category treated differently by the model: taxes on labor and capital, sales, and excise taxes on industrial sectors (e.g., the motor fuels tax), household taxes (residential property tax and license fees), and personal income taxes. These taxes are then inputted into GDP and governmental income equations.

### ECONOMIC AND FISCAL EFFECTS

BHI modeled the implementation of the consumption tax for the period 2026 to 2030. Table 2 displays the results of a **7.23** percent consumption tax rate in CY 2026 and a **6.52** percent consumption tax rate in CY 2030 (the last year of the analysis.) The rates allow for groceries to be exempted from the consumption tax base.

Table 2: The Fiscal and Economic Effects of the Consumption Tax

<b>Economic Effects</b>	CY 2026	CY 2030
Population Change (%)	1.9	2.3
Personal consumption (%)	3.8	7.2
Net employment (jobs)	47,154	58,065
Investment (\$, billions)	8.576	10.195
Real disposable income(\$, billions)	9.632	12.684
State Real Gross Domestic Product (\$, billions)	23.259	32.229
Fiscal Effects (\$ millions)		
Personal Income Tax	-3,226	-3,591
Corporate Income Tax	-707	-850
Sales and Use Tax	-2,264	-2,357
Consumption Tax	11,310	12,319
Other Taxes	99	126
Total State Tax Change	5,211	5,647
Residential Property Tax	-2,581	-2,910
Business Property Tax	-2,891	-3,206
Other Taxes and Fees	275	520
Total Local Tax Change	-5,197	-5,596
Total State and Local Tax Change	14	51

NE-STAMP estimates that Nebraska's population would increase by 1.9 percent in CY 2026 and by 2.3 percent in CY 2030. Personal consumption would increase by 3.8 percent in CY 2026 and by 7.2 percent in CY 2030. Net employment would increase by 47,154 jobs in CY 2026 and by 58,065 jobs in CY 2030. Investment would increase by \$8.6 billion in CY 2026 and by \$10.2 billion in CY 2030. Real (inflation-adjusted) disposable income would increase by \$9.6 billion in CY 2026 and by \$12.7 billion in CY 2030. State real (inflation-adjusted) Gross Domestic Product would increase by \$23.3 billion in CY 2026 and by \$32.2 billion in CY 2030.

State tax revenues would increase by \$5.2 billion in CY 2026 and by \$5.6 billion in CY 2030. Local revenue, however, would fall by \$5.2 billion in CY 2026 and by \$5.56 billion in CY 2030. When combined, total state and local tax revenues (in other words, the increase in state tax revenue and the decrease in local tax revenue) would increase by \$14 million in CY 2026 and by \$51 million in CY 2030.

Table 3: The Fiscal and Economic Effects of the Consumption Tax (Eliminating the Consumption Tax Exemption on Groceries)

<b>Economic Effects</b>	CY 2026	CY 2030
Population Change (%)	2.0	2.4
Personal consumption (%)	4.5	7.6
Net employment (jobs)	47,981	58,890
Investment (\$, billions)	9.325	10.456
Real disposable income (\$, billions)	9.956	12.855
State Real Gross Domestic Product (\$, billions)	25.428	35.659
Fiscal Effects (\$ millions)		
Personal Income Tax	-3,226	-3,591
Corporate Income Tax	-707	-850
Sales and Use Tax	-2,264	-2,357
Consumption Tax	11,320	12,321
Other Taxes	104	129
Total State Tax Change	5,226	5,652
Property Tax	-2,581	-2,910
Sales Tax	-2,891	-3,206
Other Taxes and Fees	287	544
Total Local Tax Change	-5,185	-5,571
Total State and Local Tax Change	41	81

Table 3 displays the results of replacing all state taxes on income, state sales and use taxes, and all local property taxes with a broad-based consumption tax rate of **6.84** percent in CY 2026 and **6.15** percent in CY 2030. In this simulation, the consumption tax exemption on groceries is eliminated (i.e., groceries are included in the consumption tax base.) The Nebraska state population would increase by 2.0 percent in CY 2026 and by 2.4 percent in CY 2030. Personal consumption would increase by 4.5 percent in CY 2026 and by 7.6 percent in CY 2030. Net employment would increase by 47,981 jobs in CY 2026 and by 58,890 jobs in CY 2030. Investment would increase by \$9.3 billion in CY 2026 and by \$10.5 billion in CY 2030. Real

disposable income would increase by \$10.0 billion in CY 2026 and by \$12.9 billion in CY 2030. State real Gross Domestic Product would increase by \$25.4 billion in CY 2026 and by \$35.7 billion in CY 2030.

