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Tax Incentive Evaluation

Georgia Computer Equipment Tax Exemption

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December 2022

Tax Incentive Evaluation: Georgia Computer Equipment Exemption

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For:
Georgia Department of Audits and Accounts

Date of Delivery:
December 2022

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1. Executive Summary

This study examines Georgia's Computer Equipment Sales Tax Exemption for High Technology Companies on annual purchases over $15 million, O.C.G.A. § 48-8-3(68), conducted in accordance with the Tax Credit Return on Investment Act of 2021. This sales tax exemption, first enacted in 2001, provides an exemption from state and local sales tax on purchases of computer equipment totaling $15 million or more by a single purchaser during a given year. The exemption was amended in 2022, when the first $15 million in qualifying computer equipment purchases was scheduled to be taxed at 10% of the prevailing state tax rate of 4% beginning in 2024. The exemption is currently scheduled to sunset in 2028.

The computer sales tax exemption, O.C.G.A. § 48-8-3(68), may be viewed as a companion exemption to § 48-8-3(68.1), the Georgia High Tech Data Center Sales Tax Exemption. The former is intended to encourage capital investment in high-technology companies in Georgia, while the latter is intended to encourage construction of new data centers by offering a sales tax exemption on initial server purchases and on certain construction costs. An extensive review of sales tax exemptions for large-scale computer equipment purchases in other states found that most states tie exemptions to data center sales tax exemptions such as Georgia's O.C.G.A. §48-8-3(68.1) instead of instituting them as a standalone exemption.

Tax credits and tax exemptions are typically enacted as a means of encouraging certain types of taxpayer behavior by reducing the cost of a specifically targeted activity by the amount of the credit or exemption. Although the intent of the computer sales tax exemption is not stated specifically in the enabling legislation, the analysis that follows assumes that it is intended to attract and retain businesses that are intensive users of computing technology, thereby creating jobs and ultimately stimulating additional economic activity in the state. The computer sales tax exemption is specifically targeted toward companies in the manufacturing, information technology, finance, insurance, and scientific and technical services industries. Based on data obtained from the Georgia Department of Revenue, between 21 and 24 companies have typically applied for the exemption each year since 2018. The average annual amount of expenditures claimed on qualifying computer equipment purchases was about $1.4 billion during these years, resulting in estimated annual forgone state tax revenue of about $55.6 million.

NET CHANGE IN STATE REVENUE AND ECONOMIC ACTIVITY

The economic impact calculations presented in this report are based on only a short-term projection of computer equipment purchases and their economic impacts, along with accompanying forgone sales tax revenues. The "but for" calculation assumes that the majority

(100% – 7.35% = 92.65%) of these purchases would have been made without the credit. This analysis assumes that companies utilizing the credit will not change their purchasing behavior by more than 7.35% due to a 7.35% tax exemption. This assumption is likely a safe bet in the short run, because companies purchasing over $15 million of computer equipment per year are not easily or inexpensively relocated to a lower-cost area, such as a state that offers more generous incentives.

The net change in state revenues is summarized in Table A below. Total Spent (Row 1) is the total amount of computer equipment spending that qualified for the exemption, and Forgone State Sales Tax Revenue (Row 2) is the amount of sales tax exempted. The "But For" reduction (Row 3) is the amount by which the total economic impact of equipment expenditures is reduced to account for the portion of those expenditures that would have occurred in the absence of the credit. Incentive Value-Added (Row 4) is the amount of economic activity generated by equipment expenditures attributable to the presence of the exemption. Note that the Incentive Return on Investment (ROI, Row 5) for the exemption is negative; in other words, the analysis estimates that each dollar of forgone tax revenue or "tax expenditure" generates less than one dollar in additional economic activity. This result is due to two reasons. First, because essentially all of the qualifying computer equipment purchases are computer servers manufactured outside of Georgia, they have a limited impact on the state economy in terms of creating jobs and additional value-added economic activity. Second, only a small amount of total purchases qualifying for the exemption are estimated to have been a direct result of the exemption; the majority of those purchases would have been made with or without the tax exemption. Alternative-Use Value-Added and Alternative-Use ROI (Rows 6 & 7) represent the economic impact of a hypothetical amount of money equal to the exemption being collected as tax revenue and spent on state services.

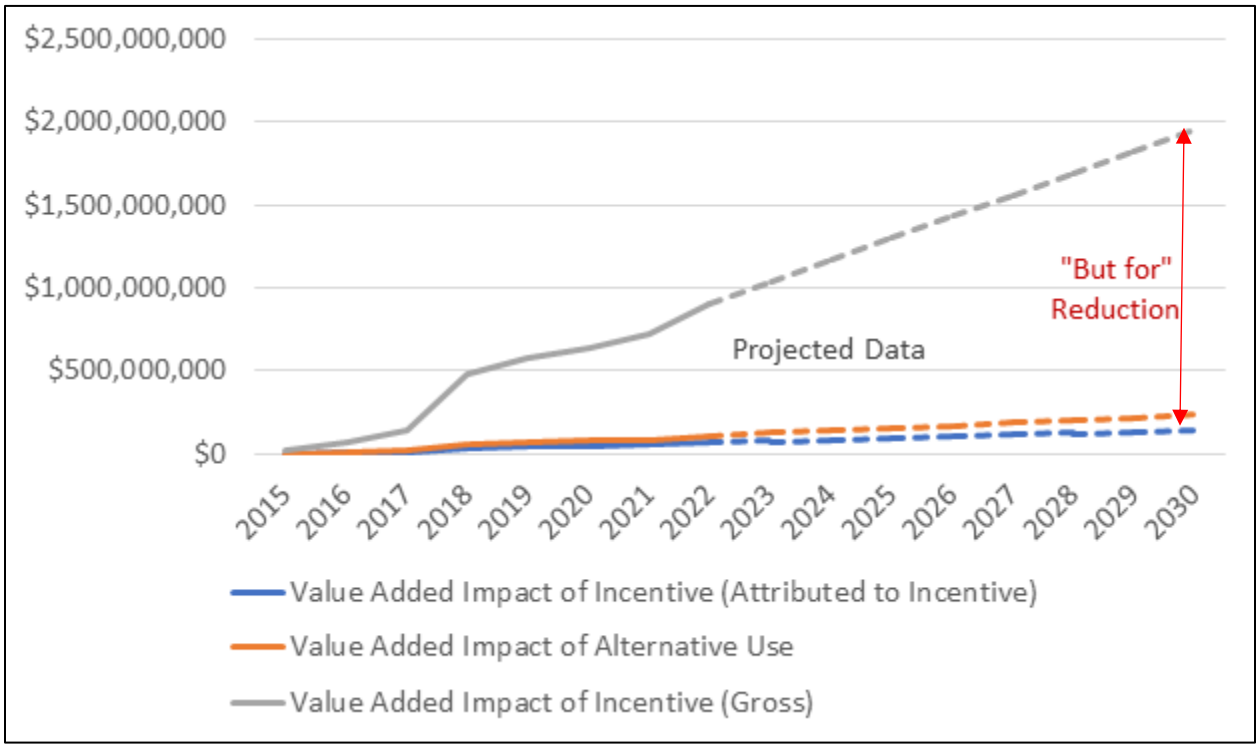
Table A. Net Change in State Revenue and Economic Impact of Georgia's Computer Equipment Tax Exemption, 2018–2027

Real Data	2018	2019	2020	2021
Total Spent	$1,103,056,535	$1,336,513,740	$1,464,091,081	$1,661,231,836
Forgone State Sales Tax Revenue	$44,122,261	$53,460,550	$58,563,643	$66,449,273
"But for" Reduction	$81,074,655	$98,233,760	$107,610,694	$122,100,540
Incentive Value-Added	$35,452,981	$42,119,679	$47,324,236	$53,696,504
Incentive ROI	–0.20	–0.21	–0.19	–0.19
Alternative-Use Value-Added	$58,889,508	$71,353,222	$78,164,266	$88,689,132
Alt. Use ROI	0.33	0.33	0.33	0.33

Projected Data	2022	2023	2024**	2025	2026	2027
Total Spent	$2,079,126,759	$2,380,830,238	$2,682,533,717	$2,984,237,196	$3,285,940,675	$3,587,644,153
Forgone State Sales Tax Revenue	$83,165,070	$95,233,210	$105,741,349	$117,689,488	$129,637,627	$141,585,766
"But for" Reduction	$152,815,817	$174,991,023	$197,166,228	$219,341,434	$241,516,640	$263,691,845
Incentive Value-Added	$67,204,249	$76,956,302	$86,708,356	$96,460,410	$106,212,467	$115,964,517
Incentive ROI	–0.19	–0.19	–0.18	–0.18	–0.18	–0.18
Alternative-Use Value-Added	$110,999,527	$127,106,744	$141,131,844	$157,078,897	$173,025,950	$188,973,003
Alt. Use ROI	0.33	0.33	0.33	0.33	0.33	0.33

** 10% of the current state sales tax rate imposed on the first $15 million in computer equipment purchases goes into effect in 2024.

