



Should States Put Food Back on the Table? An Examination of Food in the Sales Tax Base

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In North Carolina, and the United States more broadly, personal income taxes and general sales taxes are the two main sources of state own-source revenue. For FY 2023, sales and use taxes made up approximately a third of North Carolina's general-fund revenue.¹ The importance of sales taxes is likely to grow as North Carolina continues to reduce and eliminate the corporate-income tax and to reduce personal income tax rates. This is similar to what is occurring, often to

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1. "[North Carolina Ends Fiscal Year with \\$33.5 Billion in Revenue; \\$3 Billion Above Budget](#)," North Carolina Office of State Budget and Management, August 7, 2023, <https://www.osbm.nc.gov/news/press-releases/2023/08/07/north-carolina-ends-fiscal-year-335-billion-revenue-3-billion-above-budget>.

a lesser degree, in other states.² One consequence of this trend may be an increased reliance on sales taxes. Although average state sales tax rates have risen, the overall tax base has continued to narrow during the same period.³

While the sales tax could meet the criteria that the majority of tax-policy experts favor, namely taxes with a broad base and a low rate, we observe that the sales tax base covers only about 35 percent of household spending in the United States.⁴ There are many reasons for this lack of coverage, but the primary drivers are the exclusion of most services and the exemption of unprepared food. That exemption, the focus of this bulletin, typically aims to increase the fairness of the sales tax. Ultimately, what is included, excluded, and exempted from the sales tax base is a major concern for state governments. The trend has been for states to narrow their tax bases rather than expand them to accommodate the changing economy.⁵

In this analysis, we revisit North Carolina's unprepared-food exemption from the state sales tax base. While there was strong agreement in the infancy of the sales tax that this exemption was good policy, it is time to revisit it. In fact, some note that the strength of the sales tax has been eliminated by exemptions. Sales taxes "have developed a narrower base and higher rate . . . reflecting what some might consider the worst of all possible tax policies."⁶ Since local sales taxes include food in the tax base, we are able to consider the revenue loss caused by the exemption, the possible revenue-neutral sales tax rate if food were to be included in the state tax base, the volatility of the sales tax on food and all other goods, and the equity implications for individual taxpayers and for county governments. (For the remainder of this bulletin, the term *food* refers to unprepared food unless stated otherwise.)

Results indicate that by exempting food, North Carolina forgoes about 11 percent (\$973 million) of its current sales tax revenue and experiences greater revenue volatility. If food were included, the state could reduce its general sales tax rate from 4.75 percent to 4.25 percent and maintain revenue neutrality. This lower tax on general items counteracts the tax burden from food; however, consumers across all income quintiles experience higher net burdens if benefits from the Supplemental Nutrition Assistance Program (SNAP) are not taken into account. Including average SNAP benefits, we find that taxing food would be progressive for SNAP participants and the bottom-income quintile overall, given eligibility and participation rates in SNAP. Additional redistributions would be necessary to address the regressivity of taxing food for other income quintiles.

2. Craig L. Johnson et al., "[Long-Term Trends in State Personal Income Tax](https://www.taxnotes.com/special-reports/individual-income-taxation/long-term-trends-state-personal-income-tax/2024/04/11/7jdd2)," *Special Reports* (blog), *Tax Notes*, April 15, 2024, <https://www.taxnotes.com/special-reports/individual-income-taxation/long-term-trends-state-personal-income-tax/2024/04/11/7jdd2>.

3. Jared Walczak, [Modernizing State Sales Taxes: A Policymaker's Guide](https://taxfoundation.org/research/all/state/state-sales-tax-reform-guide/) (Tax Foundation, 2024), <https://taxfoundation.org/research/all/state/state-sales-tax-reform-guide/>.

4. Nikhita Airi and Frank Sammartino, [How Broad Are State Sales Tax Bases?](https://www.urban.org/sites/default/files/publication/104096/how_broad_are_state_sales_taxes.pdf) (Tax Policy Center, April 2021), https://www.urban.org/sites/default/files/publication/104096/how_broad_are_state_sales_taxes.pdf.

5. John L. Mikesell et al., "[How Does the Depression-Designed Retail Sales Tax Cope with the New Economy? A Tax for the New and a Tax for the Old](https://doi.org/10.1086/713001)," *National Tax Journal* 74, no. 1 (2021): 187–220, <https://doi.org/10.1086/713001>. For example, we see states removing necessities from the tax base, such as feminine hygiene products (e.g., Texas in 2023), diapers (e.g., Florida in 2023), and food (e.g., Kansas in 2025).

6. Mikesell et al., "[Depression-Designed Retail Sales Tax](#)," 187.

Why Exempt Food from the Sales Tax Base?

Food is the most common exemption for a tangible good across the states. However, some states still tax food at the state or local level. Many of the states that continue to tax food do so at a lower rate than other goods.⁷ This is a policy area that is very much in flux, though. For example, Alabama taxes food at a rate of 3 percent, which is lower than the retail-sales rate, and is set to reduce it to 2 percent. However, total rates (state plus local) on food can be as high as 9 percent, as it is in Montgomery. For jurisdictions like Montgomery, the state reduction would only reduce the rate to 8 percent, which may not make as much difference as some imagine. Alabama will also only reduce the state rate to 2 percent if the target revenues for the Education Trust Fund are met. Illinois had a 1 percent grocery tax; it was repealed at the start of 2026, but local governments are still able to impose a local grocery tax. Mississippi currently has a state rate of 7 percent, but it is being lowered to 2.5 percent by 2036. Kansas eliminated the state food tax in January 2025, but the local tax still applies. Oklahoma eliminated its food tax in the fall of 2024, but the local rates, which can be as high as 7 percent, still apply.⁸ Although the majority of states do not tax food, this remains an active policy issue in many states.