State tax revenues would increase by \$5.2 billion in CY 2026 and by \$5.7 billion in CY 2030. Local revenue, however, would fall by \$5.2 billion in CY 2026 and by \$5.6 billion in CY 2030. When combined, total state and local tax revenues would increase by \$41 million in CY 2026 and by \$81 million in CY 2030.

### **SUMMARY**

Table 4 displays the required revenue-neutral broad-based consumption tax rate in CY 2026 and CY 2030 to replace the desired state and local revenue sources. The displayed rates leave enough for a slight revenue surplus.

Table 4: Consumption Tax Rates By Scenario

State and local taxes to be replaced	CY 2026	CY 2030
Individual income tax, corporate income tax, all property taxes, state sales and use taxes	7.23%	6.52%
Individual income tax, corporate income tax, all property taxes, and state sales and use taxes, while eliminating exemption on groceries	6.84%	6.15%

NE-STAMP estimates that a consumption tax rate of **7.23** percent in CY 2026 and **6.52** percent in CY 2030 will allow Nebraska to replace state taxes on income, the state sales and use tax, and all property taxes. All purchases of groceries would be exempt from the consumption tax.

If the consumption tax exemption on groceries were to be eliminated, NE-STAMP estimates that a consumption tax rate of **7.10** percent in CY 2026 and **6.39** percent in CY 2030 is required to replace state taxes on income, the state sales and use tax, and all property taxes.

### CONCLUSION

Tax policies matter significantly for their effects on a state's ability to provide an environment conducive to economic growth.<sup>7</sup>

Public finance economists recognize that taxes impose an excess burden or deadweight loss on the economy. Any move toward tax reform must consider the fact that higher tax rates reduce the tax base and increase this dead loss. The goal of a viable tax system should be to ensure not only fairness but also efficiency.

The argument that a consumption tax is superior to an income tax has a long history. The reason is that an income tax taxes saving twice, once when income is earned and saved and again when the taxpayer gets a return on his saving. The state can eliminate this discrimination by taxing households on what they consume rather than what they earn. A consumption tax is pro-saving, pro-investment, and, therefore, pro-growth.

Replacing all state taxes on income (including the inheritance tax), the state sales and use tax, and all local property taxes with a revenue-neutral consumption tax would generate billions of dollars in investment, real disposable incomes, and state Gross Domestic Product. Moreover, the consumption tax would create tens of thousands of jobs. When groceries are exempted from the tax base, the Nebraska consumption tax rate of **7.23** percent in CY 2026 would rank 32<sup>nd</sup> in the nation (including Washington D.C.) in combined state and local sales taxes.<sup>8</sup> However, this would allow no income taxes or property taxation.

This analysis shows that all income groups would gain under a revenue-neutral consumption tax. There are few policy prospects in the state that offer such large benefits to so many people. Moreover, the economic well-being of Nebraska households in all income groups would, on average, increase under a consumption tax. The consumption tax exemption on used goods will be an

<sup>&</sup>lt;sup>7</sup> Pavel A. Yakovlev, *State Economic Prosperity and Taxation*, Working Paper 14-19, Mercatus Center, George Mason University, (July 2014), <a href="http://mercatus.org/sites/default/files/Yakovlev-State-Economic-Prosperity.pdf">http://mercatus.org/sites/default/files/Yakovlev-State-Economic-Prosperity.pdf</a>.

<sup>&</sup>lt;sup>8</sup> The Tax Foundation, "State and Local Sales Tax Rankings, (November 2022), <a href="https://taxfoundation.org/publications/state-and-local-sales-tax-rates/">https://taxfoundation.org/publications/state-and-local-sales-tax-rates/</a>.

additional economic boost to low and middle-income citizens who purchase a significant amount of used goods. NE-STAMP shows that the Nebraska EPIC Consumption Tax Act offers reform that has considerable benefits for people in all income classes.

Nebraska ranks tied for fifth nationwide for its unemployment rate of 2.4 percent.<sup>9</sup> Nebraska's employment outlook, combined with the newly created private sector jobs under the EPIC Consumption Tax Act, should allow for state and county employees whose jobs have been eliminated to quickly find work.