The following chart depicts the estimated economic impact of total computer equipment purchases qualifying for the sales tax exemption, the amount by which this impact is reduced to account for those purchases that would have occurred even without the exemption, and the impact if that same amount of money had been collected as tax revenue and spent in the same manner as all other state tax collections.



NET CHANGE IN PUBLIC BENEFIT

Tax incentives have intangible public benefits that cannot be captured by traditional economic impact estimates. These intangible benefits may be stated or implied as the intent—or part of the intent—of a credit, or they may simply accrue as an externality, or side effect, of the credit. While the preceding estimates are based solely on a quantitative analysis of tax expenditures and their resulting economic impacts, note that a number of intangible benefits of Georgia's computer equipment tax exemption, though immeasurable, likely exist.

Tax exemptions are one of many factors that create a positive business climate. Even the most complex models cannot include or control for every factor relevant to business decision-making or economic growth (Buss 2001). Other factors include corporate tax rates, commercial real estate prices, utility rates, the risk of natural disasters, the talent pool, and proximity to transportation hubs such as airports. While tax incentives may not be the primary factor in location selection, they are certainly one of a group of factors impacting that decision.

Consequently, lack of incentives or a repeal of existing incentives may signal a negative business climate or create an atmosphere of uncertainty for firms planning to relocate or expand. Also note that the concentration of industry may serve to elevate the reputation of a state as good place to do business, whereas outmigration of industry leaders may have the opposite effect.

In the long run, companies factor tax incentives, along with other information, into their decision to remain in Georgia or relocate to another state. In other words, data centers that are not mobile in the short run may become mobile in the long run as relative costs of doing business change. Computer sales tax exemptions represent a cost savings that could tilt the relative cost of doing business in favor of areas of the country actively competing for these businesses. While analyzing Georgia's overall competitiveness in attracting high-technology companies versus other states is well beyond the scope of this analysis, some measure of Georgia's attractiveness to high-tech companies deserves consideration prior to modifying the current computer equipment exemption.

2. Georgia's Computer Equipment Tax Exemption: Background

This study is a review of the Georgia Computer Equipment for High Technology Company Sales Tax Exemption for annual purchases over $15 million (O.C.G.A. §48-8-3(68)) conducted in accordance with the Tax Credit Return on Investment Act of 2021, also known as Senate Bill 6 (SB6). SB6, passed during the 2022 legislative session, requires periodic evaluation of Georgia tax credits and exemptions on a rolling five-year basis. SB6 tax exemption studies are required to include a brief history of the exemption, a review of existing literature and other states offering similar exemptions, an estimate of forgone tax revenue, and any additional costs or revenues incurred by the state in administering the exemption. Studies are required to include an estimate of the economic impact of the exemption on the state economy and an estimate of the overall return on investment (ROI) of the credit or exemption. Most importantly, evaluations must address the question of whether the taxpayer's spending and the accompanying economic impact would have occurred in the absence of the exemption, a topic commonly referred to as the "but for" question. This study is one of three produced under contract with the Georgia Department of Audits and Accounts by the Carl Vinson Institute of Government at the University of Georgia.

HISTORY

Georgia's sales tax exemption for purchases of computer equipment over $15 million was enacted in 2001. It provides an exemption from state and local sales tax on purchases of computer equipment totaling $15 million or more by a single purchaser during a given year. The exemption was amended in 2022, when the first $15 million in qualifying computer equipment purchases was scheduled to be taxed at 10% of the prevailing state tax rate of 4% beginning in 2024. The exemption is currently scheduled to sunset in 2028.

PURPOSE

Tax credits and tax exemptions are typically designed to encourage certain types of taxpayer behavior by reducing the cost of a specifically targeted activity by the amount of the credit or exemption. Although the intent of the computer sales tax exemption is not stated specifically in the enabling legislation, the analysis that follows assumes that it is intended to attract and retain businesses that are intensive users of computing technology, thereby creating jobs and ultimately stimulating additional economic activity in the state. Thus, the underlying assumption is that lowering the cost of an economic activity, such as spending on computers and computing equipment, encourages greater participation in that activity. State governments generally enact targeted tax credits and exemptions to either attract new businesses to the state

or to encourage the expansion of existing businesses, with the goal of growing employment and, subsequently, tax revenues.

The computer sales tax exemption, 48-8-3(68), may be viewed as a companion exemption to 48-8-3(68.1), the Georgia High Tech Data Center Sales Tax Exemption. The former is intended to encourage capital investment in high-technology companies in Georgia, while the latter is intended to encourage the construction of new data centers by offering a sales tax exemption on initial server purchases and certain construction costs. Servers and racks are often a larger expense than the construction of data center facilities themselves and are typically replaced or "refreshed" on a three- to five-year basis as technology and processing speeds increase. These replacement costs represent a significant and ongoing expense as data centers age. The computer equipment sales tax exemption has the potential to save a hypothetical, large-scale data center with an annual server-refresh cost of $200 million as much as $8 million annually in state sales tax.

Tax incentives are evaluated based on their effectiveness in accomplishing their stated or implied objectives. Consequently, numerous methods exist by which they may be evaluated. Objectives may range from simply raising tax revenues, to growing jobs, to encouraging expansion of specifically targeted industries. Objectives may also be of a broader nature, such as elevating the business profile of a particular city or state in order to encourage additional businesses to locate there.

While the computer equipment sales tax exemption may indeed contribute to achieving broader objectives, it is assumed for the purposes of this study that its primary intent is to encourage the growth and retention of high-tech companies and to increase the number of high-paying jobs in the state. To that end, the tax exemption may be deemed successful if it generates a positive return on investment (ROI). A positive ROI occurs when the cost of the tax incentive—as measured by forgone tax revenue plus any costs incurred in administering the incentive—is less than the economic benefit that accrues to the state as a result of the incentive.