The primary reason for exempting food or taxing food at a reduced rate was summarized by David Davies in 1959: “In any case, it is clear that policy-makers can alter the progressivity or regressivity of the entire sales-tax structure by including food for home consumption in the tax base or by excluding it.”⁹ Taxes on food are regressive. For households in the lowest quintile, spending on food is 32.6 percent of their income. For those in the middle quintile, it is only 13.5 percent; for those in the highest quintile, 8.1 percent.¹⁰ Similarly, there are other common exemptions from the sales tax base that, like food, are considered necessities and regressive, like exemptions on prescription medications, clothing, and feminine-hygiene products.

Why Revisit the Food-Tax Exemption?

First, it is important to consider the broader landscape of what is and is not subject to sales tax. Recent estimates suggest that about 34 percent of household spending is taxed under sales taxes in states that levy them. On average, 85 percent of durable goods are taxed across states. Coverage drops considerably to 41 percent for nondurable goods, like food and clothing. However, only 20 percent of services are taxed on average. North Carolina follows these national

7. A list of states that still tax food at the state or local level is available in Whitney Afonso and Alex Combs, “A Framework for Sales Tax Base Expansion: Food Taxation in North Carolina and Applications for Other States,” *Public Budgeting and Finance*, ahead of print, February 18, 2026.

8. Katelyn Washington, “[The ‘Food Tax’: Which States Still Tax Groceries?](https://www.kiplinger.com/taxes/states-that-still-tax-groceries),” *Kiplinger*, February 12, 2026, <https://www.kiplinger.com/taxes/states-that-still-tax-groceries>; “[Is There a Tax on Food? Determine Grocery Sales Tax by State](https://taxhero.net/blog/sales-tax-on-food/),” *TaxHero*, January 1, 2026, <https://taxhero.net/blog/sales-tax-on-food/>; Illinois Department of Revenue, [Illinois Grocery Tax Changes Effective January 1, 2026](https://tax.illinois.gov/research/publications/bulletins/fy-2026-03.html), Informational Bulletin FY 2026-03 (Illinois Department of Revenue, 2025), <https://tax.illinois.gov/research/publications/bulletins/fy-2026-03.html>.

9. David G. Davies, “[An Empirical Test of Sales-Tax Regressivity](https://www.jstor.org/stable/1826700),” *Journal of Political Economy* 67, no. 1 (1959): 78, <https://www.jstor.org/stable/1826700>.

10. Megan Sweitzer and Victoria Davidenko, “[Food Spending as a Share of Income Declines as Income Rises](https://www.ers.usda.gov/data-products/chart-gallery/chart-detail?chartId=58372),” Economic Research Service, November 1, 2024, <https://www.ers.usda.gov/data-products/chart-gallery/chart-detail?chartId=58372>.

Table 1. Coverage of the Sales Tax Base

Expenditure	North Carolina (%)	United States (%)
Overall household spending	34	34
Durable goods	66	85
Nondurable goods	38	41
Services	24	20

Source: Nikhita Airi and Frank Sammartino, [How Broad Are State Sales Tax Bases?](https://www.urban.org/sites/default/files/publication/104096/how_broad_are_state_sales_taxes.pdf) (Tax Policy Center, 2021), 17, https://www.urban.org/sites/default/files/publication/104096/how_broad_are_state_sales_taxes.pdf.

trends (see Table 1). While services are the largest class of exclusions and exemptions from the sales tax base, the feasibility of taxing the majority of those services is low. For example, housing and health care make up 36 percent of household-consumption expenditures, and financial services account for another 8 percent.¹¹ While services make up approximately 65 percent of total household spending, about two-thirds of them fall into these three categories, which are almost completely untaxed by every state. The remaining third is also not universally taxed and would be challenging to tax, both politically and administratively in some cases. Thus, while it is critical that states carefully examine the possibility of a tax on services, it is also important to revisit the exemption on nondurable goods, which make up just over 20 percent of household expenditures.¹²

Given that food accounts for approximately 13 percent of household expenditures in the United States, it represents a significant share of untaxed nondurable goods.¹³ This analysis proposes policy criteria for examining tax exemptions and then applies them to the case of including food in North Carolina's sales tax base. Those policy criteria are discussed in the following section. There are two primary reasons why scholars and policymakers may want to reconsider food exemptions, as well as other exemptions.

First, the erosion of the sales tax base's coverage is concerning. A shrinking sales tax base can result in reduced government revenue, necessitating higher sales tax rates or other taxes and potentially diminishing public services. For example, the mean sales tax coverage in 1970 was almost 50 percent but was estimated to be below 30 percent in FY 2021. This has led to increased rates over the same period, with average rates being 3.25 percent in 1970 and 6 percent in 2022.¹⁴ In California and some other states, revenues have grown slower than the economy even when rate increases are in place.¹⁵

11. Airi and Sammartino, [How Broad Are State Sales Tax Bases?](https://www.urban.org/sites/default/files/publication/104096/how_broad_are_state_sales_taxes.pdf), 6. Only Iowa taxes service charges for banks and financial institutions, but not other financial services. “[State-by-State Guide to Charging Sales Tax on Services](https://www.avalara.com/us/en/learn/whitepapers/service-taxability-by-state.html),” Avalara, <https://www.avalara.com/us/en/learn/whitepapers/service-taxability-by-state.html>, accessed February 16, 2026.