Our analysis addresses the major concern over imposing a consumption tax, specifically the regressivity of the tax. In regards to border leakage, stores on the border of Nebraska would face pressure to reduce costs to maintain cross-border competition with stores in neighboring states. However, the model shows the benefits incurred under the tax would come at no cost in statewide consumption (and with a slight increase in tax revenues.) Another concern regarding consumption taxes is an increase in fraud (i.e., people evading the tax.) The EPIC Consumption Tax Act would utilize the fraud detection and elimination tactics currently utilized by the state of Nebraska to alleviate this issue.

<sup>&</sup>lt;sup>9</sup> The Bureau of Labor Statistics, Midwest Information Office, (Accessed November 2022), <a href="https://www.bls.gov/regions/midwest/nebraska.htm">https://www.bls.gov/regions/midwest/nebraska.htm</a>

## **Appendix**

### **Methodology**

The Nebraska consumption tax would replace state tax revenues raised by the state individual income tax, the state corporate income tax, all local property taxes, and state sales and use taxes. We estimate the static tax revenue to be replaced by the Nebraska consumption tax to be \$11.670 billion in CY 2026 and \$12.914 billion in CY 2030, as displayed in Table A-1.

In other words, the Nebraska consumption tax must raise this amount of revenue to be considered a revenue-neutral tax change.

As proposed, the EPIC Consumption Tax Act would exclude some components of GDP, such as investment and some state government spending. We account for these changes by following the same method in calculating the Nebraska consumption tax base. Table A-1 displays the calculation of the consumption tax base and the calculation of the Nebraska consumption tax rate.

Table A-1: The Calculation of the Nebraska Consumption Tax Rate (\$, millions)

Tax Base*	CY 2026	CY 2030
Personal consumption	108,492	129,759
State and local government consumption	10,637	12,722
State and local government salaries and wages	9,342	11,173
New homes sales	6,479	7,749
Gross tax base	134,949	161,402
Tax base	134,949	161,402
Adjustment for administrative fee (0.25%)	337	404
Net tax base	134,612	160,999
Tax revenue (to be replaced)	11,670	12,914
Static rate	8.67%	8.02%
Dynamic rate	7.23%	6.52%

<sup>\*</sup>Tax base excludes the sales of groceries.

We calculate the tax base using data from the Bureau of Economic Analysis (BEA), which provides detailed data sets for state and local economies. The BEA data includes Nebraska-specific data for household consumption, government

consumption, and national data for spending on new structures.<sup>10</sup> We use data from the U.S. Census Bureau and National Multi-Family Housing Council to estimate the portion of the national data attributable to Nebraska.

The BEA provides comprehensive household consumption data.<sup>11</sup> However, we exclude spending on education and imputed rent from private consumption and add back in the sale of new homes and dwellings.

We estimate the personal consumption base for Nebraska in CY 2019 and grow the BEA data to CY 2030 using the CAGR for each sector. Then we take one-half from FY 2026 and one-half from FY 2027 to produce our estimate for CY 2026. We use the same method to obtain our estimate in CY 2030, as listed in line 1 of Table A-1.

The consumption tax base includes the sale of new homes, home improvements, and related commissions. BEA estimates national data for spending on new single-family and multi-family housing, manufactured homes, home improvements, and real estate brokers and commissions. We estimate the portion of the national data attributed to Nebraska. We estimate Nebraska's share of these items in FY 2018 to be \$4.131 billion. We use the CAGR to grow these figures to obtain our estimate in CY 2030, listed in line 4 of Table A-1.

The U.S. Census Bureau provides data for state and local government consumption spending.<sup>12</sup> We grow the 2020 Nebraska state and local government spending data (the latest available) through CY 2030 using the same method as with private consumption spending. We estimate Nebraska state and local government spending to be \$12.722 billion in CY 2030, listed in line 2 of Table A-1.

<sup>&</sup>lt;sup>10</sup> The Bureau of Economic Analysis, Regional Data, Nebraska, SAEXP1 Total personal consumption expenditures (PCE) by state, SAINC7N Wages and Salaries by NAICS Industry, Table 5.4.5. Private Fixed Investment in Structures by Type.