IMPLEMENTATION

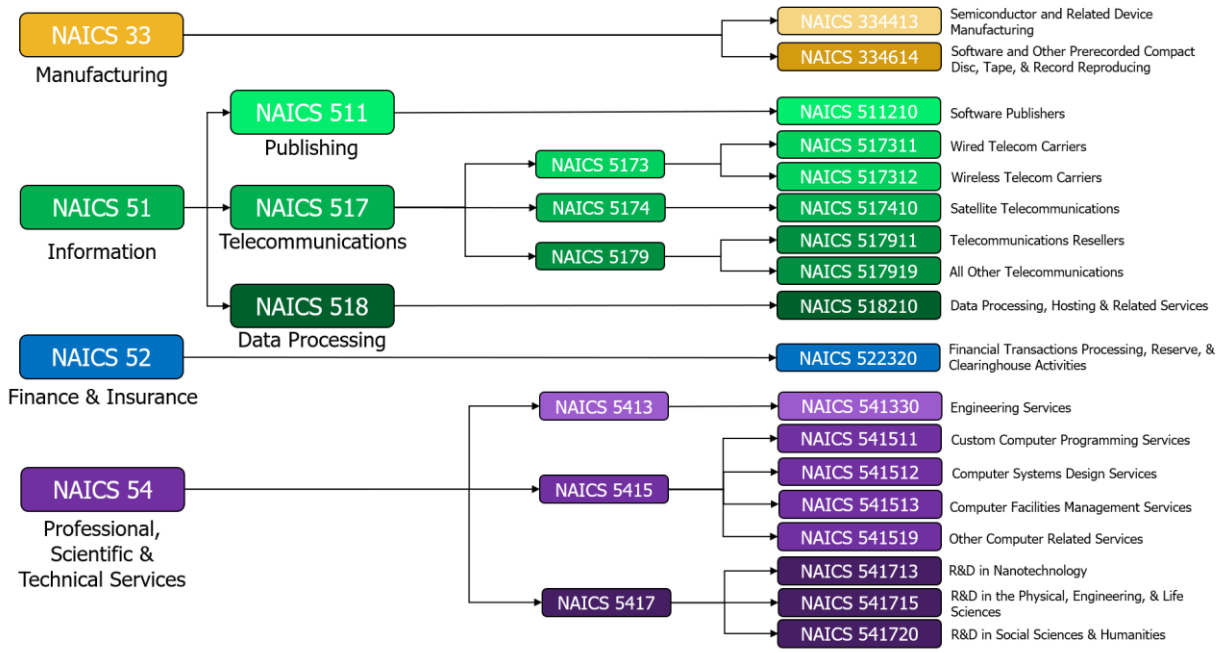
Under current law, computer purchases made by a high-technology company and totaling $15 million or more in a single year are exempt from sales and use taxes. Figure 1 shows the industries eligible for the exemption based on 2017 NAICS codes.[1] To claim the exemption, the taxpayer must apply for and receive an exemption certificate from the Georgia Department of Revenue. Applications are required to include estimates of planned spending on computer equipment purchases over the calendar year for which the application applies. Conditional

[1]The North America Industry Classification System (NAICS) is the standard used by federal agencies to classify businesses based on type of economic activity. NAICS codes range from two to six digits, with more digits indicating a more detailed industry classification.

upon approval, the exemption certificate is valid for purchases made during that calendar year only.

Beginning on January 1, 2024, amendments to the exemption will require that an amount equal to one-10th of the state sales tax rate (0.4%) be collected on the first $15 million of qualifying purchases, with only amounts over the $15 million threshold being fully exempted. Also beginning on January 1, 2024, expenditures eligible for the exemption and counted toward the minimum expenditure requirement are restricted to exclude computer software and equipment issued to employees, including tablets, smart phones, personal or laptop computers, and other similar devices. The exemption is currently set to expire on December 31, 2028.

Figure 1. NAICS Codes That Qualify for Georgia's Computer Equipment Tax Exemption



3. Georgia's Computer Equipment Tax Exemption: Utilization by the Numbers

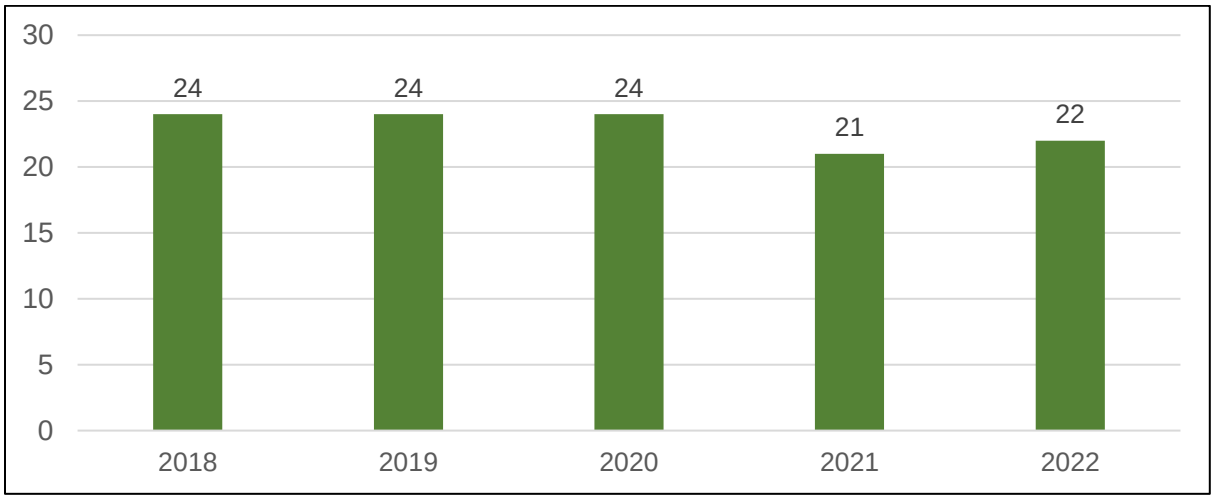
Data were obtained from the Georgia Department of Revenue on the amount of computer equipment purchases claimed under the exemption between 2015 and 2022. Prior to 2018, fewer than 10 taxpayers utilized the exemption each year, rendering the data confidential. User numbers were too small to display the data by industry or geography.

Note that in some cases, companies applying for the credit only reported the intention to purchase a minimum of $15 million in qualifying equipment. In these cases, the $15 million figure was used in the analysis, so the amount of purchases claimed by those taxpayers likely represents a minimum amount of equipment purchases. This section shows the qualifying number of applicants, amount of claimed computer equipment purchases, and estimates of forgone state and local tax revenues.

NUMBER OF TAXPAYERS IMPACTED

Although Georgia's computer equipment incentive is utilized by more taxpayers than the data center incentive, a relatively small number of companies benefit from the sales tax exemption each year. Few companies spend enough on computer equipment each year to meet the minimum threshold of $15 million. Figure 2 shows that the number of taxpayers claiming the exemption stayed consistent in 2018–2020, dropping slightly in 2021–2022, likely due to delayed filing.

Figure 2. Number of Taxpayers Utilizing Georgia's Computer Equipment Tax Exemption by Year, 2018–2022

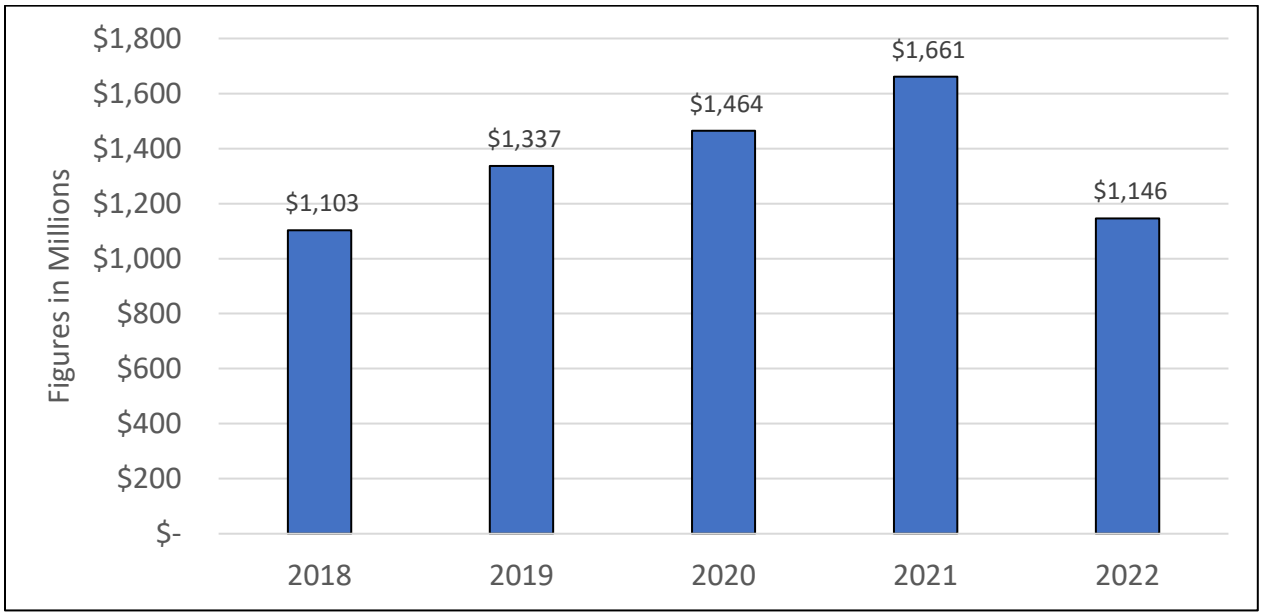


Source: Georgia Department of Revenue 2022

COMPUTER EQUIPMENT PURCHASES

Utilization of Georgia's computer equipment sales tax exemption ranged from a low of $1.1 billion in 2018 to a high of $1.7 billion in 2021 (Figure 3). Utilization of this tax incentive increased sharply in 2018. From 2017 to 2018, tax-exempt computer equipment purchases jumped by over 200%. Lower utilization in 2022 than previous years is most likely a result of incomplete data. Companies can still apply for tax exemptions on computer equipment sales retroactively for 3 years.