12. Airi and Sammartino, [How Broad Are State Sales Tax Bases?](https://www.urban.org/sites/default/files/publication/104096/how_broad_are_state_sales_taxes.pdf), 6–8.

13. Sweitzer and Davidenko, “[Food Spending](#).”

14. Jackson Brainerd, “[Examining State Sales Taxes](#),” National Conference of State Legislatures, October 7, 2022, <https://www.ncsl.org/fiscal/examining-state-sales-taxes>.

15. Chris Alamo, “[Why Have Sales Taxes Grown Slower Than the Economy?](#),” Legislative Analyst's Office, August 5, 2013, <https://www.lao.ca.gov/reports/2013/tax/Sales-tax/Sales-tax-080513.aspx>.

Second, several unintended consequences of the food exemption make it potentially suboptimal. Most notably, the equity improvements may not be as significant as they were previously. While states have exempted food from the sales tax base to improve equity, that policy choice has affected the tax landscape and actual equity improvements in other ways. As noted, an important ramification of reduced sales tax coverage is the increase of sales tax rates to continue to generate needed revenues.¹⁶ While the food exemption is only one reason for the low coverage, it is one of the more administratively and politically feasible exemptions to revisit. There are also concerns about whether the exemption of food actually improves the equity of the sales tax, especially since it exempts only unprepared food. Prepared foods, such as frozen dinners, rotisserie chickens, and fast food, are not typically exempt and account for a larger share of food purchases among low-income households.¹⁷ Given the evidence that the food exemption has led to higher sales tax rates, this may mean that it harms low-income households more than it helps.

The impact on low-income households, considering participation in SNAP and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), is particularly relevant to this discussion. One study examining Alabama, which taxed food at the full state rate at the time, found that the exemption of food from the sales tax base did not improve progressivity because of the widespread uptake of SNAP and might do more harm by increasing the sales tax rates on other goods.¹⁸ It concluded, “Because SNAP effectively targets poor households and because SNAP benefits are nontaxable, the poor really do not benefit from the sales tax exemption for food at home. Indeed, almost surely they would be better off if food at home were in the tax base and revenue-neutral adjustments were made to the sales tax rate.”¹⁹ Ultimately, some have characterized food exemptions as problematic since they are not well-targeted, create substantial revenue losses, are inefficient, distort consumer behaviors, and increase administration and compliance costs.²⁰ Of course, other studies highlight the benefits of food exemptions, such as decreasing food insecurity and food deserts.²¹

16. Roy Bahl and Richard R. Hawkins, “Does a Food Exemption Lead to a Higher State Sales Tax Rate?,” *Proceedings: Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association* 90 (1997): 447–54; Brainerd, “[Examining State Sales Taxes](#)”; Alamo, “[Slower Than the Economy](#).”

17. Walczak, [Modernizing State Sales Taxes](#).

18. Anna L. Johnson and Steven M. Sheffrin, [Rethinking the Sales Tax Food Exclusion with SNAP Benefits](#), Special Report series (State Tax Notes, January 11, 2016), 149–58, <https://doi.org/10.2139/ssrn.2597228>. It is important to note that the uptake rate for those households that are eligible for SNAP is 82 percent nationally, while uptake for WIC is considerably lower, especially for pregnant women or for eligible older children. Karen Cunyningham, [Estimates of State Supplemental Nutrition Assistance Program Participation Rates in 2019](#) (United States Department of Agriculture, February 2023), <https://fns-prod.azureedge.us/sites/default/files/resource-files/snap2019reaching.pdf>. For postpartum women and infants, the uptake rates were 85 percent and 98 percent respectively. In contrast, the rates for pregnant women and children were 52 percent and 45 percent respectively. United States Department of Agriculture, [Estimates of Nonparticipation Rates of Medicaid and SNAP Beneficiaries in the Special Supplemental Nutrition Program for Women, Infants, and Children \(WIC\)](#) (United States Department of Agriculture, 2023), 1–2, <https://fns-prod.azureedge.us/sites/default/files/resource-files/report-congress-medicaid-snap-nonpart-rates-wic-050323.pdf>.

19. Johnson and Sheffrin, [Sales Tax Food Exclusion](#), 157.

20. Mikesell et al., “[Depression-Designed Retail Sales Tax](#).”

21. Yuqing Zheng et al., “[Putting Grocery Food Taxes on the Table: Evidence for Food Security Policy-Makers](#),” *Food Policy* 101 (May 2021): 102098, <https://doi.org/10.1016/j.foodpol.2021.102098>; Truc Linh Nguyen, “[Would You Like Tax Exemptions with That? How Food Exemptions Under State Sales Tax Are](#)

A further concern is the food exemption's potential impact on the stability of sales tax revenue. It has been argued that "when policymakers exempt food, they should expect a more cyclical sales tax. This combination, an irreversible food exemption and a surprising revenue response to the business cycle, is a potential cause for a state sales tax rate increase following a new food exemption."²² Similarly, others have noted that exempting food from the sales tax base increases instability, as food is one of the most stable components of the sales tax base.²³ This is because demand for food is inelastic, and therefore a tax on food does not lead to a large change in consumption. This makes the sales tax less volatile²⁴ and taxing food fairly efficient. However, these estimates are outdated and need to be reanalyzed.