<sup>&</sup>lt;sup>11</sup> Personal Consumption Expenditures, Nebraska, (Accessed November 2022) <a href="https://www.bea.gov/data/consumer-spending/state">https://www.bea.gov/data/consumer-spending/state</a>.

<sup>&</sup>lt;sup>12</sup> 2020 State & Local Government Finance Historical Datasets and Tables, Nebraska, (Accessed November 2022), <a href="https://www.census.gov/data/datasets.html">https://www.census.gov/data/datasets.html</a>.

Another component of the consumption tax base is state and local government spending on salaries and wages. Using the same growth method as above, we grow the 2020 state and local government spending on salaries and wages to obtain our estimate of \$11.173 billion in CY 2030, listed in line 3 of Table A-1. We then add together the estimates from above to obtain our gross Nebraska consumption tax base of \$160.999 billion in CY 2030.

The EPIC Consumption Tax Plan includes an administrative fee of 0.25 percent of the tax base to be paid to vendors and states for collecting the tax. We calculate the administrative fee as a percentage of the net tax base. We calculate an administrative fee of \$404 million in CY 2030. We then divide the tax revenue to be replaced (\$12.914 billion in CY 2030) by the net consumption tax base to obtain the static consumption tax rate of 8.02 percent in CY 2030.

#### The STAMP Model

To identify the economic effects of the tax and understand how they operate through a state's economy, BHI customized its STAMP (State Tax Analysis Modeling Program) model for Nebraska (NE-STAMP).<sup>13</sup> NE-STAMP is a five-year dynamic CGE (computable general equilibrium) model that has been programmed to simulate changes in taxes, costs (general and sector-specific), and other economic inputs. As such, it provides a mathematical description of the economic relationships among producers, households, governments, and the rest of the world.<sup>14</sup>

A CGE tax model is a computerized method of accounting for the economic effects of tax policy changes. A CGE model is specified in terms of supply and demand

<sup>&</sup>lt;sup>13</sup> Ibid.

<sup>&</sup>lt;sup>14</sup> For a clear introduction to CGE tax models, see John B. Shoven and John Whalley, "Applied General-Equilibrium Models of Taxation and International Trade: An Introduction and Survey," *Journal of Economic Literature* 22 (September, 1984): 1008. Shoven and Whalley have also written a useful book on the practice of CGE modeling entitled *Applying General Equilibrium* (Cambridge: Cambridge University Press, 1992). See also Roberta Piermartini and Robert Teh *Demystifying Modelling Methods for Trade Policy* (Geneva, Switzerland: World Trade Organization, 2005) <a href="http://www.wto.org/english/res">http://www.wto.org/english/res</a> e/booksp e/discussion papers10 e.pdf (accessed August 12, 2021).

for each economic variable included in the model, where the quantity supplied or demanded of each variable depends on the price of each variable. Tax policy changes are shown to affect economic activity through their effects on the prices of outputs and of the factors of production (principally, labor and capital) that enter into those outputs.

A CGE model is in "equilibrium" in the sense that supply is assumed to equal demand for the individual markets in the model. For this to be true, prices are allowed to adjust within the model (i.e., they are "endogenous"). For instance, if the demand for labor rises while the supply remains unchanged, then the wage rate must rise to bring the labor market into equilibrium. A CGE model quantifies this effect.

Finally, a CGE model is numerically specified ("computable"), which is to say it incorporates parameters that are believed to be descriptive of the actual relationships between quantities and prices. It produces estimates of changes in quantities (such as employment, the capital stock, gross state product, and personal consumption expenditures) that result from changes in prices (such as the price of labor or the cost of capital) arising from changes in tax policy (such as the substitution of an income tax for a sales tax).

Because it consists of a large number of interrelated equations, a CGE model ordinarily requires the application of a nonlinear computational algorithm, typically some variation on Newton's method. STAMP requires the development and application of a sophisticated computer program for the solution of its equations.

In order to simulate the effects of the consumption tax, BHI adjusted the NE-STAMP model to incorporate the new consumption tax. BHI accomplished this by adding the tax and then by changing the current sales tax base to a new broadbased consumption tax base according to the EPIC Consumption Tax plan.

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The Beacon Hill Institute focuses on federal, state, and local economic policies as they affect citizens and businesses. The Institute conducts research and educational programs to provide timely, concise, and readable analyses that help voters, policymakers, and opinion leaders understand today's leading public policy issues.

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