Figure 3. Qualifying Amount of Computer Equipment Purchases by Year, 2018–2022



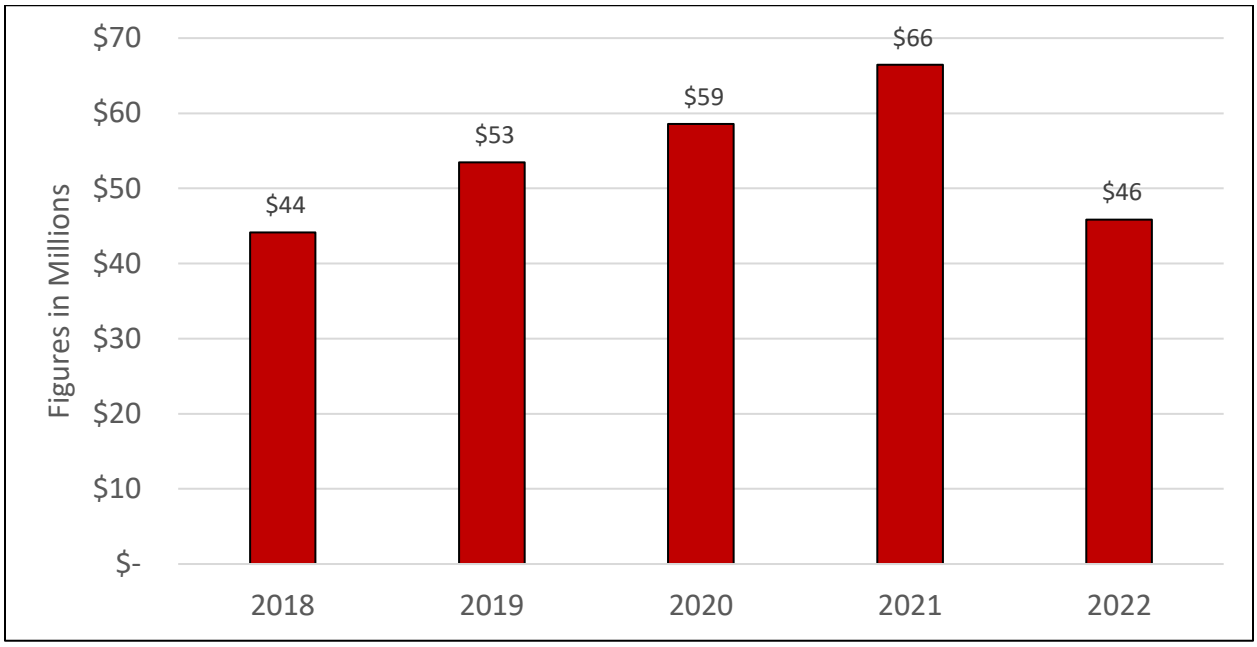
Source: Georgia Department of Revenue 2022

The information sector made up the bulk of computer equipment purchases exempted from sales tax in Georgia each year. The professional, scientific, and technical services sector had the second-highest utilization of the exemption. Of the eligible sectors that took advantage of the tax exemption, finance and insurance purchased the least exempted computer equipment. Although two specific industries in the manufacturing sector are eligible, no companies in this sector claimed the exemption from 2018 to 2022.

AMOUNT OF TAX EXPENDITURE

Assuming a state sales tax rate of 4%, the Institute research team calculated the forgone tax revenue from the qualifying amount of computer equipment purchases provided by the Georgia Department of Revenue. Tax exemption utilization was highest in 2021, at approximately $66.4 million (Figure 4). Again, 2022 data was likely incomplete since companies can retroactively file for the computer sales tax exemption for 3 years.

Figure 4. Amount of Forgone State Sales Tax Revenue Due to Georgia's Computer Equipment Tax Exemption by Year, 2018–2022



Source: Georgia Department of Revenue 2022

4. Computer Equipment Tax Exemptions in Other States

Georgia is unique in that it offers a tax exemption on design and construction of data centers nested within a tax exemption on computer equipment. Georgia's computer equipment incentive is aimed at a relatively broad swath of high-technology industries. Few states offer a tax exemption on computer equipment unconnected to a data center. The Institute of Government research team reviewed governing legislation for three other states that offer this type of exemption. One key aspect of Georgia's computer equipment incentive is the inclusion of a sunset date; none of the other states reviewed specify a date at which their incentive ends.

REVIEWS OF STATE PROGRAMS

Kentucky

Communications and Computer Systems Tax Refund

Kentucky offers a sales tax refund for computer system equipment purchased by companies in the following sectors: NAICS 511210 (software publishers), 518210 (data processing, hosting, and related services), 519130 (internet publishing, broadcasting, and web search portal business), and 541511 (custom computer programming services). The state requires a $100 million minimum investment, and no benefit duration is specified.

Kentucky's computer equipment tax incentive covers a relatively narrow scope of industries, based on NAICS codes. While Kentucky grants a tax refund to companies falling within one of four NAICS categories, Georgia's incentive includes a much broader swath of high-tech industries (18 NAICS categories). Kentucky grants its tax refund to a small subset of industries within the information sector (NAICS 51), whereas Georgia allows companies from three additional sectors (manufacturing, finance & insurance, and professional, scientific & technical services) to qualify and claim sales tax exemptions on computer equipment purchases.

Kentucky also requires a significantly higher investment threshold of $100 million than Georgia's relatively low investment threshold of $15 million. One aspect of Georgia's computer equipment tax exemption that is more conservative than Kentucky's program is the inclusion of a sunset date. Georgia's tax incentive is scheduled to be sunset in 2028, whereas Kentucky's incentive has no sunset date.

North Dakota

Computer and Telecommunications Equipment Sales Tax Exemption

North Dakota offers sales tax exemption on computer equipment for companies meeting the following criteria: (1) They must be certified as a primary sector business by the North Dakota Department of Commerce; (2) they must be a new primary sector business or an existing

business creating a physical or economic expansion; and (3) the equipment must be integral to the new business or the expansion. Replacement items, including software contract renewals, do not qualify for exemption. No benefit duration is specified.

North Dakota does not specify which NAICS sectors qualify for its computer equipment tax incentive, though companies must apply and be certified by the state Department of Commerce as a "primary sector business." In this aspect, Georgia's tax incentive appears to be more conservative, as it is limited by the legislation to a certain set of NAICS sectors. However, North Dakota requires that companies pursuing its incentive are new or expanding, either physically or economically. Georgia has no such requirement. Georgia's incentive also appears to be aimed at exempting data center equipment refreshes from sales tax, whereas North Dakota's incentive expressly forbids replacement items from the tax exemption. Like Kentucky, North Dakota lacks a sunset date at which benefits from the incentive end.

Oklahoma

Computer Services/Data Processing/Telecommunications Sales Tax Exemption

The Oklahoma tax exemption offers a refund of state and local sales taxes on the purchase of computers, data-processing equipment, related peripherals, telegraph or telecommunications services, and equipment. State law specifies that the recipient must be a new or expanding business with a minimum total cost of construction exceeding $5 million. No benefit duration is specified.