Lastly, cross-border effects remain a concern. One study estimated that imposing a 6 percent tax on food decreased food consumption by about 8 percent in border counties.²⁵ An earlier study estimated that, for border counties, a 1 percent decrease in the sales tax rate increased food sales by 5.9 percent.²⁶ Therefore, if states were to impose a food tax, they would have to carefully consider reduced consumption, the rates of neighboring states, and the impact of cross-border shopping and tax leakage.

Data and Methods

In this study, we analyze the policy decision to exempt food from the state sales tax using data from North Carolina. To do this, we propose a framework of five policy criteria that scholars, policymakers, and practitioners can use to evaluate any proposed exemption to the sales tax base. They are

1. the change in revenue collections (holding other policies, like tax rates, constant);
2. the estimated revenue-neutral rate;
3. the expected impact on revenue stability;
4. the exemption's equity, in terms of how regressive or progressive the burden on household expenditures is expected to be; and
5. the effect on local government revenue.

These criteria create a more holistic understanding of the impact that the inclusion, exclusion, or exemption of goods and services will have on state revenues, local revenues, and household income.

[Not Reaching Lower Income Communities in Food Deserts](https://doi.org/10.2139/ssrn.2979852)," preprint, Social Science Research Network, February 3, 2017, <https://doi.org/10.2139/ssrn.2979852>.

22. Bahl and Hawkins, "Does a Food Exemption Lead to a Higher State Sales Tax Rate?," 448.

23. William F. Fox and Charles Campbell, "[Stability of the State Sales Tax Income Elasticity](#)," *National Tax Journal* 37, no. 2 (1984): 211, <https://doi.org/10.1086/NTJ41791946>.

24. Richard R. Hawkins, "[Price Elasticities in Consumer Sales Tax Revenue](#)," *Public Finance Review* 28, no. 2 (2000): 176, <https://doi.org/10.1177/109114210002800205>; Richard R. Hawkins, "[Popular Substitution Effects: Excess Burden Estimates for General Sales Taxes](#)," *National Tax Journal* 55, no. 4 (2002): 755–70, <https://doi.org/10.17310/ntj.2002.4.06>.

25. Mehmet S. Tosun and Mark L. Skidmore, "[Cross-Border Shopping and the Sales Tax: An Examination of Food Purchases in West Virginia](#)," *The B.E. Journal of Economic Analysis & Policy* 7, no. 1 (2007), <https://doi.org/10.2202/1935-1682.1877>.

26. Michael J. Walsh and Jonathan D. Jones, "[More Evidence on the 'Border Tax' Effect: The Case of West Virginia, 1979–84](#)," *National Tax Journal* 41, no. 2 (1988): 264, <https://doi.org/10.1086/NTJ41788728>.

The analysis uses a county-year panel and a time series of sales tax revenue between 2012 and 2023. Among the provisions that give counties the authority to levy sales taxes, a commonly used one is in Chapter 105, Article 39 of the North Carolina General Statutes, under which every county is allowed a 1 percent sales tax. Data on gross point-of-sale revenue generated from counties' Article 39 sales taxes were collected from the North Carolina Department of Revenue. Article 39 county revenue generated from the sales of unprepared food,²⁷ which the state exempts from its sales tax, is reported separately from the revenue generated from other goods and services that aligns with the state sales tax base. This enables the calculation of each county's tax base for unprepared food to aggregate into a state time series. The data also include total personal income from the Bureau of Economic Analysis, state sales tax revenue collected from the Department of Revenue, and Consumer Price Indexes for food at home, all items except food at home, and all goods from the St. Louis Federal Reserve to deflate revenues to constant 2023 dollars. Lastly, we use 2023 Consumer Expenditure Survey (CES) data from the Bureau of Labor Statistics to examine changes in sales tax burdens across income levels.

The first criterion considers how much sales tax revenue North Carolina forgoes due to its food exemption. All 100 counties levied a 2 percent tax on food in the fiscal years covered by the data, 1 percent of which is on a point-of-sale basis, as in most states. Therefore, we doubled the point-of-sale revenues and summed the amounts to the state level, representing statewide food-sales tax revenue at the current 2 percent rate. Since the tax rate on food remains constant during this period, we cannot estimate a price elasticity to adjust revenue after a price increase. *Price elasticity* refers to how sensitive the demand for a product or service is to changes in its price. By adding a tax on food, the state would be making it more expensive. We assume a price elasticity of demand based on existing research and adjust the price elasticity of counties that border other states to allow for a potential loss in cross-border shopping.²⁸ We consider the state's share of revenue from taxing previously exempt food, which includes adjusting estimated sales tax revenue when including the widened tax base but also the change in nonfood revenue through cross-price and income effects. Since nonexempt items include prepared grocery food and food consumed away from home, it can be assumed that a price increase in exempt food would shift some consumption toward these nonexempt items (i.e., a cross-price effect). The rise in exempt-food prices would reduce consumers' purchasing power, thus reducing the consumption of nonexempt items (i.e., an income effect).

Repealing an exemption may be motivated by the goal of broadening the tax base and lowering the rate rather than increasing revenues. Therefore, to address our second evaluation criterion, we approximate the state sales tax rate that would generate the same revenue if exempt food were included as the current 4.75 percent rate. We once again consider the own-price elasticity of exempt food and nonexempt items; that is, we consider behavioral changes to the lowering of the price for all currently taxable goods that would increase their consumption, and increasing the price of food and thus decreasing expected consumption.