Like North Dakota, Oklahoma does not specify a set of industries by NAICS sector that are eligible to claim the computer equipment exemption. Again, Georgia's incentive appears to be more conservative than Oklahoma's in this aspect of the legislation. However, similar to North Dakota, Oklahoma requires that companies must be "new or expanding" and includes a minimum investment threshold of $5 million on construction. Oklahoma lacks a sunset date at which the benefits from the incentive end.

5. Literature Review

The literature surrounding tax exemptions on computer equipment is sparse given that only four states, including Georgia, offer this type of incentive. Instead, the Institute research team explored the broader literature surrounding the effect of sales tax exemptions on economic activity. The literature suggests that it is difficult to measure and evaluate the economic effects of tax incentives, but state and local governments should strive to do so as often as they can, preferably before incentives are signed into law. The broad conclusion across studies spanning the past several decades is that tax incentives are not the primary factor driving decisions among private firms. Tax incentives cost state and local governments a lot of revenue, but their effect on capital investment, employment, and firm relocation or expansion is likely insignificant at best.

A key 2001 study synthesizes the literature on the relationship among taxes, economic growth, and other factors (Buss 2001). This study particularly focuses on the use of tax incentives to influence the location of businesses. The author finds that, although tax policy evaluations have become increasingly sophisticated, they often yield conflicting results regarding whether and to what extent tax incentives influence location decisions of firms. Buss provides the following advice: First, cost-benefit evaluations should be required prior to implementing new or revised tax incentive programs. Policymakers should be savvy about the costs and benefits associated with incentives and should only implement policies for which the proposed benefits clearly outweigh the costs. These costs and benefits should not only incorporate fiscal effects, but social ones as well. Second, periodic evaluations of all tax incentive programs should be required; these should compare economic factors before and after incentives were implemented. Controls should be employed to measure change with and without the incentive. Financing provisions should also be disclosed and transparent, rendering all aspects of public subsidies aimed at increasing private investments publicly available. Public participation and comments on tax incentive use should also be utilized to foster accountability with the tax base.

Buss (2001) suggests that all economic development legislation should provide sunset provisions, which terminate programs unless reauthorized by the legislature. This would allow for the elimination of poorly-performing programs. Legally-binding performance contracts for firms in exchange for the incentives would also penalize failure to meet intended goals. Additionally, legislators should strive to implement fair incentives that do not reduce competition or otherwise devastate one local economy at the expense of another. Finally, Buss endorses concentrating on a diverse set of industries, rather than exclusively on manufacturing. Communities often make large fiscal sacrifices in their pursuit of elusive manufacturing firms.

Another study by Peters and Fisher (2004) posits that economic development policy has been an integral part of state and local planning for over 30 years, yet the integration of tax incentives into wider planning functions is still limited. Nonetheless, spending on tax incentives for economic development projects has continued to expand. The authors explore three primary topics: (1) whether business incentives cause state or local economies to grow more rapidly than they would have otherwise; (2) if so, whether the growth is targeted to provide net gains to poorer communities or whether it operate off of a zero-sum game; and (3) how these incentives perform compared to alternative policies.

Peters and Fisher (2004) find that only one in 10 new jobs created in the average community is attributable to an incentive, even if the incentive is explicitly aimed at increasing employment. According to the authors, this result indicates that incentives "work about 10% of the time," meaning that, on average, 90% of economic activity would have occurred but for a given incentive. The authors also suggest that while it is difficult to conclusively determine whether incentives induce new investment or jobs based on often limited or incomplete data, the literature suggests that economic development incentives have little to no impact on firm location, employment, and capital investment.

Peters and Fisher (2004) suggest two primary reasons for why tax incentives are often ineffective. First, tax cuts do not have much leverage to reduce costs for private firms, and states often sacrifice tax revenue to firms that would have located within the state anyway. Second, firms come and go. As certain firms initially drawn by incentives close or leave the area, new firms that seek incentives keep arriving. This turnover may create an incentive treadmill for legislators and function as a "race to the bottom" as they attempt to steal employment and capital investment from neighboring states. One positive finding is that incentives are more likely to be revenue positive at the local level relative to the state level. However, local incentives largely shift investment between localities within a state, thereby creating no novel fiscal benefits; the investment is merely shuffled around. This phenomenon tracks at the state level as well, as a 2009 study found that, while generous state-level tax credits do increase long-term R&D spending in that state, benefits to the US economy as a whole are offset by a corresponding drop in research expenditures from other states. Thus, the aggregate effect of state credits on national R&D activity is likely close to zero (Wilson 2009).

Peters and Fisher (2004) indicate the need for a radical shift in tax incentive policy. The belief that incentives and subsidies can significantly influence the behavior of private firms is pervasive, despite a lack of evidence in the literature. There is certainly still a role for specific programs aimed at improving worker employability and skills matching with local industries. However, continuing on the current path of large, unproven tax incentives may produce an "unending merry-go-round of tax cuts and subsidies" that have the net effect of starving state governments of resources needed to finance more important and effective services.

Another study uses an instrumental variable model to investigate the relationship between the state sales and use tax (SUT) burden and manufacturing firms' employment and capital expenditures from 1983 to 2006 (Hageman et al. 2015). Results indicate that a lower SUT burden — which is calculated as tax liability minus SUT exemptions, multiplied by SUT rate — is positively correlated with increases in capital expenditures and employment, even after controlling for corporate income tax variables and other economic factors. However, the economic impact of this relationship is relatively small, as an effective 1% decrease (e.g., from 5% to 4%) in a state's SUT rate would increase state-manufacturing employment by only 0.075%. The effect of SUT burden on employment in the manufacturing industry has also diminished over time. Despite the limited effect, these results do have important policy implications in the present, as state legislators must balance revenue needs with the desire to provide economic development incentives.

In a recent report, the Good Jobs First group evaluates so-called megadeals between state or local governments and private firms from 1983 to 2013 (Mattera et al. 2013). Over this 30-year period, $64 billion in subsidies were awarded by states to encourage capital investment from targeted industries and to create or retain jobs. A total of 240 "megadeals," defined as subsidy awards with a total state and/or local cost of $75 million or more, were completed during the sample period. The overall average cost of a megadeal in the study was $269 million. Eleven of these megadeals cost over $1 billion in tax dollars. The authors found that during the 30-year sample period, the incidence of megadeals and the costs associated with them accelerated, reaching an average annual cost of $5 billion across the US. Megadeals in the 1980s averaged $157 million per deal. The average rose to $175 million in the 1990s and to $325 million in the 2000s. It then declined to $260 million per deal from 2010 to 2013.

The Good Jobs First study dives into the large-scale and high costs associated with tax incentives for large private firms, finding that costs per job were quite high and that many of these benefits were accruing to large corporations that may have located in the state anyway (Mattera et al. 2013). Many of the companies wooed by megadeals were large, well-established firms. For example, Alcoa has received around $5.6 billion from New York alone, with Boeing ($4.4 billion), Intel ($3.6 billion), and General Motors ($2.7 billion) rounding out the top four recipients of state and local economic development subsidies during the study period. Additionally, some deals led to little to no job creation, as one in 10 of the deals involved the mere relocation of an existing facility, often within the same state. The study found that, among megadeals creating new jobs, the cost per job varied widely from under $25,000 to more than $7 million per job, with an average cost per job of $456,000. Eighteen of the megadeals exceeded a cost per job of $1 million.

Georgia's computer equipment sales tax exemption is far from a megadeal, with an average annual cost of $114 million state and local tax dollars distributed between more than 20 firms (Georgia DOR 2022). Although the megadeals reviewed in the Good Jobs First study are outliers

in their value proposition, it is important for legislators to scrutinize the perceived effectiveness of tax incentives, as these subsidies can be difficult to claw back or unwind once they are set in motion. To provide the best value for taxpayers, it is essential to compare the return on investment of tax incentives to the alternative scenario in which the state collects the tax dollars and spends them on public services, such as education, health care, and public safety.

6. Economic Impact

This section presents the total amount of increased economic activity attributed to the Georgia computer equipment sales tax exemption. This includes any additional tax revenues associated with newly created jobs or expanded work hours for existing jobs in the targeted high-technology industries, as well as the spillover effects to supporting industries (Demski 2020). Economic impact analyses also include induced impacts or "ripple effects" as employees in supporting industries spend their earnings on goods and services.

The analysis begins with estimates of total gross economic activity generated by the sales tax exemption, followed by projections for spending on similar computer equipment through 2027. Next, this section presents calculations of net economic activity generated by the tax exemption and calculates the return on investment for the exemption. These results are compared with the economic activity that would have been generated under an alternative-use scenario in which the tax is collected and spent in a manner similar to all other tax revenues. These calculations allow for a direct comparison between the return on investment for the tax exemption and an alternative, hypothetical situation in which it does not exist.

HOW ECONOMIC ACTIVITY IS MEASURED

Economic impact modeling is a technique used to estimate how a new firm, facility, or policy change will affect a specific economy, such as a county, region, or state. Such estimates are often produced using an input-output model that first calculates a baseline forecast of economic activity for a geographic region and then estimates how shocks (inputs) to the economy alter economic activity (output). For this report, Institute of Government researchers estimated the economic impacts of the Georgia computer equipment sales tax exemption for high-tech companies.

Institute researchers use IMPLAN, a widely used and accepted county-level economic model of the United States, to estimate the economic impacts of projects and changes to public policy. This model produces a baseline economic forecast using data from the US Census Bureau, the North American Industry Classification System (NAICS), the Bureau of Economic Analysis, and the Bureau of Labor Statistics as well as other data from the US Department of Commerce.

An input, or change to the economy, is added to the model. Inputs can be new jobs, labor income, increased demand for goods and services, or a variety of policy changes, such as a tax credit. IMPLAN estimates the overall change in economic activity resulting from the change. The economic measures reported by the model include the number of jobs supported, the labor income associated with those jobs, the value added (or lost) to the economy in the particular

geographic region being studied, and the total economic output added (or lost) as a result of the change.

IMPLAN provides estimates of the direct, indirect, and induced effects of an economic event – in this case, the purchase of qualifying computer equipment attributable to the sales tax credit. Direct, indirect, and induced effects are estimated for employment, labor income, value-added impact, and total output impact.

Total output impacts are the most inclusive, and largest, measures of economic impact. Because of its high dollar value, total output is often the most quoted figure in economic impact studies and receives the most attention. One issue with using total output as a measure of economic impact, however, is that it includes the value of inputs produced by other industries, which means that there is inevitably some double-counting of economic activity. The other measures of economic impact—employment, labor income, and value-added—are free from double-counting and provide a much more realistic measure of true economic impact.

IMPLAN's value-added figure equates to an increase in state GDP, which consists of employee compensation, proprietor income, property income, and indirect business taxes. Value-added is equivalent to gross output (sales or receipts and other operating income, commodity taxes, and inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Because value-added impacts exclude expenditures from foreign and domestic trade, they are a more accurate measure of the actual economic benefits flowing to businesses and households in a region—in the case of this evaluation, Georgia—than the more inclusive output impacts.

For example, imagine that a baker in Thomasville, Georgia, purchases his grain from Kansas. A truck driver from Kentucky hauls the grain from Kansas to Thomasville. The bread is wrapped in plastic bags manufactured in China that are imported on a container ship that docks in Savannah. The bags are delivered by another truck driver who lives in Tifton, Georgia. The baker then bags and delivers the final product—loaves of bread—to a grocery store in Valdosta, Georgia, where the bread is sold for $3 per loaf. While all of these activities are economic in nature and create new capital expenditures, labor, and indirect and induced spending, the total output measure would add the value at each stage. This would include the grain and bags used to produce the final product as well as the labor and transportation costs to deliver the inputs for the bread, amounting to a much greater total economic impact than what actually accrues within Georgia.

Using this same example, but instead calculating the value-added impact to Georgia, the grain from Kansas, the Kentucky trucker's output, and the plastic packaging from China would all be factored out of the equation. However, inputs such as compensation paid to the baker's employees in Georgia, electricity use supplied by Georgia Power, and compensation to the

trucker who lives in Tifton are examples of economic inputs that would remain in a value-added calculation of new economic activity.

GROSS ACTIVITY

Table 1 shows the gross economic activity generated by the $1.1 billion in computer equipment purchases in 2018. Note that total economic output resulting from the $1.1 billion expenditure is considerably less than the expenditure itself. This is due to the fact that essentially all of these large scale computer equipment purchases are for equipment that is manufactured outside of Georgia (typically overseas). The cost of components such as computer chips, wiring, server housings, racks and so on, as well as the labor required to assemble them, represents "leakage" of dollars from Georgia's economy and does not contribute to economic activity in the state. The economic impact that does accrue to Georgia is added through the small number of jobs related to delivery, setup, and maintenance of this equipment. Institute researchers chose 2018 as a representative year since it was the most recent, complete, year of data; companies can still retroactively file for the Computer Equipment Exemption up to three years. For each $1 million in computer equipment purchased, 2.5 direct jobs were created. Including indirect and induced employment, 4.8 total jobs are created for each $1 million in computer equipment purchased. Total value-added to Georgia—or state GDP—only increased by 43.7 cents for every dollar used to purchase computer equipment.

Table 1. Economic Impact of Gross Activity Generated by the Computer Equipment Tax Exemption in 2018

Impact	Employment	Labor Income	Value-Added	Output
Direct	2,760	$223,589,023	$248,539,420	$375,850,713
Indirect	979	$57,316,389	$89,133,676	$168,301,322
Induced	1,607	$77,649,386	$144,680,392	$248,741,984
Total	**5,346**	**$358,554,797**	**$482,353,488**	**$792,894,019**

Source: Georgia Department of Revenue 2022; IMPLAN 2018 Data.

THE "BUT FOR" PROPOSITION

It would be incorrect to assume that all qualifying computer equipment purchases over $15 million are a direct result of the sales tax exemption. In fact, data centers and other intensive users of computer equipment have existed in Georgia for decades and "refreshed" equipment on a regular basis before the credit existed. Therefore, the credit is likely to only lead to incremental changes in the purchase of more, newer, or more expensive replacement equipment, or to lead to a company simply being able to refresh equipment at a lower cost.

While "but for" studies aimed specifically at sales tax exemptions for computer equipment purchases are scarce, several studies estimate that less than 6% of total capital expenditure purchases, including computer equipment purchases, in a given state may be attributed to a tax

exemption (Horowitz, Taylor, & Waldon 2016; Bartik & Hollenbeck 2012; Florida OPPAGA 2015). In other words, 95% to 97% of those purchases would have occurred without —or "but for"— the exemption. In the absence of more accurate data (e.g., reporting of only a minimum threshold of $15 million instead of actual purchase amounts), the research team assumes that 7.35% of qualifying purchases are a direct result of the exemption. This percentage assumes that every tax dollar saved due to the exemption was reinvested into computer equipment purchases, and that this reinvestment would result in, at most, an increase in total purchases of 7.35%. The researchers also assume that purchase increases in excess of 7.35% were likely based on some factor other than the presence of the tax exemption. In intuitive terms, a company would be expected to spend 92.65% of computer equipment purchases "but for" the incentive.

Table 2 displays the number of jobs, labor income, value added impact, and total output impact of Georgia's Computer Equipment Tax Exemption projected through 2027 after the but for reduction. Jobs range from a low of 393 in 2018 to a high of 1,149 in 2027. Labor income ranges from a low of $26.4 million in 2018 to a high of $81.8 million in 2027. Value added impact ranges from a low of $35.5 million in 2018 to a high of $116 million in 2027. Total output impact ranges from a low of $58.3 million in 2018 to a high of $191 million in 2027.