27. It is important to note that these revenues are generated from formulas based in the 1990s.

28. Tatiana Andreyeva et al., "[The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food](#)," *American Journal of Public Health* 100, no. 2 (2010): 216–22, <https://doi.org/10.2105/AJPH.2008.151415>; Tosun and Skidmore, "[Cross-Border Shopping](#)"; Arwiphawee Srithongrung, "[Consumers' Behavioral Response to Sales Taxes on Food in Kansas](#)," *Public Finance and Management* 17, no. 2 (2017): 92–123, <https://www.proquest.com/docview/1931696924>; Walsh and Jones, "[The 'Border Tax' Effect](#)."

Having calculated state revenue in the absence of a food exemption, we proceed to the third evaluation criterion and compare the stability of state sales tax revenue with and without the exemption. We examine stability via two approaches. First, we use the average standard deviation of annual percent changes in state sales tax revenue. Second, we estimate income elasticities in the short and long runs. Income elasticity measures how much the demand for a good or service changes when people's income levels rise or fall—like during a recession or in a growing economy. Simply put, it's the percentage change in the quantity demanded divided by the percentage change in income.

Our fourth evaluation criterion concerns individual consumer equity by examining changes in sales tax burdens by income quintiles using nationally representative data from the 2023 CES. These data include average annual expenditures on numerous goods, including food at home. Sales tax burden equals the amount paid in sales tax, divided by income. We use the revenue-neutral tax rates obtained above to approximate new sales tax burdens and then compare them with current sales tax burdens. Since SNAP purchases are exempt from the sales tax, we incorporate SNAP benefits in the quintile comparisons.

Lastly, the fifth criterion considers the effect of repealing a sales tax exemption on local government sales tax revenue under revenue-increasing and revenue-neutral scenarios. In the case of North Carolina, where counties already tax food at a rate of 2 percent, introducing a state sales tax on food will reduce the revenue that counties generate from their current sales tax on food and currently taxed items.

Our article "[A Framework for Sales Tax Base Expansion: Food Taxation in North Carolina and Applications for Other States](#)," in *Public Budgeting and Finance*, provides more details on our methodology.²⁹

29. Afonso and Combs, "A Framework," 4–7.

Table 2. Effect of Food Exemption on North Carolina Collections of Sales Tax Revenue, in Millions of Dollars

Item	Current point-of-sale revenue	Revenue estimates if exemption repealed	
		Lower-bound conditions	Upper-bound conditions
2012–19			
Nonexempt items	6,973	6,905	7,005
Exempt food	0	827	860
Total	6,973	7,732	7,865
Net gain		759	892
2020–23			
Nonexempt items	9,401	9,316	9,449
Exempt food	0	1,024	1,066
Total	9,401	10,340	10,515
Net gain		939	1,114

Note: Deflated dollars using 2023 Consumer Price Index. Lower (upper) bound conditions include less (more) favorable price and income sensitivities.

Results

Revenue Collection

The results for the effect of North Carolina's food exemption on revenue collection are reported in Table 2. Given the significant change in the sales tax base during the COVID-19 pandemic,³⁰ we present results separately for the pre-COVID (2012–19) and post-COVID (2020–23) periods. If exempt food items were taxed at 4.75 percent alongside currently taxed items, North Carolina would have generated an annual amount of 827–860 million dollars between 2012 and 2019. This amount increases to 1.02–1.07 billion dollars during 2020–23 and revenue from nonexempt items declines. As expected, repealing the exemption would yield a net revenue gain: We estimate a net gain of \$939 million to \$1.114 billion during 2020–23. Compared with current point-of-sale revenue, net revenue gains are relatively consistent across the two periods, representing a 10–13 percent increase.

The Revenue-Neutral Tax Rate

Next, we consider the results for the second evaluation criterion, which concerns the revenue-neutral tax rate if exempt food were included in the sales tax base. Depending on the assumptions made, a tax rate between 4.21 and 4.24 percent would raise as much revenue as the current 4.75 percent sales tax has on average throughout 2012–23. Since North Carolina sales tax

30. See, for example, F. A. Lozano-Rojas and M. L. Lofton, "[A Structural Change in the Power to Tax: The COVID-19 Pandemic's Impact on Sales Tax Collections Across Georgia Counties](https://doi.org/10.1086/MFJ44010003)," *Municipal Finance Journal* 44, no. 1 (2023): 3–43, <https://doi.org/10.1086/MFJ44010003>; Phil Dean et al., "[The COVID-19 State Sales Tax Windfall](https://doi.org/10.1007/s10797-023-09778-w)," *International Tax and Public Finance* 30, no. 5 (2023): 1408–34, <https://doi.org/10.1007/s10797-023-09778-w>.