Table 2. Jobs, Labor Income, Value Added, and Output by Year, 2018–2027

Real Data	2018	2019	2020	2021
Jobs	393	454	516	532
Labor Income	$26,353,777	$29,592,449	$35,138,275	$37,900,029
Value Added	$35,452,981	$42,119,679	$47,324,263	$53,696,504
Total Output	$58,277,710	$69,858,973	$76,094,110	$88,451,040

Projected Data	2022	2023	2024	2025	2026	2027
Jobs	666	762	859	956	1,052	1,149
Labor Income	$47,434,056	$54,317,244	$61,200,431	$68,083,619	$74,966,807	$81,849,995
Value Added	$67,204,249	$76,956,302	$86,708,356	$96,460,410	$106,212,467	$115,964,517
Total Output	$110,701,541	$126,765,516	$142,829,491	$158,893,466	$174,957,441	$191,021,415

Source: Georgia Department of Revenue and IMPLAN (2018–2022)

ALTERNATIVE USE OF FORGONE REVENUE

When evaluating tax credits, it is important to remember not only what is being gained by stimulating the desired activity, but also what is being given up. The analysis presented in Table 3 explores the economic impact of the forgone revenue had the state collected and spent it on social programs and other services. In Georgia, 56.6% of state expenditures go to education: 42 cents of a given tax dollar collected goes to pre-k through 12th-grade education, and 15 cents of that dollar goes to postsecondary education (Georgia General Assembly 2021). Health care makes up the second-largest piece of Georgia's budget at 23 cents of every tax dollar. The remaining 20 cents of each tax dollar is spent on public safety, transportation, and other government services.

The Institute research team calculated the economic impact of the alternative-use scenario using 2018 as an example year. Recall that Figure 4 showed that in 2018, the State of Georgia did not collect a total of $44,122,261 in sales tax on computer equipment purchases that would have been collected had the exemption not existed. The analysis in Table 3 shows the impact that these forgone revenues would have produced had they been collected. Georgia State University's Fiscal Research Center (FRC) provided the spreadsheet used to calculate this alternative-use scenario. By collecting and spending the $44 million in revenue, the State of Georgia would have created a value-added economic impact of $59 million through indirect and induced employment and spending. That $44 million in state revenue would create 882 direct jobs, meaning that 20 state government jobs are created for each $1 million in revenue. This figure is exponentially larger than the number of jobs created by $1 million in computer equipment purchases (2.5). If indirect and induced jobs are included, each $1 million in revenue supports 27 jobs across the state, including jobs in private industry. Again, this figure is over five times higher than the total jobs figure for computer equipment spending (4.8).

Table 3. Economic Impact of Alternative Use of Forgone Revenue

Impact	Employment	Labor Income	Value-Added	Output
Direct	882	$33,681,891	$31,442,766	$44,122,261
Indirect	82	$4,245,320	$7,225,538	$13,971,317
Induced	221	$10,637,180	$20,221,205	$34,620,263
Total	**1,186**	**$48,564,391**	**$58,889,508**	**$92,713,840**

Source: Georgia Department of Revenue 2022; IMPLAN 2018 data; FRC 2022

NET ECONOMIC ACTIVITY

Table 4 presents projected future qualifying computer equipment purchases and estimates of accompanying forgone sales tax revenue through 2027. Future amounts are simply a linear projection of the trend in actual data for 2015–2022 supplied by the Georgia Department of Revenue. This linear trend represents a conservative estimate of qualifying computer

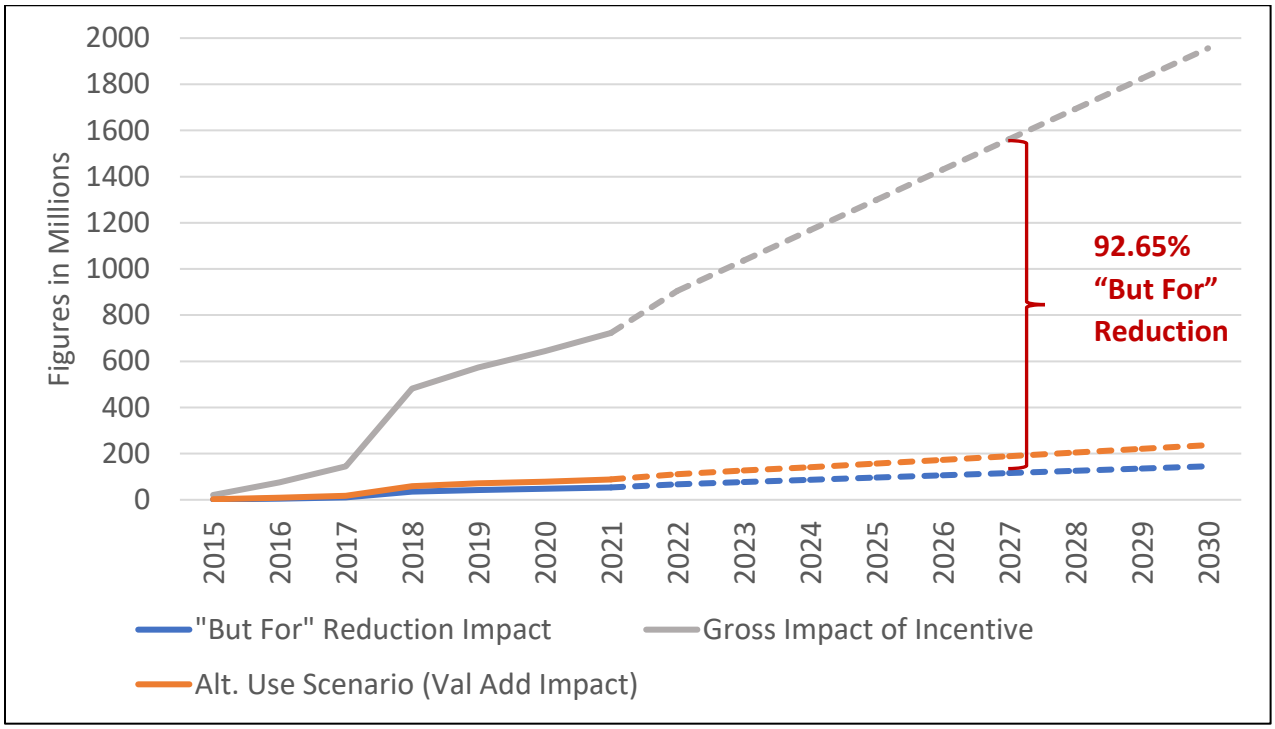
equipment purchases going forward (Figure 5). It is important to note that not only will current owners of such computer equipment need to continue to refresh equipment, but that newly constructed, large-scale data centers, or "hyper-scale" data centers, in the state will also begin to refresh equipment. In this sense, the success of the Data Center Sales Tax Exemption (68.1) will bring new data centers to the state that make large computer equipment purchases in the future, creating a "snowball effect" on the Computer Equipment Exemption (68).

The value-added economic impact of incremental purchases due to the sales tax exemption are shown in Table 4. Note that the economic impact of *all* exempted purchases is not the basis for the economic impact calculations, since the research team assumes that 92.65% (100% – 7.35% (sales tax exemption) = 92.65%) of the activity would have occurred but for the exemption.

Compared with the ROI of some other tax exemptions, even using the relatively optimistic 7.35% but for percentage for the computer equipment tax exemption results in a negative ROI ranging from –0.21 to –0.18. Adding the 4% state tax on 10% of the initial $15 million in computer equipment purchases in 2024 does not significantly improve the ROI of the incentive. This result is rooted in the fact that, based on conversations with industry representatives, the vast majority of computer equipment is purchased outside the State of Georgia. In fact, several industry representatives suggested that most of this computer equipment is manufactured outside the United States. Purchases outside of the region are commonly referred to by economists as "leakage," meaning that dollars spent on these purchases "leak" from the local economy of the study region (i.e., Georgia) to other regions. Consequently, the associated indirect impact—that is, the impact of materials and labor used to produce the equipment—does not add dollars to the state economy. In fact, the only value-added impact of these purchases on Georgia's economy is likely the transportation jobs related to delivering the equipment and the labor involved in installing the equipment. As a result, the forgone sales tax revenue on billions of dollars' worth of computer equipment is a substantially greater figure than the resulting economic impact of the relatively small number of jobs created.