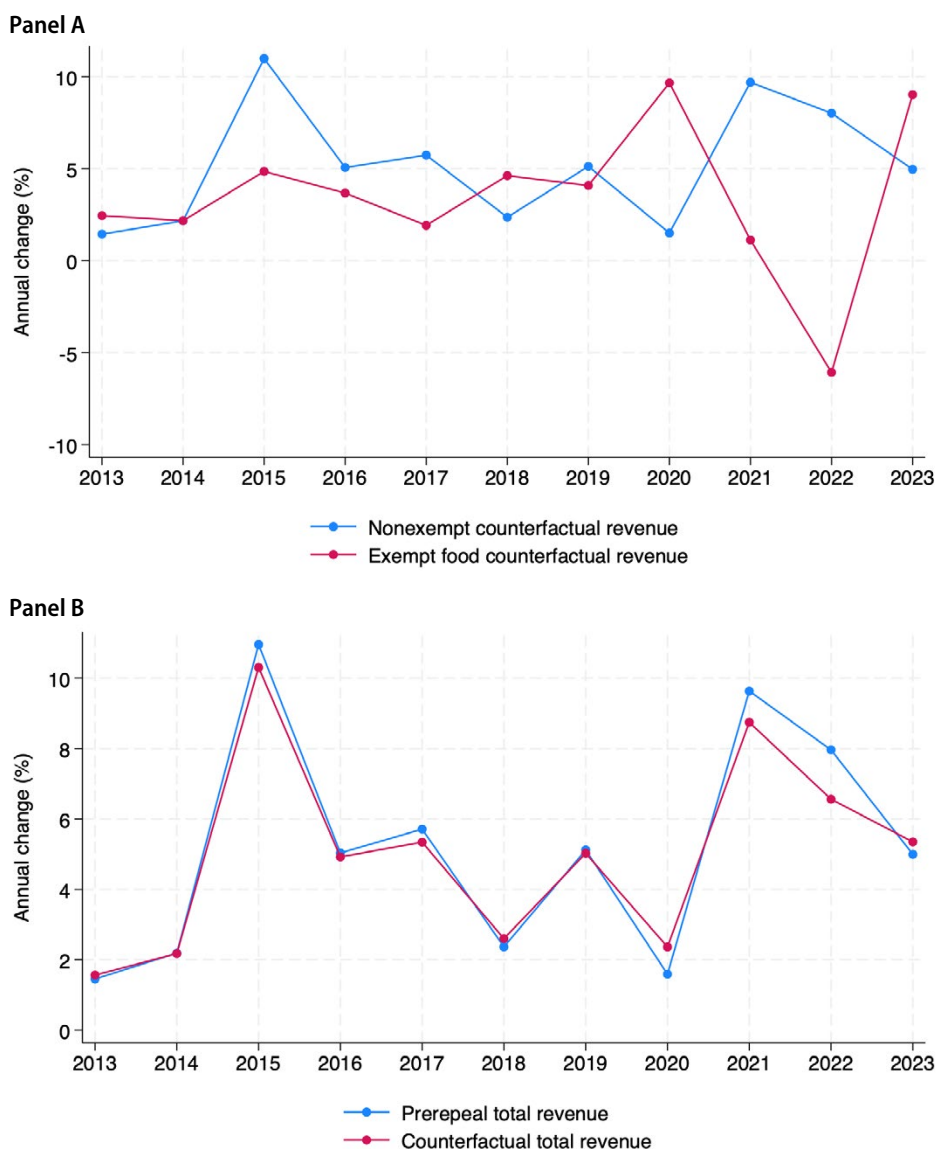


Figure 1. Annual change in state sales tax revenue, with and without repealing the exemption for unprepared food. Prerepeal revenue in Panel B equals the sum of state-collected revenue among counties. Counterfactual revenue in Panel B equals the sum of nonexempt and exempt counterfactual revenues. Nonexempt $SD = 3.3$; exempt $SD = 4.2$; prerepeal $SD = 3.2$; counterfactual $SD = 2.8$. (Adapted from Whitney Afonso and Alex Combs, "A Framework for the Sales Tax Base Expansion: Food Taxation in North Carolina and Applications for Other States," *Public Budgeting and Finance*, ahead of print, February 18, 2026, <https://doi.org/10.1111/pbaf.70017>.)

rates vary in increments of 25 basis points, we use a 4.25 percent tax rate when estimating effects on household equity and intergovernmental revenue.

Revenue Stability

The third criterion is the exemption's effect on revenue stability. Figure 1 shows total revenue with the current food exemption alongside annual differences in revenue that would have

Table 3. Income Elasticity of the Sales Tax Base

Period	Long run (log-log) ^a			Short run (differenced log)		
	Food	Nonexempt ^b	Total ^b	Food	Nonexempt	Total
2012–23	1.0653** (0.0640)	1.5380** (0.1234)	1.4889** (0.1107)	0.7580* (0.3563)	0.1529 (0.3259)	0.2096 (0.2713)
2012–19	1.1516** (0.0916)	1.7270** (0.1246)	1.6643** (0.1177)	0.2013 (0.1869)	0.7457 (0.4303)	0.6852 (0.3898)

^a Long-run elasticity focuses on growth and whether estimates differ from 1.

^b Bold values indicate rejection of the null hypothesis $H_0 = 1$.

* $p < .10$

** $p < .01$

resulted from the exemption being repealed. Panel A compares counterfactual revenue from nonexempt items (i.e., current revenue adjusted by the cross-price and income effects from raising sales tax on exempt food) and exempt food based on the midpoint between the estimates from the previous two criteria. Between 2012 and 2023, exempt food revenue would have been less stable than revenue from nonexempt items. However, the COVID-19 pandemic accounts for much of the volatility in both revenue streams. Excluding 2020–23, the standard deviation in annual percent change for exempt food falls to 1.2, compared with 3.3 for nonexempt-item revenue. Interestingly, nonexempt items and exempt food demonstrated countercyclical growth rates during the pandemic, which would have increased overall stability. This stabilizing effect is shown in Panel B, which compares total revenue with total counterfactual revenue. Since revenue from exempt food would account for only about 10 percent of total revenue, its effect on stability is not dramatic. Still, the standard deviation of percent changes in total revenue with food included is 2.8, compared with 3.2 when food is excluded.

The results of estimating the short- and long-term variability of the sales tax base are reported in Table 3. The first row contains results for 2012–23, and the second row contains results for 2012–19, which may be more generalizable given the extreme variation in sales tax revenue during the pandemic. Consistent with prior research, exempt food revenue shows less potential for long-term growth than current nonexempt revenue. The results suggest that the tax base grows faster than income. The addition of food to nonexempt items slightly reduces long-term growth, but it is not statistically significant.

The point estimates for short-run variability in Table 3 indicate that the food sales tax base was more volatile than nonexempt items between 2012 and 2023. Still, short-run food volatility is only marginally statistically significant. Excluding 2020–23, both food and nonexempt items are statistically insignificant, though the nonexempt-item point estimate is greater in magnitude. Lastly, the results for short-run total revenue are not meaningfully different from current nonexempt-revenue volatility. Therefore, we do not find compelling evidence that adding food to the sales tax base reduces or increases short- or long-run variability.

Equity

Table 4 addresses the criterion of household equity, reporting the impact of a revenue-neutral 4.25 percent tax rate on the tax incidence for average households by income quintile, using

Table 4. Changes in Payments and Relative Burden Under a Common 4.25% Sales Tax by Income Quintile

Tax	Q1	Q2	Q3	Q4	Q5	Q1-SNAP^a
Food tax						
Dollar ^b	154	195	240	288	383	31
Burden ^c	1.05%	0.49%	0.36%	0.28%	0.18%	0.24%
Current tax						
Dollar ^d	-72	-105	-143	-193	-339	-72
Burden ^b	-0.49%	-0.26%	-0.22%	-0.18%	-0.16%	-0.54%
Net						
Dollar	83	90	97	95	45	-41
Burden	0.56%	0.22%	0.15%	0.09%	0.02%	-0.31%

Notes: Authors' calculations use the 2023 Consumer Expenditure Survey Table 1101, published by the Bureau of Labor Statistics, and North Carolina SNAP statistics from the Department of Agriculture. Calculations account for items excluded from sales taxes in North Carolina. SNAP = Supplemental Nutrition Assistance Program.

a Values in the Q1-SNAP column simulate a household receiving the average SNAP benefit per person.

b Difference in sales tax payment between the current 2% county rate and a 6.25% combined state and county rate.

c Difference in tax payment divided by income net of public income assistance.

d Difference between the current 6.75% combined rate and a 6.25% combined rate.

averages from the CES. The increase in food sales taxes exceeds the decrease in currently taxed items for all quintiles, resulting in a net increase in tax burdens. This is partly due to the exclusion of a significant portion of consumers' nonfood expenditures from sales tax (e.g., health care, housing, and retirement contributions). As expected for an ad valorem tax, absolute changes in food taxes increase with income, whereas relative tax burdens are regressive, decreasing with income.

Averages in the CES include responses of zero expenditure or income categories. This can substantially deflate the value of infrequent purchases or income items for respondents, such as SNAP benefits. The Q1-SNAP column on Table 4 simulates tax incidence for a bottom-quintile household receiving the average SNAP benefit in North Carolina and no other public supplemental income. This group pays much less in additional food taxes, resulting in a net decline of \$41 in sales tax, or 0.3 percent of income. We estimate that about 80 percent of those in the bottom quintile of the CES are eligible for SNAP.³¹ Therefore, a revenue-neutral inclusion of food in the sales tax is mainly progressive for the bottom-income quintile. It is also worth noting that almost half of those in the bottom quintile are college students and retirees, where low incomes are expected and do not necessarily indicate economic hardship.³² However, further redistribution would be required to offset the regressivity for higher-income quintiles.

31. The 80 percent eligibility is calculated by fitting a log-normal cumulative-distribution function to the income statistics in the CES, then calculating the percentile at 130 percent of the federal poverty line.

32. Veri Crain and Taylor J. Wilson, "[Use with Caution: Interpreting Consumer Expenditure Income Group Data](https://www.bls.gov/opub/btn/volume-6/use-with-caution-interpreting-consumer-expenditure-income-group-data.htm)," *Beyond the Numbers*, May 2017, <https://www.bls.gov/opub/btn/volume-6/use-with-caution-interpreting-consumer-expenditure-income-group-data.htm>.

Effects on Revenue

Lastly, using the midpoint between upper- and lower-bound revenue conditions, we find that sales tax revenue would decrease an average of 5 percent in border counties and 1 percent in other counties if North Carolina taxed food at its current rate of 4.75 percent. Revenue losses would be slightly smaller if the state implemented a revenue-neutral rate of 4.25 percent. Therefore, the impact of reforming the food exemption depends heavily on the extent to which counties experience cross-border shopping. The impact is minimal in counties assumed to experience no cross-border shopping. In counties bordering a state with lower tax rates, the predicted revenue loss is substantial, and the state government may need to consider mitigating these losses through intergovernmental transfers.

Alternatives

This section discusses two alternatives to including food sales identified by scholars and policy analysts. One focuses on addressing equity concerns, while the other addresses the tax base. We make the presumption that the primary reason to exempt food from the sales tax base is to make the sales tax less regressive. However, there is evidence that taxing food may not be as regressive as earlier estimates suggest, given (1) participation in programs like SNAP and WIC by low-income households, (2) the inclusion of prepared food in the sales tax base, and (3) the higher rate on all other taxable items.³³ Despite this earlier work, we find that the lower rate on other goods does not offset the burden of including food. However, households in the lowest income quintile will, on average, have reduced burdens with SNAP participation.