The value-added impact of $44 million in tax dollars having been collected and spent by the State of Georgia in 2018 had the exemption not been in place, the alternative-use scenario, amounts to $58.9 million. The ratio of these two numbers yields an ROI of 0.33 (Table 4). Stated differently, for each $1 of revenue the State of Georgia collects and spends, $1.33 accrues to the state economy. Since Georgia tax dollars are spent almost exclusively on goods and services within Georgia, leakage is low to nonexistent. Compared to computer equipment purchases, which are largely imported from overseas, it is unsurprising that greater economic impact accrues to Georgia when tax dollars are collected and spent in the state than when exempted sales tax dollars on imported equipment are reinvested to purchase more of that same imported equipment.

Figure 5. Value-Added Economic Impact of Incentive (Gross and Amount Attributed to Incentive) and Alternative Use by Year, 2015–2030



Source: Georgia Department of Revenue 2022; IMPLAN 2018 Data; FRC 2022

Table 4. Actual and Projected Economic Impact of Georgia's Computer Equipment Tax Exemption, Alternative Use Economic Impact, and ROI by Year, 2018–2027

Actual Data	2018	2019	2020	2021
Total Spent	$1,103,056,535	$1,336,513,740	$1,464,091,081	$1,661,231,836
Forgone State Sales Tax Revenue	$44,122,261	$53,460,550	$58,563,643	$66,449,273
"But for" Reduction	$81,074,655	$98,233,760	$107,610,694	$122,100,540
Incentive Value-Added	$35,452,981	$42,119,679	$47,324,263	$53,696,504
Incentive ROI	–0.20	–0.21	–0.19	–0.19
Alt.-Use Value- Added	$58,889,508	$71,353,222	$78,164,266	$88,689,132
Alt.-Use ROI	0.33	0.33	0.33	0.33

Projected Data	2022	2023	2024**	2025	2026	2027
Total Spent	$2,079,126,759	$2,380,830,238	$2,682,533,717	$2,984,237,196	$3,285,940,675	$3,587,644,153
Forgone State Sales Tax Revenue	$83,165,070	$95,233,210	$105,741,349	$117,689,488	$129,637,627	$141,585,766
"But for" Reduction	$152,815,817	$174,991,023	$197,166,228	$219,341,434	$241,516,640	$263,691,845
Incentive Value-Added	$67,204,249	$76,956,302	$86,708,356	$96,460,410	$106,212,467	$115,964,517
Incentive ROI	–0.19	–0.19	–0.18	–0.18	–0.18	–0.18
Alt.-Use Value-Added	$110,999,527	$127,106,744	$141,131,844	$157,078,897	$173,025,950	$188,973,003
Alt. Use ROI	0.33	0.33	0.33	0.33	0.33	0.33

** State sales tax on 10% of the first $15 million in computer equipment purchases goes into effect in 2024. Source: Georgia Department of Revenue and IMPLAN (2018–2022)

7. Fiscal Impact

This section presents estimates of the fiscal impact of the sales tax exemption on the state budget. This analysis provides a measure of the total change in state revenues attributable to the exemption. The largest component of the total fiscal impact is forgone tax revenue resulting from the direct cost of the exemption. This amount, projected to 2027, is shown in the first row of Table 5. Projections are based on Department of Revenue data on qualifying computer equipment purchases between 2015 and 2022 and Institute estimates of equipment purchases by newly constructed data centers as they begin the cycle of updating or "refreshing" equipment that was initially exempted from sales tax under the data center exemption (68.1).

Because firms are assumed to spend additional dollars on computer equipment purchases as a result of the tax exemption, the state will collect additional tax revenues on the direct, indirect, and induced spending associated with these purchases. IMPLAN's estimates of these additional state tax revenues are shown in the second row of Table 5.

Other aspects of the fiscal impact calculation include additional state revenue, administrative costs, and reduced state spending. Because there are no application fees or other costs associated with utilizing the credit, additional revenues to the state (typically fee revenue) are assumed to be zero. Based on conversations with Georgia Department of Revenue officials, no new positions have been created to administer or audit this tax exemption program, and personnel resources currently allocated to administering the credit are minimal; therefore, this cost is also assumed to be zero and thus not included in Table 5. There are also no known reductions in state spending that result from the credit; hence, this is also assumed to be zero and is similarly not included in Table 5.

The fiscal impact estimates shown on the last line of Table 5 represent the net of forgone tax revenue and increased tax collections. Fiscal impacts range from a loss of $42.4 million in 2018 to a loss of $136.2 million in 2027. Fiscal impacts are projected to increase each year due to a larger number of taxpayers utilizing Georgia's Computer Equipment Tax Exemption.

Table 5. Fiscal Impact of Georgia's Computer Equipment Tax Exemption, 2018–2027

Year	2018	2019	2020	2021	2022	2023
Forgone Tax Revenue	–$44,122,261	–$53,460,550	–$58,563,643	–$66,449,273	–$83,165,070	-$95,233,210
Increased State Tax Collections	$1,652,574	$2,011,133	$2,397,561	$2,483,788	$3,108,604	$3,559,695
Fiscal Impact	–$42,469,687	–$51,449,417	–$56,166,082	–$63,965,485	–$80,056,466	-$91,673,515

Year	2024	2025	2026	2027
Forgone Tax Revenue	–$105,741,349	–$117,689,488	–$129,637,627	–$141,585,766
Increased State Tax Collections	$4,010,787	$4,461,878	$4,912,970	$5,364,061
Fiscal Impact	–$101,730,562	–$113,227,610	–$124,724,657	–$136,221,705

Source: CVIOG Projections based on Georgia Department of Revenue Computer Equipment Expenditure Data & IMPLAN 2018–2022 data

8. Public Benefit

In most cases, tax incentives have intangible public benefits that cannot be captured by traditional economic impact estimates. These intangible benefits may be stated or implied as the intent—or part of the intent—of a credit, or they may simply accrue as an externality, or side effect, of the credit. While the preceding estimates are based solely on a quantitative analysis of tax expenditures and their resulting economic impacts, note that a number of intangible benefits of Georgia's computer equipment tax exemption, though immeasurable, likely exist.

The economic impact calculations presented here are based on only a short-term projection of computer equipment purchases and their economic impacts, along with accompanying forgone sales tax revenues. The "but for" calculation assumes that the majority (100% – 7.35% = 92.65%) of these purchases would have been made without the credit. This analysis assumes that companies utilizing the credit will not change their purchasing behavior by more than 7.35% due to a 7.35% tax exemption. This assumption is likely a safe bet in the short run, because companies purchasing over $15 million of computer equipment per year are not easily or inexpensively relocated to a lower-cost area, such as a state that offers more generous incentives.

In the long run, however, these companies factor tax incentives, along with other information, into their decision to remain in Georgia or relocate to another state. In other words, data centers that are not mobile in the short run may become mobile in the long run as relative costs of doing business change. Computer sales tax exemptions represent a cost savings that could tilt the relative cost of doing business in favor of areas of the country actively competing for these businesses. While analyzing Georgia's overall competitiveness in attracting high-technology companies versus other states is well beyond the scope of this analysis, some measure of Georgia's attractiveness to high-tech companies deserves consideration prior to modifying the current computer equipment exemption.

Tax exemptions are one of many factors that create a positive business climate. Even the most complex models cannot include or control for every factor relevant to business decision-making or economic growth (Buss 2001). Other factors include corporate tax rates, commercial real estate prices, utility rates, the risk of natural disasters, the talent pool, and proximity to transportation hubs such as airports. While tax incentives may not be the primary factor in location selection, they are certainly one of a group of factors impacting that decision. Consequently, lack of incentives, or a repeal of existing incentives, may signal a negative business climate or create an atmosphere of uncertainty for firms planning to relocate or expand. Note also that the concentration of industry may serve to elevate the reputation of a

state as good place to do business, whereas outmigration of industry leaders may have the opposite effect.

Note additionally that state sales tax incentives such as the one analyzed here, are incremental. That is, if a company fails to locate in a specific state due to lack of a sales tax incentive (or any other factor), the potential sales tax is never collected. If that same company chooses to locate in a state because of the exemption, the sales tax is still not collected, but the state stands to collect secondary taxes induced by the presence of the business. The assumption that tax revenue is actually forgone therefore rests on the estimated, but ultimately unknown, "but for" parameter.

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