The first alternative is to tax food but also provide a grocery tax credit. States like Idaho and Hawaii have these refundable credits in place, implemented through the state income tax. A concern with these sorts of credits, much like the earned income tax credit, is that they require low-income households to claim the credit on their tax returns (and then file the returns). However, sales tax rebates that are targeted at low-income households can offset the cost of taxed food and presumably lead to more equitable outcomes since the inclusion of food in the tax base may lead to lower sales tax rates on other goods and services.³⁴ Ultimately, the inclusion of food in the tax base and a refundable credit satisfies many of the concerns that have been identified about the treatment of food under the sales tax.³⁵ It is important to note that if states opted to include food in the sales tax base and offset the burden for low-income households with refundable credits, that inclusion would reduce state revenue collections. For example, Hawaii's tax credit for low-income households cost approximately \$25 million in 2022, when the tax credit was up to \$110 per low-income resident.³⁶ While that is a substantial impact on revenues, it

33. See, for example, Mikesell et al., "[Depression-Designed Retail Sales Tax](#)"; Walczak, [Modernizing State Sales Taxes](#); Johnson and Sheffrin, [Sales Tax Food Exclusion](#).

34. Mikesell et al., "[Depression-Designed Retail Sales Tax](#)."

35. Johnson and Sheffrin, [Sales Tax Food Exclusion](#). Similarly, there is evidence that a combination of taxing food and subsidizing healthier food choices is effective at encouraging healthier choices and reducing the regressivity of food taxes. (For an overview, see Elisa Pineda et al., "[Review: Effectiveness and Policy Implications of Health Taxes on Foods High in Fat, Salt, and Sugar](#)," *Food Policy* 123 (February 2024): 102599, <https://doi.org/10.1016/j.foodpol.2024.102599>).

36. Devin Thomas and Daniela Spoto, "[Can Hawai'i Afford to Cut the Grocery Tax?](#)," *Hawai'i Appleseed*, September 17, 2025, <https://hiappleseed.org/blog/can-hawaii-afford-to-cut-the-grocery-tax>. The credit has since been doubled (*ibid.*).

represents only about 10 percent of the revenue generated from the taxation of food. In FY 2023, the sales tax on food generated \$246.6 million in revenue for the state.³⁷

The second alternative, for states concerned with the coverage of their sales tax, is to tax more than just food. It is time for states to consider taxing more services. An early study on the regressivity of sales taxes on services found that they were less regressive than other sales taxes.³⁸ Buying clippers for trimming hair is taxed, but typically, a visit to the barber is not. Increasingly, consumers are buying services rather than tangible goods. There is also the possibility of taxing digital products in today's changing economy, with sales taxes being levied on e-books, streaming services, and cloud storage—however, input from businesses should be excluded from any move in this direction.³⁹ As described previously, the largest gap in coverage of the sales tax is from services. States should carefully consider what is included and update their policies.

Conclusion

Sales taxes are North Carolina's second largest source of own-source revenue. North Carolina has considered its sales tax base and the structure of local sales taxes in recent years,⁴⁰ but there may be more to reconsider. For states updating their sales taxes, most changes involve further reductions in the tax base or an increase in rates. As the coverage of the sales tax declines, the amount and stability of revenue may also decline. This leads to less reliable forecasts and higher sales tax rates. For states like North Carolina, which have been consistently reducing their income taxes, the question of what would happen if the state included food in its sales tax base once more is particularly relevant. In fact, the state is forecasting that its revenues will decline for the first time in decades in FY 2027 due to further reductions of taxes on personal and corporate income.⁴¹

While there is no "right choice," our analysis is intended to provide insights into the costs and benefits of including food in North Carolina's sales tax. Including food could raise the revenue necessary to maintain balanced-budget requirements given the federal shifting of a greater share of administrative costs of SNAP to state and local governments. If revenue neutrality is the goal, the reduction in the overall tax rate nearly offsets the additional tax burden from food for lower-income consumers and is progressive for SNAP recipients. Because of these benefits, along with less revenue volatility and limited fiscal harm to county governments, it seems that states may want to consider putting food back on the sales tax table.

37. Thomas and Spoto, "[Hawai'i](#)."

38. John J. Siegfried and Paul A. Smith, "[The Distributional Effects of a Sales Tax on Services](#)," *National Tax Journal* 44, no. 1 (1991): 41–53, <https://doi.org/10.1086/NTJ41788876>.

39. Walczak, *Modernizing State Sales Taxes*.

40. Kara Millonzi, "[Local Sales and Use Tax Changes and New State Revenue Sharing Requirement](#)," *Coates' Canons: NC Local Government Law*, October 26, 2015, <https://canons.sog.unc.edu/2015/10/local-sales-and-use-tax-changes/>; Whitney Afonso et al., "[Plugging the Tax Leak: An Analysis of North Carolina's Local Sales Tax Redistribution Policy](#)," *State and Local Government Review* 56, no. 1 (2024): 76–90, <https://doi.org/10.1177/0160323X231215057>.

41. *February 2025 Consensus General Fund Revenue Forecast* (North Carolina Office of State Budget and Management, February 14, 2025), <https://www.osbm.nc.gov/consensus-revenue-forecast-fy-2025-27/open>.